European Commission DG-TREN

Technical Assistance in support of the Preparation of the European Road Safety Action Programme 2011-2020

Final Report

February 2010

COWI

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List of acronyms and abbreviations

ÁAK Rt	State Motorway Managing Co. Inc., Hungary
ACC	Adaptive Speed Control
ACEM	European Motorcycle Industry
ADAC	Allgemeiner Deutsche Automobil Club
ADAS	Advanced driver assistance systems
AGE	European Elderly Platform
AISCAT	The Italian Association of Tolled Motorways
ÁKMI.	The State Road Technical and Information Non-Profit Enterprise, Hungary
Alcolocks	Breath Alcohol Ignition Interlock Device
ARR	The Romanian Transport Authority
ASFINAG	Austrian motorway operator
BAC	Blood alcohol concentration
BASt	The Federal Highway Research Institute
BESIP	Road Safety Teams, Czech Republic
bfu	The Swiss Council for Accident Prevention
BIRR	Belgium Institute for Road safety
BM	Ministry of the Interior, Hungary
BMVBS	Federal Ministry of Transport, Building and Urban Development
BMVBW	Federal Ministry for Transport, Building and Housing
BMVIT	Austrian Federal Ministry for Transport, Innovation and Technology
CBA	Cost Benefit Analysis
CEA	European Insurance and Reinsurance Federation
CISR	Inter-ministerial Committee for Road Safety (France and Romania
CIVITAS	Programme "of cities for cities
CJIB	Central Fine Collecting Agency, Netherlands
CLECAT	The European Voice of Freight Logistics and Customs Representatives
CNSR	National Road Safety Council (France)
COC documents	certificate of conformity for vehicles
CSDD	Road Traffic Safety Directorate , Latvia
CTC	Cyclists Touring Club, Yorkshire and Humber Region, UK
DaCota project	Project on Accidentology
DEKRA eV	DEKRA AUTOMOTIVE (German vehicle testing company)
DFT	Department for Transport, UK
DG EMPL,	The Directorate-General for Employment, Social Affairs and Equal Opportunities
DG ENV	The Directorate-General for Environment
DG RESEARCH	The Directorate-General for Research
DG TREN	The Directorate-General Energy & Transport
DGC	General Directorate for Roads, Spain
DGT	General Directorate for Road Traffic, Spain
DGTT	The Directorate-General for Land Transport, Portugal
DGV	The Directorate-General for Traffic, Portugal
DP DHL	Deutsche Post DHL
DVR	German Road Safety Council
EARPA	European Automotive Research Partners Association aisbl
eCall	Automatic emergency call for car accident
ECF	European Cyclists' Federation

ECOO	European Council of Optometry and Optics
EDRS	Event Data Recorders System
EEA	European Economic Area
EFCLIN	European Federation of the Contact Lens Industry
ELCF	European Level Crossing Forum
ERA	Estonian Road Administration
ERF	European Union Road Federation
ERSAP	European Road Safety Action Programme
ERSC	European Road Safety Charter
ERSO	European Road Safety Observatory
ERTRAC	European Road Transport Research Advisory Council
ETF	European Transport Workers' Federation
ETSC	European Transport Safety Council
EU	European Union
EUROCITIES	Network of Major European Cities
EUROM I	National Associations of Spectacle and Frame Manufacturers
EUROMCONTACT	European Federation of National Associations and International Manufacturers of Contact Lens Products
EuroNCAP	European New Car Assessment Programme
EuroRAP	European Road Assessment Programme
FEHRL	European Road Research Center
FEVR	European Federation of Road Traffic Victims
FIA Eurocouncil	The Fédération Internationale de l'Automobile
FIAB	Federation of Friends of the Bicycle (Italy)
FinnRa	Finnish Road Administration
FVS	The Federal Roads Agency, Switzerland
GDV	German Insurers Accident Research
GKM	Ministry of Economic and Transports, Hungary
GNR	National Republican Guard, Portugal
GNS	The Group for National Road Safety Co-operation, Sweden
GRSP	Global Road Safety Partnership
HGV	Heavy Good Vehicles
IBSR/BIVV	Belgium Road Safety Institute
ICRF	Inter-ministerial Committee on Road Safety, Greece
IET	Institution of Engineering and Technology (UK)
iRAP	International Road Assessment Programme
IRTAD	International Traffic Safety Data and Analysis Group
IRU	International Road Union
ISA	Intelligent Speed Adaptation
Istat	The Italian Statistical Office body
ITF	International Transport Forum
JOCEU	Joint Optical Committee on European Unioin
KTI	The Transport Science Institute, Hungary
LDA	Lane Departure Assistance
LKAS	Lane Keeping Assistance System
MAUT	The Hungarian Road Association
MEC	Ministry of Economic Affairs and Communications
MFOM	Ministry of Transport and Public Works, Spain
MIEC	Ministry of Industry, Employment and Communication, Sweden
MoI	Ministry of Interior

MoT	Ministry of Transport
MPE	Mobility for Prosperity in Europe
MRD	Ministry of Regional Development
MVRC	Estonian Motor Vehicle Registration Centre
NCMNR	The National Company for Motorways and national Roads
NRSC	National Road Safety Commission
NTF	National Society for Road Safety, Sweden
NVVP	National Traffic and Transport Plan, Netherlands
OBB	National Accident Prevention Committee, Hungary
OBD	On board diagnostics
OECD	Organisation for Economic Co-operation and Development
ORFK.	The National Police Headquarters, Hungary
P.A.U. education	A private company that provides strategic consulting and services of project management in the areas of education and social development
PSP	Public Security Police, Portugal
PTW	Powered two-wheeler
RIF	National Road Infrastructure Fund
ROV	Regional Road Safety Agencies, Netherlands
RRS	Road restraint systems
RSA	Road Safety Authority, Ireland
RSAP	Road Safety Action Programme
RSAP	Road Safety Advisory Panel, UK
RSO	Road Safety Office, Greece
RSSB	Rail Safety and Standard Board (GB)
RVVP	Regional Traffic and Transport Plans; Netherlands
SafetyNet	Study to provide input to European Road safety Observatory
SBR	Seat Belt Reminders
SGVV	Staten-Generaal voor De Verkeersveiligheid
SINDAR	Sistemi Industrial Ambientali Relazionali
SMC	Swedish Motorcyclists Association
T&E	European Federation for Transport and Environment
TISPOL	European traffic police network
TYROSAFE Project	Tyre and Road Surface Optimisation for Skid Resistance and Further Effects
UKIG	Directorate for the Coordination of Road Transport Affairs, Hungary
VdTÜV	Verband der Technischen Überwachungs Vereine, (Association of the technical inspection organisations)
Veh-km	Vehicle kilometre
VERONICA I & II	Vehicle Event Recording based on intelligent crash assessment
WGR	Inter-municipal co-operation, Netherlands

English Summary Report

Consultation process

Stakeholder consultation towards the development of the next EU Road Safety Action Programme 2011-2020 was carried out by the European Commission between July and December 2009. This consultation comprised a series of six thematic workshops and an internet consultation and culminated in a stakeholder conference on 2nd December, 2009. Technical assistance was provided throughout by the COWI Consortium in partnership with Jeanne Breen Consulting and the University of Loughborough, UK.

Introduction

This summary presents conclusions on the key road safety problems which should be addressed at European Union (EU), national and local levels and recommendations for the development of the next road safety action programme. These are based on the recommendations emerging from the public consultation and with reference to the Commission's requirement that priority actions need to achieve a positive impact on road safety and public health while also improving mobility, energy, the environment and the economy. The recommendations cover a range of institutional management functions and processes as well as specific crash injury countermeasures and take account of international good practice. Expert judgement has been used throughout. A systematic impact assessment including cost benefit analysis to allow further rating of the relative importance of recommendations is beyond the scope of this report.

What are the key road safety problems?

Problem analysis

The consultation recognised that road safety problems occur across the road safety management system - whether in the level of road safety *results* achieved (the levels of deaths, serious injuries, costs, levels of drinking and driving, speeding, seat belt use etc), in the scope of the *intervention* set (improving the safety quality of infrastructure, vehicles, user behaviour, and the emergency medical response) or in the quality of *institutional management arrangements* (target-setting, coordination, legislation, funding, promoting, monitoring and evaluation, R&D and knowledge transfer) which provide the foundation for producing improved road safety.

Results

Involvement in a road traffic crash is the leading cause of death and hospital admission for citizens of the EU under 45 years. In 2008, there were 39,000 road traffic deaths and around 300,000 seriously injured casualties. For every death, there are an estimated 4 permanently disabling injuries (such as to the brain or spinal cord), 10 serious injuries and 40 minor injuries. The estimated socio-economic costs are around €180 billion comprising 2% of GDP.

The gap between the best and worst performing Member States is large with the best performing 3.5-4 times (in per capita rate) better than the worst.

The consultation identified current levels of *road death, serious injury and socio-economic cost* as the overarching problems for road safety in EU countries. Around two thirds of all fatal and serious injuries to road users occur outside urban areas, while most serious and fatal injuries to vulnerable road users such as pedestrians and children take place in urban areas**.**

Number of deaths: The casualty groups which determine the priorities for reductions in total deaths in EU countries are *car occupants* who comprised 50% of total deaths, *powered two-wheeler users* (motorcyclist deaths are increasing) and *pedestrians* who comprised 18% and 20% of deaths respectively in 2008. Road assessment data indicates that in middle-income countries the key target for action is the national road network and in high-income countries the target for action is the busy regional road network. The main crash types which need to be addressed are pedestrian and other vulnerable road user crashes, crashes at intersections, run-off-road crashes and head-on crashes. For the EU as a whole, around two-thirds of pedestrian deaths occur in built-up areas.

Risk of death: The casualty groups which determine the priorities for reductions in numbers of deaths and serious injuries amongst highest risk (number of deaths per 100,000 of population) groups in EU countries are *young novice drivers, powered two-wheeler users, pedestrians* and *cyclists.* The consultation highlighted the problems of an ageing society. In particular, the physical vulnerability of older road users contributing to severe outcomes in road crashes will be an issue of increasing importance in the design and operation of the road traffic system.

Interventions

Problems in the intervention set relate to insufficient scope of intervention in road safety strategies, insufficient attention to the evidence base and to addressing the needs and vulnerabilities of all users. Stakeholders acknowledged that serious and fatal injuries in road crashes are preventable and need to be addressed by *system-wide intervention* comprising the planning, design, layout and operation of the network, improvement in vehicle safety, improved post-impact care as well as securing better user compliance with important road safety rules through education, licensing, testing, training and enforcement.

EU, national and local policies needed to focus on the *implementation of evidence-based approaches* to reduce exposure to the risk of death and serious injury; the prevention of death and serious injury; mitigating the severity of injury when a crash occurs and reducing the consequences of injury. Interventions needed to better address the safety of all users and take account of future demographics, notably the physical vulnerability of an ageing society. The need to address *excess and inappropriate speed, reducing impaired driving, insufficient seat belt wearing and crash helmet use, high novice driver and rider risk, improved safety quality of vehicles and road infrastructure for all users* and *improved emergency medical response* were cited throughout the consultation.

Institutional management arrangements

The internet consultation responses highlighted the *lack of political willingness* to prioritize road safety, *insufficient integration and coordination* of activity and *lack of high-level review of safety management performance* as the key problems in institutional leadership and coordination in EU countries.

Stakeholders, in general, believed that there was *insufficient harmonization* of road safety rules and standards and mechanisms for their compliance. Legislation to improve road safety needed to be underpinned by research and development, cost-benefit analysis and systematic monitoring and evaluation. *Problems of obtaining resource commensurate with the size of the road traffic injury problem* are perennial for road safety and are identified as an important obstacle by stakeholders throughout the consultation. *Insufficient promotion and communication* on road safety were also perceived as key problems.

Respondents to the internet consultation rated *the lack of periodic, independent review of road safety performance, the lack of health sector monitoring to establish under-reporting of injuries and the lack of harmonised definition of serious injur*y as the main problems in monitoring and evaluation.

A key problem for road safety highlighted in the consultation is the *need to continue to apply research-based measures* at EU, national and local levels to achieve results in the interim and to identify future solutions. Improving performance of all EU countries relied upon *more effective knowledge transfer*. Strengthened institutional management capacity to address the problems mentioned above was highlighted as the major necessary step in making a difference to the road safety situation in the next decade in Europe.

Recommendations for action at EU, national and local levels

What results should the EU and Member States seek to achieve?

The consultation outlined the need for the EU and Member States to address levels of death and serious injury throughout the road network – both in built-up and non built-up areas; to reduce levels of socio-economic cost; to adopt and promote a long-term vision to eradicate death and serious injury and to set challenging but achievable quantitative targets for the interim.

A long-term shared vision and interim targets

At EU level:
- *Adopt a long-term shared vision across the road safety partnership for the future safety of the road traffic system (Safe System) for the ERSAP, the European Road Safety Charter and the European Road Safety Observatory in line with internationally recommended good practice.*
- *Identify and adopt a shared interim target to reduce the number of deaths by a challenging but achievable percentage within the period 2011 – 2020 as the focus for road safety action. Set up small sub-group of experts and officials to consider existing proposals and related analysis on specific targeted levels of deaths. Identify and adopt a separate shared interim target to reduce the number of serious injuries in EU countries based on Member States definitions of serious injury. Consider the adoption of quantitative targets to reduce the risk of death for key vulnerable and unprotected road user groups e.g. for children. Ensure visions, targets and strategies are adopted as a condition of new EU membership.*

At national and local levels:
- *Adopt a long-term vision (Safe System), interim outcome targets and also target intermediate outcomes (e.g. levels of seat belt use, reductions in mean speeds) and institutional outputs(e.g. numbers of breath tests, % of vehicle fleet with 4*+) in new national and local road safety strategies*

Leadership role and capacity

Road safety takes place in a complex multi-sectoral context and requires careful governmental leadership. Effective lead agencies can take many forms and, in good practice, carry out a range of specific functions. In the internet consultation, stakeholder meetings and in additional written contributions, several organisations highlighted the need for the establishment of a European Road Safety Agency.

At EU, national and local levels
- *Review governmental lead agency arrangements, capacity and support for developing, agreeing and implementing new road safety visions, targets, and strategies.*
- *Consider the establishment of a European Road Safety Agency at EU level.*

Integration of policies and coordination arrangements to achieve road safety results

The scope for improvement in coordination of road safety between different sectors with road safety responsibilities as well as between EU, national, regional and local levels was a general observation in the public consultation. The health sector needed to take up road safety as a core responsibility and the 'win-wins' of speed management for transport, health and environment sectors were emphasised in particular. The value of engaging employers to introduce work-related road safety policies was also highlighted as was the value of engaging cities in effective EU-funded municipal road safety initiatives. The need to support effective activity by the non-governmental sector was also highlighted.

At EU and national levels:
- *Review coordination arrangements across government at against international best practice for the establishment and implementation of the action programme to achieve results. Transport, health, justice and police, work, environment, industry, finance and municipalities will form the key partnerships which can help to deliver results.*
- *Engage Parliament business and civil society in the consultative levels of the decision-making hierarchy.*

Legislation and harmonisation to achieve road safety results

Most stakeholders believed that EU and national legislation to set minimum standards of safety but offering a high level of protection for the road network, vehicles and users continues to be necessary and appropriate. Harmonisation to produce road safety results needs to be underpinned by research and development, systematic monitoring and evaluation, cost-benefit assessment and large-scale demonstration projects in the case of new technologies.

At EU and national levels:
- *Recognise that a legislative framework for road safety at EU and national levels continues to be essential.*
- *Expand harmonisation on road safety where EU action can add road safety value to cover standards/ type approval, inspection, audit in the fields of infrastructure and vehicles as well as improved user standards (e.g. harmonised maximum blood alcohol limits and speed limits); cross border enforcement; public procurement policy etc .*
- *Carry out cost-benefit analyses of proposed legislative measures to ensure that the Commission's requirement of achieving a positive impact on road safety and public health while also improving mobility, energy, the environment and the economy is met.*

Funding and resource allocation to achieve road safety results

Funding problems were identified as a key obstacle to achieving results by stakeholders in the internet consultation and thematic workshops. The EU was urged to establish an EU Road Safety Fund; to provide further support for the EU twinning programme to enable best practice and with emphasis on road safety management capacity development; to specific safety criteria in transport and TEN-T projects and to continue to fund research and development and demonstration projects.

At EU and national levels:
- *Review resource levels needed for the implementation of new programmes.*
- *Establish an EU Road Safety Fund for the Road Safety Action Programme.*
- *Provide financial incentives and premium discounts for the take-up of demonstrably effective road safety equipment and promote clear incentives for safe driving.*
- *Fund twinning and demonstration projects to develop good practice road safety management capacity and to support effective RSAP measures in EU and neighbouring countries with lower levels of safety performance.*
- *Specify safety criteria in structural funds, public procurement, transport, TEN-T projects.*
- *Support road safety research as well as demonstration projects*
- *Support EU umbrella NGOs and the extension of networks of NGOs active in road safety.*
- *Establish any benefits for road safety of the internalisation of road crash costs and set out an EU route map for the internalisation of external road crash costs.*
- *Promote cost-benefit analysis in resource allocation, use of 'willingness to pay' and update values.*

Promotion of the shared responsibility to achieve results

The consultation results emphasised that road safety requires promotion at a high-level both inside and outside government aided by a shared vision and targets for the future safety of the traffic system. In-house safe travel policies,

public procurement of safety equipment and best practice communication policies were also highlighted.

At EU, national and local levels:
- *Promote a shared EU road safety vision and EU and national targets at the highest levels of Government, business and civil society in communications policies, through the European Road Safety Charter and European Road Safety Observatory as well as in action programmes.*
- *Show organisational leadership at EU, national and local levels in public and private sectors by introducing in-house safe travel policies.*
- *Amend EU legislation to include the promotion of clean, safe and energy-efficient road transport vehicle in public procurements.*
- *Promote best practice in road safety communication policies and proven measures which reduce deaths and serious injuries in the European Road Safety Charter, the European Road Safety Observatory as well as in national and local frameworks*.

Monitoring and evaluation of results

The need for EU and national actions to improve monitoring and evaluation came out very strongly from the consultation and a wide range of actions were recommended.

At EU level:
- *Monitor the effects of road safety targets, strategies, individual programme measures, including European Road Safety Charter - inspired measures and establish a high-level review team to report on progress and make further recommendations based on evaluation.*
- *Develop, promote and establish a single EU-reporting system for crash injury, exposure and other data. Adopt a standard EU definition for 'severe' and 'minor' injury and implement across databases.*
- *Ensure computerized health sector monitoring of death and serious injury in road crashes in every Member State and conduct studies to ascertain levels of under-reporting in CARE system data.*
- *Stimulate detailed in-depth investigations based on established protocols.*
- *Promote and support independent review of road safety management across the EU and elsewhere.*
- *Establish regular public opinion surveys on road safety*.

At national and local levels:
- *Establish/improve the quality of crash injury databases and data sharing arrangements between police, roads and health authorities and establish levels of under-reporting.*
- *Carry out annual surveys and analysis to collect key exposure data and safety performance data and establish national databases on intermediate outcome data (.e.g. speed, seat belt use in normal traffic) and institutional output data (e.g. numbers of breath tests, speed checks etc.) in line with best practice to inform national strategies on speed management, increasing seat belt use, reducing drinking and driving and improving roads and vehicle fleet quality.*
- *Commission independent peer review of national road safety performance in line with ITF/OECD recommendations.*

Research, development and knowledge transfer

Many respondents and written contributions highlighted stakeholder support for continuing research and knowledge transfer which is seen as key to past successes in reducing casualties, a pre-requisite for further improvement and a means by which the Europe can continue to be the global leader in road safety. The value of the European Road Safety Observatory, the Framework Research Programme and road safety twinning activities were highlighted regularly. The need to build and transfer knowledge on *Safe System* approaches was mentioned several times at the Stakeholder Conference and in the thematic workshops.

At EU level:
- *Establish the European Road Safety Observatory as a permanent EU-funded structure as a source of information and knowledge for all with appropriate human and financial resource and preserving and strengthening the original aims of ERSO as an established and valuable source of knowledge and data for safety decision-making.*
- *Establish authoritative EU best practice guidelines agreed by Member States for activity across the road safety management system.*
- *Promote the development of more 'best practice' resources/ tools for implementation e.g. road safety management capacity review and target-setting tools.*
- *Support capacity building demonstration projects in countries with poor safety results.*

At national and local levels:
- *Establish capacity in-house and with external partners of road safety research and establish national research strategy.*
- *Build and transfer knowledge on Safe System approaches.*
- *Develop and promote best practice guidelines particularly in enforcement & engineering.*
- *Embark on 'peer to peer' twinning activity and professional training at decision-making and practitioner levels for knowledge transfer on effective and innovative activity.*

Towards a safe system

Stakeholders acknowledged that serious and fatal injury in road crashes is preventable and that existing knowledge identifies the opportunity towards safer road networks, safer vehicle fleets, safer emergency medical systems as well as safer drivers, passengers, riders, cyclists and pedestrians.

Planning, design and operation of road infrastructure

Consultation results indicate that road safety engineering and network management should be actively promoted and supported at EU, national and local levels. Safety engineering measures represent a sound investment and a higher benefit/cost ratio, in general, than for other road engineering measures. Action was needed to improve road safety on non-urban, non-motorway roads as they account for around 60% of deaths, nearly 50% of cyclist deaths and around 30% pedestrians. Urban safety management and lowering urban speeds are also essential interventions bearing in mind the lower human tolerance thresholds of pedestrians, children, older users and two wheeler users.

At EU level:

–Apply the Infrastructure Safety Directive providing for safety impact assessment, safety audit, safety inspection and network safety management on TEN-T roads to all roads.

–Develop authoritative EU guidance/best practice guidelines covering a range of safety engineering issues and establish a process of obtaining agreement on EU level guidelines, e.g. land use planning, urban safety management; speed management, self-explaining, crash–protective roads and innovative approaches which contribute to the Safe System approach.

–Expand the Cross Border Green Corridor concept to Cross Border Green and Safe Corridor to include road safety criteria.

–Set minimum standards based on 4 star EuroRAP levels for the TEN-T network.

–Establish road safety engineering criteria for inclusion in EU project investment.

–Play a role in the harmonisation of technical standards (skid resistance, barriers, markings, proven new technologies etc) to ensure minimum standards.

–Promote, standardise and provide for deployment of ISA (Intelligent Speed Adaptation) and other demonstrably effective technologies.

–Promote consumer information (EuroRAP/iRAP) on the risk of specific roads particularly in countries of the last EU enlargement and in neighbouring countries.

–Promote better crash injury and survey data on road network risks.

–Fund demonstration projects and research evaluation for innovative safety engineering, promising new technologies as well as co-operative efforts between vehicle and infrastructure providers to achieve safe travel on the network.

At national, regional and local levels:

– When revising road functional classifications and hierarchies, ensure that an appropriate match between function, speed limit, design and layout is achieved which takes better account of non-motorised as well as motorised use.

–Adopt Safe System approaches to road safety engineering and periodically review national standards, guidelines and processes against international good practice.

–Implement 30km/h zones in residential areas to improve vulnerable road user safety.

–Support and join EuroRAP/iRAP and conduct EuroRAP/iRAP risk mapping and protection scores to help assess the safety quality of roads.

–Apply safety impact assessment, audit, inspection and network safety management procedures to new road and improvement projects.

Vehicle safety

The consultation process demonstrated that the potential substantial opportunities for further casualty reduction resulting from improved vehicle safety and new technologies are well-appreciated. The vehicle safety workshop concluded that linking preventative, active and passive safety; cooperative systems for motor vehicle occupants and vulnerable road users are necessary. The key casualty reduction issues were seen as the need to provide vehicles with facilities to simplify the driving task and to ensure their design and equipment protects the vulnerable human being as effectively as possible, both inside and outside the vehicle. The consultation process noted the importance of EU action on vehicle safety, in particular, and recommended a range of actions to promote the use of vehicle safety rating and fast-tracking of provision of proven safety equipment through safety ratings and public procurement; further harmonisation of vehicle standards and a range of research and development needs.

At EU level:
- *Amend current EU legislation to include the promotion of clean, safe and energy-efficient road transport vehicles in public procurement.*
- *Promote effective technologies such as ISA, alcolocks, seat belt reminders in procurement policies to encourage consumer uptake.*
- *Promote consumer information on the comparative safety of vehicles to encourage rapid changes to vehicle design before 2020.*
- *Provide a route map for the implementation of Intelligent Speed Adaptation and Event Data Recorder systems*
- *Extend current legislation on seat belt reminders to include fitment in rear seats as well as front seats.*
- *Remove the exemption for use of seat belts by taxi drivers.*
- *Develop and propose standardized test methods for car to car compatibility; truck to car compatibility and improved methods for front, side and rear impacts.*
- *Legislate for whole vehicle type approval for powered two wheelers such as effective anti-tampering devices, the fitment of front number plates to aid speed enforcement a mandatory ABS for all two wheeled motor vehicles.*
- *Increase focus on the needs of vulnerable road users in new vehicle safety technologies including pedestrian detection and collision avoidance devices, motorcycle design and equipment.*
- *Legislate for the construction and use of vans and small lorries (< 3.5 ton) as for heavy good vehicles.*
- *Require the fitment of alcolocks in heavy goods vehicles and public transport vehicles and promote their use.*
- *Study the road safety value of a system of continuous compliance to be installed and/or a system for providing technical information for every vehicle*
- *Study the road safety value of legislating for a PTW roadworthiness test*.
- *Implement an EC task force to focus Commission work on new vehicle safety technologies in order to identify the systems with expected most effective casualty reduction.*
- *Develop safety assessment procedures for intelligent systems, human machine interface (HMI) evaluations, identification of systems with greatest casualty potential.*
- *Develop and implement a systematic programme of evaluation of EU legislation and vehicle technologies including cost-benefit analyses.*
- *Carry out research into the safety aspects of electric vehicles.*

At national and local levels:
- *Engage fully in international legislative development work.*
- *Carry out national research and monitoring of vehicle safety measures.*
- *Support and join the European New Car Assessment Programme*.
- *Encourage financial incentives for the use of protective equipment.*
- *Encourage national car industry to fast- track key safety measures recommended by EuroNCAP through in-house travel policies and public procurement.*

Road users - licensing, testing, training, information and enforcement

The main road user strategy recommended in the consultation was to aim for users who are adequately educated and informed about key safety behaviours and their fitness to use the roads; restricted against action which may lead to death and serious injury through a variety of means (including self-enforcing vehicle and road engineering measures) and deterred through police and automatic enforcement. A range of recommendations were made during the consultation in relation to further EU harmonisation of licensing, testing, and training. The most important of these for casualty reduction are graduated licensing for novice drivers and riders to reduce exposure to high risk. The most important countermeasures relating to enforcement were assessed to be combined public-

ity and high visibility police enforcement of important safety rules, deterrence of drinking and driving/riding, enforcement of speed limits, seat belt and crash helmet use and cross-border enforcement. The important role of the vehicle and the EU in helping to achieve compliance through seat belt reminders, ISA, alcolocks etc. was acknowledged.

At EU level:
- *Harmonise further licensing, testing and training for all motor vehicle drivers and improve the safety quality of the whole package based on evidence and best practice.*
- *Harmonise graduated licensing for novice drivers and riders to include accompanied driving; probationary periods (driving alone at night time, zero blood alcohol content, and stricter demerit point system).*
- *Harmonise cross-border enforcement*
- *Review age of access to riding/driving different motor vehicles based on international best safety practice.*
- *Harmonise further qualifications of motor vehicle driving examiners and vehicle inspectors.*
- *Develop authoritative best practice guideline/protocols in support of key areas of enforcement.*

At national level and local levels:
- *Carry out social marketing campaigns and combined enforcement and publicity to encourage compliance with key safety rules.*
- *Introduce owner liability for automated enforcement offences.*
- *Introduce rehabilitation programs for offenders*

Post-impact care

While the Internet consultation process did not expressly seek opinions concerning problems and priorities, research shows that the quality of the emergency medical system can have an important bearing on the survivability of crashes and the prevention of disability. For major injuries, clinical experts define the post-impact care needed in EU countries as the chain of help starting with action taken by the victims themselves or more commonly by lay bystanders at the scene of the crash, emergency rescue, access to the pre-hospital medical care system, and trauma care and helping road crash victims who have suffered debilitating injury re-integrate into work and family life. The importance of post-crash care was highlighted both in the thematic workshops and written contributions.

At EU, national and local levels:
- *Acknowledge that the quality of the emergency medical system is key to achieving a safe traffic system.*
- *Review the potential contribution of improved emergency medical response to targets and strategies.*
- *Measure emergency medical response times between the crash scene and arrival at a medical centre against international best practice.*
- *Promote first responder schemes and in-service training for professional and commercial drivers.*
- *Promote eCall.*

Résumé français

Processus de consultation

La consultation des parties intéressées réalisée dans le cadre du développement du futur Programme d'action européen pour la sécurité routière 2011-2020 a été menée par la Commission européenne entre les mois de juillet et de décembre 2009. Cette consultation a consisté en six ateliers thématiques, ainsi qu'une consultation via Internet, lesquels ont abouti à une conférence réunissant les parties intéressées qui a eu lieu le 2 décembre 2009. Une assistance technique a été fournie tout au long de ce processus par COWI Consortium, en partenariat avec Jeanne Breen Consulting et l'Université de Loughborough en Grande-Bretagne.

Introduction

Le présent document synthétise les conclusions tirées sur les principaux problèmes de sécurité routière qui doivent être résolus au niveau communautaire, national et régional, ainsi que des recommandations destinées au développement du futur Programme d'action européen pour la sécurité routière. Celles-ci reposent sur des recommandations résultant de la consultation publique et en rapport avec la nécessité exprimée par la Commission selon laquelle des actions prioritaires doivent avoir des conséquences positives sur la sécurité routière et la santé publique, tout en améliorant la mobilité, l'énergie, l'environnement et l'économie. Ces recommandations concernent différentes fonctions et processus de gestion institutionnelle, ainsi que des mesures spécifiques destinées à réduire la fréquence et gravité des blessures et décès dus aux accidents de la route. Elles tiennent compte de bonnes pratiques internationales et sont le produit des analyses et conclusions d'experts. Une évaluation systématique des impacts et une analyse du rapport bénéfices/coûts qui permettrait une estimation plus précise de l'importance relative de ces recommandations n'entre pas dans le cadre de ce rapport.

Quels sont les principaux problèmes liés à la sécurité routière ?

Analyse du problème

La consultation des parties intéressées a mis en lumière que les problèmes de sécurité routière concernent le système de gestion de cette dernière dans son ensemble, et cela, tant au niveau des *résultats* dégagés en matière de sécurité routière (décès, blessures graves, coûts, degrés d'alcoolisme au volant, excès de vitesse, port de la ceinture de sécurité, etc.), que de la portée des *interventions* (visant à améliorer en termes qualitatifs la sécurité des infrastructures, des véhicules, du comportement des usagers, de la réactivité du système d'urgences

médicales) ou de la qualité des *mesures institutionnelles* (définition des objectifs, coordination, réglementation, financement, promotion, suivi et évaluation, R&D et transfert de connaissances), lesquels forment la base d'un programme visant une meilleure sécurité routière.

Résultats

Pour les citoyens européens de moins de 45 ans, les accidents de la route sont la première cause de décès et d'hospitalisation. En 2008, ont été enregistrés 39 000 décès liés aux accidents de la route, et environ 300 000 accidentés graves. Pour chaque décès, on estime qu'il convient de compter 4 lésions invalidantes permanentes (affectant le cerveau ou la moelle épinière, par exemple), ainsi que 10 blessures graves et 40 blessures bénignes. Les coûts socioéconomiques correspondants sont estimés à environ 180 milliards d'euros, soit 2 % du PIB.

L'écart entre le plus et le moins performant des États Membres est considérable, le premier étant 3,5 à 4 fois plus performant (en taux par habitant) que le second.

Le processus de consultation a identifié les taux actuels de *mortalité sur la route, de blessés graves et leurs coûts socioéconomiques* comme étant des problèmes universels en matière de sécurité routière dans chacun des États Membres de l'UE. Près des deux tiers des décès et des blessures graves concernant les usagers de la route se produisent hors des zones urbaines, alors que la plupart des décès et des blessures graves concernant les usagers de la route vulnérables, tels que les piétons et les enfants, se produisent dans des zones urbaines.

Nombres de décès **:** Les groupes de victimes qui déterminent les priorités pour la réduction du nombre total de décès dans les pays de l'UE, sont les *occupants des véhicules* (lesquels représentent 50 % du nombre global de personnes décédées), les conducteurs de *véhicules motorisés à deux-roues* et les *piétons*, qui représentent, respectivement, 18 % et 20 % des décès. Les données sur l'évaluation des routes viennent indiquer que dans les pays à revenu moyen, les actions entreprises visent majoritairement le réseau national routier et que dans les pays à revenus élevés, les mesures adoptées visent le réseau routier régional à fort trafic. Les principaux types d'accident à prendre en considération sont ceux qui impliquent des piétons et d'autres usagers de la route vulnérables, ceux qui se produisent à des carrefours, les sorties de route et les collisions frontales. Pour l'ensemble de l'UE, environ deux tiers des décès de piétons se produisent dans des zones d'habitation.

Risque de décès **:** Les groupes de victimes qui déterminent les priorités en termes de réduction du nombre de décès et de blessures graves parmi les groupes à hauts risques (nombre de décès pour 100 000 personnes) dans les pays de l'UE, sont les *jeunes conducteurs inexpérimentés, les conducteurs de véhicules motorisés à deux-roues, les piétons et les cyclistes.* La consultation a mis en exergue les problèmes liés au vieillissement de la population. Notam-

ment, la vulnérabilité physique des usagers de la route les plus âgés - entraînant des séquelles graves en cas d'accident de la route - prendra, dans les années à venir une importance croissante pour la conception et la gestion du système de trafic routier.

Interventions

Les problèmes d'intervention sont liés à l'insuffisance de l'envergure des interventions dans les stratégies de sécurité routière, à l'insuffisance de l'attention portée à l'analyse des données disponibles (evidence based approach) et de la prise en compte des besoins et des vulnérabilités de tous les usagers. Les parties intéressées ont reconnu que des blessures graves ou mortelles liées à des accidents de la route peuvent être évitées par une *intervention à l'échelle du système*: aux différents stades de la planification, de la conception, de la mise en oeuvre et de la gestion du réseau. Cette intervention comprendrait l'amélioration de la sécurité des véhicules, une meilleure prise en charge post-accidents, un meilleur respect des règles fondamentales de sécurité routière, à travers l'éducation, l'obtention du permis de conduire, les examens, la formation et l'application des lois et réglementations.

Les politiques communautaires, nationales et locales devraient se concentrer sur la *mise en œuvre d'approches basées sur l'analyse des données* pour réduire l'exposition aux risques de blessures graves ou mortelles, promouvoir la prévention de ces blessures et la réduction de la gravité et des conséquences des blessures en cas d'accident et. Les interventions devraient mieux prendre en charge la sécurité de l'ensemble des usagers et tenir compte de critères démographiques, et notamment de la vulnérabilité physique d'une population vieillissante. Les principaux problèmes soulignés lors de la consultation sont *les excès de vitesse ou la vitesse inadaptée des véhicules, la conduite en état d'ivresse, le port insuffisant de la ceinture de sécurité et du casque, les risques élevés liés aux conducteurs de véhicules à 4 ou 2 roues peu expérimentés, une meilleure sécurité des véhicules et des infrastructures routières pour l'ensemble des usagers* et *une plus grande réactivité des services d'urgences médicales*.

Dispositions en matière de gestion institutionnelle

La consultation par Internet a mis en exergue plusieurs problèmes importants au niveau des organismes institutionnels et chargés de la coordination dans les pays européens, à savoir le *manque de volonté politique* pour faire de la sécurité routière une priorité, l'*insuffisance de l'intégration et de la coordination de l'activité* et le *manque d'évaluations des performances* en matière de gestion de la sécurité *à haut niveau*.

En règle générale, les parties intéressées étaient convaincues de l'*insuffisance de l'harmonisation* des règles et des normes de sécurité routière, et des mécanismes censés les faire respecter. La législation doit améliorer la sécurité routière, laquelle doit être soutenue par la recherche et le développement, une analyse du rapport bénéfices/coûts et un suivi et évaluation systématiques. *Les problèmes liés à l'obtention de ressources adaptées à l'échelle du problème des*

victimes de la route sont chroniques pour ce qui est de la sécurité routière et ils ont été identifiés comme un obstacle majeur par les parties intéressées tout au long de la consultation. L'insuffisance des actions de promotion de comportements positifs *et de communication* en matière de sécurité routière ont également été perçues comme des problèmes importants.

Pour les personnes ayant répondu à la consultation par Internet, les principaux problèmes en matière de suivi et d'évaluation sont *le manque d'évaluation périodique et indépendante des performances de sécurité routière, l'insuffisance du suivi du signalement des blessures dans le secteur sanitaire et l'absence de consensus pour une définition de « blessure grave »*.

Un autre problème important en matière de sécurité routière a été mis en évidence lors de la consultation, à savoir, *la nécessité d'appliquer des mesures basées sur les conclusions des recherches*, à l'échelle communautaire, nationale et locale, afin d'obtenir des résultats à court terme et d'identifier des solutions à long terme. L'amélioration des performances de tous les pays de l'UE dépendrait d'un *transfert technologique plus efficace*. Un renforcement des capacités de gestion institutionnelle, permettant de prendre en charge les problèmes mentionnés plus haut, a été jugé comme une étape importante et nécessaire pour redéfinir la situation de la sécurité routière au cours de la prochaine décennie en Europe.

Recommandations pour une action à l'échelle communautaire, nationale et locale

Quels résultats l'UE et les États membres doivent-ils viser ?

Il ressort de la consultation que l'UE et les États Membres doivent prendre en considération les niveaux de blessures graves et mortelles dans l'ensemble du réseau routier, que ce soit en ou hors agglomération, afin de réduire les coûts socioéconomiques, d'adopter et de promouvoir une vision à long terme dans le but d'éliminer les blessures graves et mortelles, et de définir des objectifs quantitatifs intermédiaires, à la fois ambitieux et réalisables.

Une vision commune sur le long terme et des objectifs intermédiaires

À l'échelle communautaire :

- *Adopter une vision commune sur le long terme entre tous les partenaires engagés pour l'avenir de la sécurité du système routier (Système Sécurisé), pour la Charte européenne de la sécurité routière (ERSAP) et l'Observatoire européen de la sécurité routière, en accord avec les bonnes pratiques recommandées au niveau international.*
- *Identifier et adopter un objectif intermédiaire commun afin de réduire le nombre de décès d'un pourcentage à la fois ambitieux et réalisable dans la période 2011-2020, comme point focal de l'action en matière de sécurité routière. Créer de petits sous-groupes d'experts et de personnalités officielles qui étudieront les propositions existantes et les analyses correspondantes sur des niveaux de décès ciblés spécifiques. Identifier et adopter un objectif intermédiaire commun distinct pour réduire le nombre de blessures graves dans les États Membres, en se basant sur leur propre définition de la blessure grave. Envisager l'adoption d'objectifs quantitatifs visant la réduction du risque de décès dans des groupes d'usagers de la route vulnérables et non protégés (les enfants, par exemple). Veiller à ce que ces visions, objectifs et stratégies soient adoptés comme condition pour les nouveaux États souhaitant adhérer à l'UE.*

À l'échelle nationale et locale :

- *Adopter une vision sur le long terme (Système Sécurisé (Safe System)), des objectifs intermédiaires et les résultats correspondants (p. ex., niveaux d'utilisation de la ceinture de sécurité, réduction des vitesses moyennes) et des résultats institutionnels (p. ex., nombres d'éthylotests, % du parc de voitures avec au moins 4 étoiles) dans de nouvelles stratégies de sécurité routière aux niveaux national et local.*

Rôle et capacité du leadership

La sécurité routière intervient dans un contexte multisectoriel complexe et exige un leadership gouvernemental attentif. Des organismes responsables efficaces peuvent prendre plusieurs formes et exécuter différentes fonctions spécifiques, selon les bonnes pratiques. Lors de la consultation via Internet, des réunions des parties intéressées et d'autres contributions écrites, plusieurs organisations ont manifesté la nécessité d'établir une Agence européenne de la sécurité routière.

À l'échelle communautaire, nationale et locale :

- *Examiner les dispositions adoptées par les organismes publics responsables, leur capacité et leur soutien au développement, au consentement et à la mise en œuvre de visions, d'objectifs et de stratégies nouvelles en termes de sécurité routière.*
- *Envisager la création d'une Agence européenne de la sécurité routière à l'échelle communautaire.*

Intégrations de politiques et coordination de dispositions visant à atteindre les objectifs en matière de sécurité routière

Il a été noté de façon générale lors la consultation publique qu'il existe un potentiel d'amélioration dans la coordination de la sécurité routière entre différents secteurs ayant des responsabilités dans ce domaine, ainsi qu'aux niveaux communautaire, national, régional et local. Le secteur sanitaire devrait s'approprier la sécurité routière comme une responsabilité fondamentale et des scénarios « gagnant-gagnant » de la gestion de la vitesse dans les secteurs des transports, de la santé et de l'environnement, ont été mis en avant.
L'implication des employeurs dans l'introduction de mesures de sécurité routière liées au travail et l'implication des villes dans des programmes de sécurité routière municipale financés par l'UE ont également été mises en exergue. La nécessité du soutien du secteur non gouvernemental a également été soulignée.

À l'échelle communautaire et nationale :

- *Examiner les dispositions de coordination publique transversale à la lumière des meilleures pratiques internationales, pour l'établissement et la mise en œuvre du programme d'action et la poursuite des objectifs. Les secteurs des transports, de la santé, de la justice et la police, de l'emploi, de l'environnement, de l'industrie, des finances et les municipalités constitueront des partenariats clés susceptibles de contribuer à atteindre les résultats.*
- *Impliquer la société civile et commerciale et les parlementaires dans les niveaux consultatifs de la hiérarchie décisionnaire.*

Législation et harmonisation pour atteindre des résultats de sécurité routière

Pour la plupart des parties intéressées, l'UE et la législation nationale continuent de jouer un rôle nécessaire et pertinent dans la définition de normes de sécurité minimales, tout en proposant un haut niveau de protection pour le réseau routier, les véhicules et les usagers. L'harmonisation susceptible de faire progresser la sécurité routière doit être soutenue par la recherche et le développement, un suivi et évaluation systématiques, une analyse du rapport bénéfices/coûts et des projets pilotes à grande échelle dans le cas des nouvelles technologies.

À l'échelle communautaire et nationale :

- *Reconnaître qu'un cadre législatif pour la sécurité routière aux niveaux communautaire et national est toujours essentiel.*
- *Étendre l'harmonisation en matière de sécurité routière là où l'action de l'UE peut ajouter la valeur de la sécurité routière, afin de couvrir la validation des normes/types, l'inspection, l'audit dans les domaines des infrastructures et des véhicules, et de meilleures normes pour les usagers (p. ex., une harmonisation des taux maximaux d'alcoolémie et des limites de vitesse), une mise en application transfrontalière, une politique d'achats publics, etc.).*
- *Réaliser des analyses de rapport bénéfices/coûts pour des projets de mesures législatives et veiller à répondre à la nécessité exprimée par la Commission selon laquelle des actions prioritaires doivent avoir des conséquences positives sur la sécurité routière et la santé publique, tout en améliorant la mobilité, l'énergie, l'environnement et l'économie.*

Financement et allocations budgétaires pour atteindre des résultats de sécurité routière

Il ressort de la consultation par Internet et des ateliers thématiques que les problèmes financiers sont un obstacle majeur à l'atteinte des objectifs par les parties intéressées. Il est instamment demandé à l'UE de créer un Fonds européen pour la sécurité routière destiné à soutenir davantage le programme de jumelage européen afin de mettre en œuvre les meilleures pratiques, en insistant sur le développement des capacités de gestion de la sécurité routière, en tenant compte de critères de sécurité spécifiques dans les projets liés aux transports et aux RTE (réseaux transeuropéens de transport), afin de continuer à financer la recherche et le développement et les projets pilotes.

À l'échelle communautaire et nationale :

- *Examiner les niveaux de ressources requis pour la mise en œuvre de nouveaux programmes.*
- *Créer un Fonds européen pour la sécurité routière destiné au Programme d'action européen pour la sécurité routière.*
- *Proposer des incitations financières et des remises sur assurance pour l'adoption d'équipements de sécurité routière dont l'efficacité peut être démontrée et promouvoir de réelles incitations pour une conduite responsable.*
- *Financer des projets pilotes et de jumelage, afin de développer de bonnes pratiques en matière de capacités de gestion de la sécurité routière, ainsi que pour soutenir les mesures efficaces liées au Programme d'action européen pour la sécurité routière tant au sein de l'UE que dans les pays voisins moins performants dans le domaine de la sécurité.*
- *Définir des critères de sécurité au sein des fonds structurels, dans le cadre des marchés publics et dans les projets liés aux transports et aux RTE.*
- *Soutenir la recherche et les projets pilotes liés à la sécurité routière.*
- *Soutenir les plateformes d'ONG de l'UE, ainsi que le développement des réseaux d'ONG actives dans le domaine de la sécurité routière.*
- *Définir les bénéfices éventuels pouvant découler, pour la sécurité routière, de l'internalisation des coûts liés aux accidents de la route et établir une feuille de route communautaire visant à l'internalisation des coûts externes liés aux accidents de la route.*
- *Promouvoir la réalisation d'études sur le rapport bénéfices/coûts en matière d'allocation des ressources, l'utilisation de la méthode du « consentement à payer » et mettre à jour les données.*

Encouragement de la responsabilité partagée pour atteindre les objectifs

Les résultats de la consultation ont mis l'accent sur le fait que la sécurité routière a besoin d'être appuyée à haut niveau au sein et en dehors des pouvoirs publics, et soutenue par une vision partagée de l'avenir de la sécurité du système du trafic. Ils ont également mis en avant des politiques pour des déplacements internes sûrs, des marchés publics pour les équipements de sécurité et des politiques de communication sur les meilleures pratiques.

À l'échelle communautaire, nationale et locale :

- *Promouvoir une vision partagée à l'échelle de l'UE de la sécurité routière, ainsi que des objectifs communautaires et nationaux aux plus hauts niveaux des pouvoirs publics, des entreprises et de la société civile, dans les politiques de communication, avec la Charte européenne pour la sécurité routière et l'Observatoire européen de la sécurité routière, ainsi que dans les programmes d'action.*
- *Faire preuve de leadership à l'échelle communautaire, nationale et locale, toutes organisations confondues dans les secteurs public et privé, en introduisant des politiques de sécurité dans les déplacements internes.*
- *Modifier la législation européenne afin qu'elle intègre la promotion de véhicules de transport routier sûrs, propres et économes en énergie dans les marchés publics.*
- *Promouvoir les meilleures pratiques en matière de politiques de communication dans le domaine de la sécurité routière, ainsi que les mesures reconnues pour contribuer à la diminution du nombre de décès et de blessés graves et cela, dans le cadre de la Charte européenne de la sécurité routière, de l'Observatoire européen de la sécurité routière et des contextes nationaux et locaux.*

Suivi et évaluation des résultats

Il ressort très clairement de la consultation que des actions doivent être menées à l'échelle communautaire et nationale pour améliorer le suivi et l'évaluation des résultats, et de nombreuses actions ont été recommandées dans ce sens.

À l'échelle communautaire :

- *Suivre les effets des objectifs en matière de sécurité routière, ainsi que des stratégies et des mesures de programmes individuelles (y compris celles inspirées par la Charte européenne de la sécurité routière) et mettre en place une équipe de suivi et 'évaluation de haut niveau chargée de rendre compte des progrès accomplis et de formuler de nouvelles recommandations sur la base de leurs évaluations.*
- *Développer, promouvoir et mettre en place un système d'information de suivi unique, à l'échelle de l'UE, concernant les blessures liées aux accidents de la route, l'exposition à ces derniers et d'autres données. Adopter une définition standardisée, au niveau de l'UE, des blessures « graves » et « mineures », et intégrer ces définitions à différentes bases de données.*
- *Assurer le suivi informatisé du secteur sanitaire en matière de décès et de blessures graves dans le cadre des accidents de la route dans chacun des États Membres, et réaliser des études visant à établir le degré atteint par le déficit de signalement dans le cadre du système CARE.*
- *Stimuler les recherches approfondies sur la base de protocoles établis.*
- *Promouvoir et soutenir l'examen indépendant de la gestion de la sécurité routière partout dans l'UE, ainsi qu'ailleurs.*
- *Organiser des enquêtes publiques de manière régulière concernant la sécurité routière.*

À l'échelle nationale et locale :

- *Mettre en place ou améliorer des bases de données de qualité en matière de blessures liées aux accidents de la route, ainsi que des accords visant au partage des données entre la police et les autorités de la route et sanitaires. Définir le degré du déficit de signalement.*
- *Mener à bien des enquêtes et des études annuelles ayant pour objet la collecte de données clés liées à l'exposition, ainsi que d'informations relatives aux performances en matière de sécurité. Mettre en place des bases de données nationales relatives aux données liées aux résultats intermédiaires (par exemple, la vitesse et l'utilisation de la ceinture de sécurité dans le cadre du trafic régulier) et aux données fournies par les institutions (par exemple, le nombre d'alcotests, les contrôles de vitesse, etc.), en accord avec les meilleures pratiques. Ceci contribuera à informer les stratégies nationales liées à la gestion de la vitesse, à l'augmentation du recours à la ceinture de sécurité, à la réduction de l'alcool au volant et à l'amélioration de la qualité des routes et des véhicules.*
- *Examen par une commission indépendante d'experts des performances en matière de sécurité routière, conformément aux recommandations FIT/OCDE.*

Recherche, développement et transfert de connaissances

De nombreuses personnes interrogées et contributions écrites ont mis en relief le soutien des parties intéressées pour la poursuite des travaux de recherche et le transfert de connaissances, qui ont joué un rôle central, par le passé, dans la réduction du nombre de victimes, et qui constituent un pré requis pour tout développement futur, et un moyen permettant à l'Europe de rester à l'avant-garde en matière de sécurité routière. L'intérêt de l'Observatoire européen de la sécurité routière, le Programme-cadre de recherche et les activités de jumelage liées à la sécurité routière ont été régulièrement mis en exergue. Il a été mentionné à plusieurs reprises lors de la Conférence des parties intéressées et des ateliers thématiques qu'il était nécessaire de créer et transférer des connaissances sur les approches du *Système Sécurisér*.

À l'échelle communautaire :

- *Faire de l'Observatoire européen de la sécurité routière (ERSO) un organisme indépendant et permanent, financé par la l'UE et ayant pour objectif de constituer une source d'informations et de connaissances pour tous, doté des ressources pertinentes, tant sur le plan humain que financier, tout en préservant et renforçant ses buts initiaux, en tant que source établie et précieuse de connaissances et de données pour la prise de décision en matière de sécurité routière.*
- *Mettre en place des directives communautaires contraignantes en matière de meilleures pratiques, adoptées par les États membres et applicables aux activités liées au système de gestion de la sécurité routière.*
- *Promouvoir le développement d'autres ressources/outils liés aux « meilleures pratiques » à mettre en œuvre (par exemple, l'examen de la gestion des capacités dans le domaine de la sécurité routière et les outils servant à la définition des cibles).*
- *Soutenir les projets pilotes de développement de capacités dans les pays les moins performants en termes de sécurité routière.*

À l'échelle nationale et locale :

- *Développer des capacités en interne et en collaboration avec des partenaires extérieurs en matière de recherche en sécurité routière, définir une stratégie nationale de recherche.*
- *Réunir et transférer des connaissances sur les approches du Système Sécurisé.*
- *Développer et promouvoir des directives liées aux meilleures pratiques, notamment dans les domaines de l'application et de l'ingénierie.*
- *Entreprendre des activités de jumelage entre experts, ainsi que de formation professionnelle au niveau des décisionnaires et des praticiens dans le domaine du transfert des connaissances liées à des activités efficaces et novatrices.*

Vers un système sécurisé

Les parties intéressées ont reconnu que les blessures graves et mortelles liées aux accidents de la route peuvent être évitées et que les connaissances actuelles permettent d'améliorer la sécurité des réseaux routiers, des parcs de véhicules et des systèmes d'urgences médicales, mais aussi des conducteurs, des passagers, des motocyclistes, des cyclistes et des piétons.

Planification, conception et exploitation des infrastructures routières

Les résultats de la consultation indiquent que l'ingénierie en sécurité routière et la gestion de réseaux doivent être encouragées et soutenues de façon active à l'échelle communautaire, nationale et locale. Des mesures d'ingénierie en matière de sécurité constituent un investissement solide et leur rapport bénéfices/coûts est en général plus élevé que celui d'autres mesures d'ingénierie routière. Des actions doivent être menées pour améliorer la sécurité routière sur des voies autres que les routes urbaines ou les autoroutes, car elles concentrent près de 60 % des décès, près de 50 % des décès de cyclistes et environ 30 % des décès de piétons. La gestion de la sécurité en milieu urbain et l'abaissement des vitesses en ville sont également des points d'intervention importants, car il faut garder à l'esprit la plus grande vulnérabilité des piétons, des enfants, des personnes âgées et des conducteurs de véhicules à deux roues.

À l'échelle communautaire :

- *Appliquer la Directive sur la sécurité des infrastructures qui permettra d'évaluer pour l'ensemble des routes les impacts en matière de sécurité, réaliser un audit de la sécurité, une inspection de la sécurité et gérer la sécurité des réseaux sur les routes des RTE.*
- *Développer des directives/meilleures pratiques contraignantes couvrant toute une série de questions d'ingénierie en matière de sécurité, mettre en place un processus d'accord concernant des directives au niveau de l'UE, (par exemple, sur l'aménagement du territoire, sur la gestion de la vitesse, ainsi que sur les routes protectrices en cas d'accident et les approches novatrices qui contribuent à l'établissement du Système Sécurisé.*
- *Étendre le concept du Couloir transfrontalier vert à celui d'un Couloir transfrontalier vert et sécurisé pour tenir compte de critères de sécurité routière.*
- *Définir des normes minimales basées sur les niveaux EuroRAP 4 étoiles pour le réseau RTE.*
- *Définir des critères d'ingénierie en matière de sécurité routière, en vue de les intégrer à des projets communautaires d'investissement.*
- *Jouer un rôle dans l'harmonisation des normes techniques (résistance aux dérapages, barrières, signalisations, nouvelles technologies à l'efficacité reconnue, etc.), afin de garantir l'adoption de normes d'un niveau d'exigence minimal.*
- *Promouvoir, uniformiser et contribuer à la généralisation du système ISA (« Intelligent Speed Adaptation », ou limitation intelligente de la vitesse).*
- *Promouvoir l'information des usagers (EuroRAP/iRAP) sur les risques de certaines routes notamment dans les derniers pays ayant rejoint l'UE et dans les pays voisins.*
- *Promouvoir l'amélioration des données liées aux blessures causées par les accidents de la route et aux sondages.*
- *Financer des projets pilotes et des recherches en matière d'évaluation concernant des techniques novatrices dans le domaine de la sécurité routière, de nouvelles technologies prometteuses et les efforts de coopération entre les constructeurs automobiles et d'infrastructures, afin de garantir la sécurité des déplacements sur le réseau.*

À l'échelle nationale, régionale et locale :

- *Lors de l'examen des classifications fonctionnelles et des hiérarchies routières, s'assurer de mettre en adéquation la fonction, la limitation de la vitesse, la conception et la planification, en tenant mieux compte des usagers de véhicules motorisés et non motorisés.*
- *Adopter des approches de Système Sécurisér (« Safe System ») en ce qui concerne l'ingénierie en matière de sécurité routière, examiner de manière périodique les normes, les directives et les procédures nationales, à la lumière des bonnes pratiques internationales.*
- *Instaurer des zones de vitesse limitée à 30 km/h dans les zones résidentielles, afin d'améliorer la sécurité des usagers vulnérables.*
- *Soutenir EuroRAP/iRAP et y adhérer, et contribuer au mapping des risques mené par EuroRAP/iRAP, ainsi qu'au classement des mesures de protection, afin de contribuer à évaluer la qualité des routes en termes de sécurité.*
- *Appliquer des procédures d'études d'impact, d'audit et d'inspection aux projets de nouvelles routes, ainsi qu'à ceux visant à améliorer celles déjà existantes.*

Sécurité des véhicules

Il ressort de la consultation que les parties intéressées sont bien conscientes qu'une amélioration de la sécurité des véhicules et les nouvelles technologies pourront contribuer dans une large mesure à réduire le nombre de victimes. D'après les conclusions de l'atelier sur la sécurité des véhicules, il est nécessaire de lier la sécurité préventive, active et passive, de créer des systèmes coopératifs pour les occupants des véhicules motorisés et les usagers de la route vulnérables. La mise à disposition de véhicules dotés de mécanismes simplifiant la conduite, et dont le design et les équipements ont été conçus pour protéger leurs passagers aussi efficacement que possible, à l'intérieur comme à l'extérieur du véhicule constituent les principales questions liées à la réduction du nombre des victimes. La consultation a également mis en exergue

l'importance de l'action de l'UE en matière de sécurité des véhicules, notamment, et a recommandé un éventail d'actions visant à promouvoir l'utilisation d'un classement de sécurité des véhicules et à accélérer l'approvisionnement d'équipements de sécurité éprouvés par le biais de classements de sécurité et de marchés publics. Elle a également reconnu la nécessité d'une plus grande harmonisation des normes de véhicules et de poursuivre des travaux de recherche et développement.

À l'échelle communautaire :

- *Modifier la législation européenne actuelle afin qu'elle intègre la promotion de véhicules de transport routier sûrs, propres et économes en énergie dans les marchés publics.*
- *Promouvoir les technologies efficaces, tels que le système ISA, les éthylotests anti démarrage et les rappels concernant les ceintures de sécurité, afin d'encourager la prise de conscience de la part des consommateurs.*
- *Fournir des informations comparatives aux usagers sur la sécurité des véhicules pour encourager des changements rapides dans la conception des véhicules avant 2020.*
- *Mettre en place une feuille de route, en vue de la mise en œuvre de systèmes « Intelligent Speed Adaptation » et de systèmes d'enregistrement de données d'événements.*
- *Étendre la législation actuelle sur les rappels concernant les ceintures de sécurité pour inclure des équipements sur les sièges arrière et les sièges avant.*
- *Supprimer l'exemption d'utilisation de ceintures de sécurité par les chauffeurs de taxi.*
- *Développer et proposer des méthodes uniformes de test de compatibilité entre les véhicules automobiles, ainsi qu'entre les camions et les véhicules, de même que des méthodes améliorées concernant les impacts frontaux, latéraux et à l'arrière.*
- *Légiférer pour une homologation complète des types de véhicules pour les deux roues motorisés, comme des dispositifs anti-faussage efficaces, des plaques d'immatriculation à l'avant pour faciliter l'application des règles de vitesse, un système ABS obligatoire pour tous les véhicules motorisés à deux roues.*
- *Se concentrer davantage sur les besoins des usagers vulnérables en matière de nouvelles technologies de sécurité automobile, incluant les dispositifs de détection de piétons et anticollision, et la conception et les équipements des motocyclettes.*
- *Légiférer sur la fabrication et l'utilisation de camionnettes et de petits camions (< 3,5 tonnes) comme pour les véhicules poids-lourds.*
- *Exiger l'installation d'éthylotests antidémarrage dans les poids lourds destinés au transport de marchandises, ainsi que dans les véhicules de transport public, et promouvoir leur utilisation.*
- *Étudier l'intérêt en matière de sécurité routière d'un système de conformité permanente et/ou d'un système capable de fournir des informations techniques pour chaque véhicule.*
- *Étudier l'intérêt en matière de sécurité routière de légiférer en faveur d'un contrôle technique pour les véhicules motorisés à deux roues.*
- *Déployer un groupe de travail de l'UE pour orienter le travail de la Commission sur de nouvelles technologies de sécurité des véhicules afin d'identifier les systèmes susceptibles de réduire le plus efficacement le nombre de blessés.*
- *Développer des procédures d'évaluation de la sécurité pour les systèmes intelligents, des évaluations des interfaces homme/machine (HMI), ainsi que l'identification de systèmes pouvant entraîner un nombre de victimes plus élevé.*
- *Développer et mettre en œuvre un programme d'évaluation systématique de la législation communautaire et des technologies des véhicules, y compris des analyses du rapport coûts/bénéfices.*
- *Effectuer des recherches sur la sécurité des véhicules électriques.*

À l'échelle nationale et locale :

- *S'impliquer pleinement dans le travail de développement législatif au niveau international.*
- *Mener des recherches sur le plan national, effectuer des suivis concernant les mesures adoptées en matière de sécurité routière.*
- *Soutenir l'European New Car Assessment Programme (programme européen d'évaluation de nouvelles voitures) et y adhérer.*
- *Encourager les incitations financières pour l'utilisation d'équipements de protection.*
- *Encourager l'industrie automobile nationale afin d'accélérer les mesures clés en matière de sécurité, recommandées par EuroNCAP par le biais de politiques de déplacements nationales et de marchés publics.*

Usagers de la route – obtention de permis, examen, formation, information et application des réglementations

La principale stratégie concernant les usagers de la route recommandée lors de la consultation est leur éducation et information visant l'adoption des principaux comportements de sécurité, notamment l''évaluation de leur capacité physique avant d'emprunter le réseau routier et le rejet de toute action pouvant provoquer des blessures graves ou mortelles .Les caractéristiques techniques des véhicules et de l'ingénierie des routes complémenteront cette stratégie éducative pour améliorer la sécurité. L'application systématique de la loi et par la police doit également viser à dissuader les usagers de la route d'adopter des comportements dangereux.

Plusieurs recommandations ont été émises lors de la consultation en ce qui concerne l'harmonisation des permis de conduire, des examens et de la formation à l'échelle communautaire. La plus importante d'entre elles est l'obtention du permis graduel pour les nouveaux conducteurs de véhicules à 4 ou 2 roues, afin de réduire leur exposition aux risques, et donc le nombre de victimes de la route. Parmi les contre-mesures les plus importantes relatives à la mise en application qui ont été avancées, figurent la publicité et l'application par la police de façon très claire de règles de sécurité importantes, l'interdiction de la conduite en état d'ébriété, l'application des limites de vitesse, le port de la ceinture de sécurité et du casque et une application transfrontalière. Il a été reconnu que le véhicule jouait un rôle important, ainsi que les efforts de déployés par l'UE en matière de sécurité (rappels de port de ceinture, système ISA, éthylotests antidémarrage, etc.).

À l'échelle communautaire :

- *Harmoniser davantage les permis de conduire, ainsi que les examens et la formation correspondants et cela concernant l'ensemble des conducteurs de véhicules à moteur, améliorer la qualité de l'ensemble, sur la base de l'étude des meilleures pratiques et les preuves.*
- *Harmoniser les permis graduels pour les conducteurs et les motocyclistes débutants, en y incluant la conduite accompagnée, des périodes de preuve (conduite seul la nuit, alcoolémie nulle, système de perte de points sur permis plus sévère).*
- *Harmoniser l'application transfrontalière.*
- *Revoir l'âge d'accès aux différents véhicules à moteur, sur la base des meilleures pratiques internationales en matière de sécurité.*
- *Harmoniser davantage les qualifications des examinateurs dans le domaine des véhicules à moteur, ainsi que celles des inspecteurs des véhicules.*
- *Développer des directives/protocoles sur les meilleures pratiques visant à soutenir les principaux aspects de la mise en application.*

À l'échelle nationale et locale :

- *Organiser des campagnes de marketing social, associées à la mise en application et à la publicité, afin d'encourager le respect des règles de base en matière de sécurité.*
- *Promouvoir la responsabilité du propriétaire du véhicule en matière d'application des sanctions constatées par le biais de systèmes automatisés.*
- *Instaurer des programmes de réhabilitation des contrevenants.*

Prise en charge post-accident

Bien que la consultation par Internet n'ait pas cherché expressément des avis sur des problèmes et des priorités, des études montrent que la qualité du système d'urgences médicales peut avoir un impact considérable sur la survie des victimes d'accidents de la route et la prévention des handicaps. Pour les blessures importantes, des experts cliniques définissent la prise en charge post-accident dans les pays de l'UE comme un enchaînement d'aides démarrant par les actions menées par les victimes elles-mêmes ou les passants présents sur le lieu de l'accident, les équipes de secourisme, l'accès au système de soins médicaux avant l'hospitalisation et les soins traumatiques, et l'aide apportée aux accidentés de la route souffrant de séquelles longues en vue de leur réintégration dans leur milieu familial et professionnel. L'importance de la prise en charge post-accident a été soulignée lors des ateliers thématiques et les contributions écrites.

À l'échelle communautaire, nationale et locale :

- *Reconnaître que la qualité du système d'urgences médicales est fondamentale pour atteindre un système de trafic sécurisé.*
- *Examiner la contribution potentielle d'une meilleure réponse de la part des urgences médicales par rapport aux objectifs et aux stratégies.*
- *Mesurer les temps de réponse des urgences médicales entre le lieu de l'accident et l'arrivée au centre de soins et cela à la lumière des meilleures pratiques internationales.*
- *Promouvoir les programmes de premiers soins et la formation professionnelle des conducteurs professionnels et commerciaux.*
- *Promouvoir le système d'appel d'urgence paneuropéen « eCall ».*

1 Background and introduction

The present report (Final Report) has been prepared by COWI A/S, Denmark in association with Jeanne Breen Consulting and Pete Thomas, University of Loughborough under the existing COWI Service Framework Contract with DG TREN covering Technical Assistance Activities (Ref. TREN/R1/350-2008 Lot 3) and in response to the Terms of Reference included under Work Order TREN/R1/350-2008 Lot 3.

The Road Safety Unit (Unit E3) in Directorate General for Transport and Energy (DG TREN) requested services for technical assistance on activities in support of the preparation of the European Road Safety Action Programme 2011-2020. The contract was awarded to the COWI Consortium in a letter dated 9 June 2009.

Readers should note that the report presents the views of the Consultant, which may not necessarily coincide with those of the Commission.

1.1 Background

Involvement in a road traffic crash is the leading cause of death and hospital admission for EU citizens under 45 years. Against the background of 39,200 road traffic deaths in 2008 (EU27) and an annual socio-economic cost estimated at €180 billion (based on willingness to pay principle), road safety continues to be a priority area for action of the European Union[1, 2].

Road safety takes place in a complex multi-sectoral context. Responsibilities are shared across and between levels of government at EU, national, regional and local levels and with the business sector and civil society. The continued expansion of the EU with the mixed levels of road safety performance of its members has produced new road safety challenges for the road safety partnership.

[1] Annual Statistical Report Based on data from CARE/EC, 2008, SafetyNet, ERSO, 2008
[2] ETSC (2008) 2nd Road Safety PIN Report. Brussels, Belgium

The current European Road Safety Action Programme[3], adopted for the period 2003-2010, aims at an ambitious target of halving the number of road traffic deaths in the EU by 2010 - a target which was adopted originally by the Commission in 2001[4] and endorsed by the Parliament and Council. After the enlargement in 2004, the target continued to be:

By 2010 there should be no more than 27,000 fatalities a year in the EU.

A follow-up was made in the Mid-Term Review of the White Paper in 2006: *Keep Europe moving - Sustainable mobility for our continent* and in the Communication from the Commission from 2006: *Mid-term review of the European Road Safety Action Programme*. It stated that although road safety was improving in the EU, there was still "a lot of room for further improvement".

The target and actions in the Road Safety Action Programme have helped to push road safety further up the agenda in many Member States and, following a wide range of initiatives and development of partnerships, there have been many achievements in road casualty reduction. However, as confirmed by the Mid-Term Review[5], recent CARE data[1] and a report from the OECD[6], the results to date are less than the ambitious results desired and the level of progress continues to be uneven.

In spite of some progress, the objective of halving the number of road fatalities by 2010 will not be achieved; in 2008 as many as 39,200 (provisional number) citizens of EU countries were still killed in traffic.

With the aim of galvanizing concerted and effective action for the next decade, the European Commission has carried out a consultation and data collection exercise to prepare a new European Road Safety Action Programme covering the period 2011-2020. The COWI consortium was selected to provide technical assistance to the Commission with a range of tasks towards this end.

1.2 Introduction

Stakeholder consultation towards the development of the next EU road safety action programme 2011-2020 was carried out by the European Commission between July and December 2009. This consultation comprised a series of six

[3] European road safety action programme – Halving the number of road accident victims in the European Union by 2010: a shared responsibility [COM(2003) 311 final, 2 June 2003].

[4] European transport policy for 2010: time to decide [COM(2001) 370 final, 12 September 2001]

[5] European road safety action programme mid-term review, [COM(2006) 74 final, 22 February 2006]

[6] OECD (2008) Towards Zero: Ambitious road safety targets and the safe system approach, OECD, Paris, 2008

thematic workshops and an internet consultation, and culminated in a stakeholder conference on 2nd December, 2009.

Based on the results of the consultation, this report presents an overview of key problems and identifies priority actions which could be implemented at EU, national, regional, and local levels. The European Commission requires the priority recommendations for action to achieve a positive impact on road safety and public health while also improving mobility, energy, the environment and the economy.

1.3 Structure of the report

The report is structured in three main Sections and Appendices. After this introductory Section, Section 2 provides an overview of data and trends. This includes the general situation and trends in road traffic crashes (EU), presentation of fatalities according to road types and road users. Road safety performance in relation to organisation, safety strategies and measures is presented.

In Section 3 results of the consultations are presented including a report of the consultation process. This includes results of thematic workshops, Internet consultation and the results of the stakeholder conference.

Problem analysis and preliminary proposals for solutions are presented in Section 4 which includes recommendations for possible actions that could be implemented at EU and national levels.

Five supporting Appendices with further consultation results and other supporting information are also provided.

2 Overview of data and trends

Based on available information an overview of data and trends is presented in this section. The following elements are included:

- Numbers of road fatalities according to different categories of road users in the different countries and different types of roads (motorways, rural roads, urban areas)
- A brief overview of the road safety performance of individual Member States
- Actions on road safety communication and education, enforcement and engineering.

In addition, relevant demographic, social, economic, financial, technological, logistical, medical and other relevant developments or trends, which may have an impact on road safety, are outlined.

2.1 General situation and trends in road crashes (EU)

Final outcomes

In the EU White Paper of 2001 the objective of halving the number of road deaths by 2010 was formulated and, in 2003, the Commission launched a European action programme for road safety.[7]

Figure 1 illustrates the overall trend in EU fatalities from 2001 to 2008, compared to the 2010 objective of halving the number of fatalities. As shown in the figure, around 39,000 fatalities (preliminary data) occurred in the EU in 2008. This is around 27 % less than in 2001, where the number was 54,000. In spite of the reduction it is clear that the ambitious objective of halving the number of fatalities will not be achieved.

More detailed data on fatalities, injuries and crashes by country and year are provided in Appendix 1.1.

[7] Commission of the European Communities (2008b): Commission Staff Working Paper accompanying the above. Technical annex to the strategy for the internalisation of external costs. Box 2. COM (2008) 435; SEC (2008) 2208; SEC (2008) 2209. Brussels, SEC (2008) 2207.

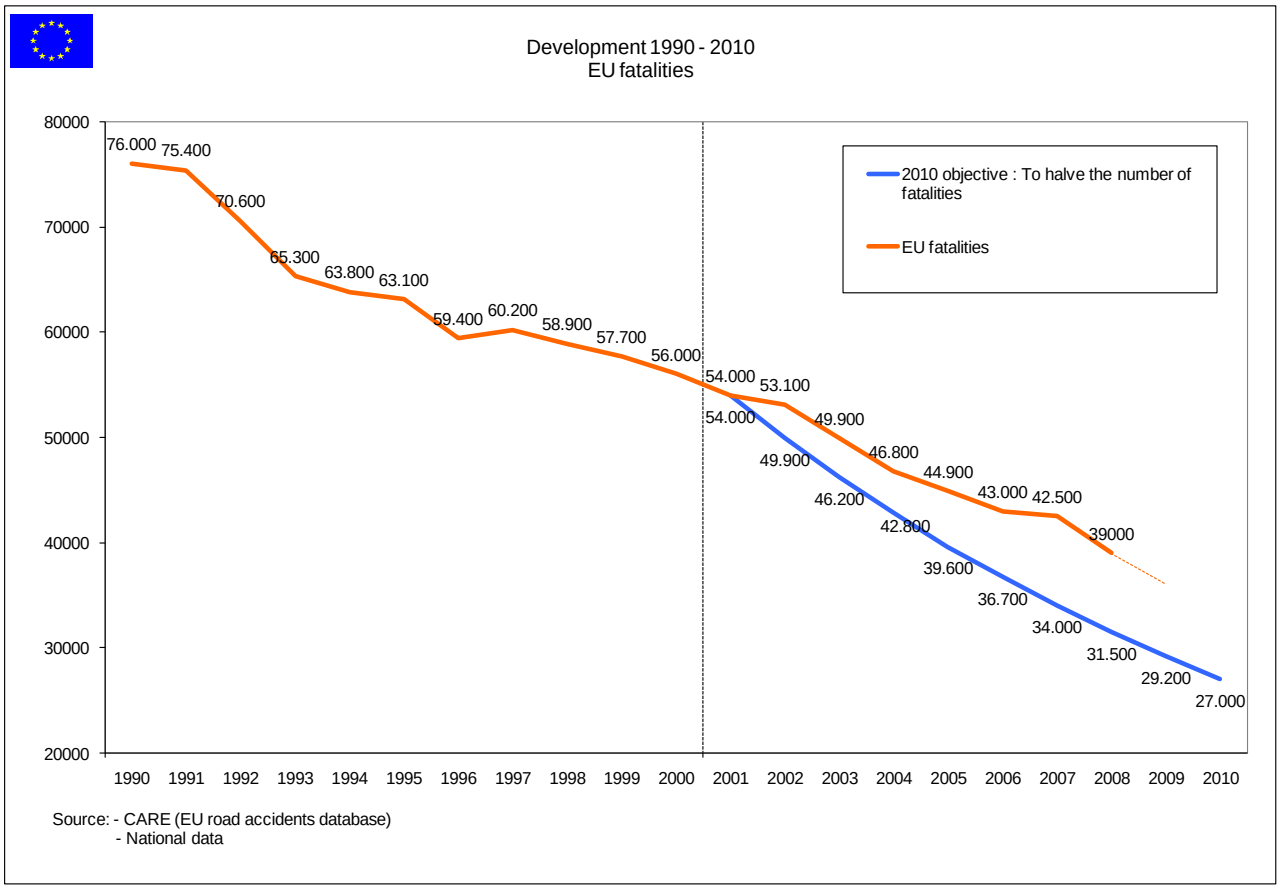

Figure 1 *Development and trend in EU road traffic crashes 1990-2010.*
(Source: From European Commission (Care & national data) - 2008 preliminary data)

The development in fatalities by population, and injuries and crashes is illustrated in Figure 2. While the number of fatalities has decreased, both the number of injuries and crashes increased during the period 1993 to 2000, although the numbers have decreased since. In 2008, more than 1.6 million road users were injured in EU27 compared to almost 2 million in 2000. However, the downward trend in the number of fatalities is more pronounced than the trend for injuries and crashes.

Thus road safety is a very serious problem in EU with some 39,000 deaths and around 1.6 million are injured in road crashes, a significant proportion of whom may suffer disability for the rest of their lives.

The large number of road traffic deaths and injuries represents a substantial burden for the health sector in Member States as described in the alarming World Report on Road Traffic Injury Prevention[8]. This states that in many low-income and middle-income countries (such as in some new Member States), the burden of traffic-related injuries may represent between 30% and 86% of all trauma admissions.

[8] World Report on Road Traffic Injury Prevention, WHO and World Bank, 2004

Traffic crashes now also result in considerable socio-economic losses, estimated at approximately 2% of GDP every year, making this a development problem as well as a human tragedy. This also supports the findings of the stakeholder consultations (see Section 3) which concluded that road safety should be integrated into health and social policies.

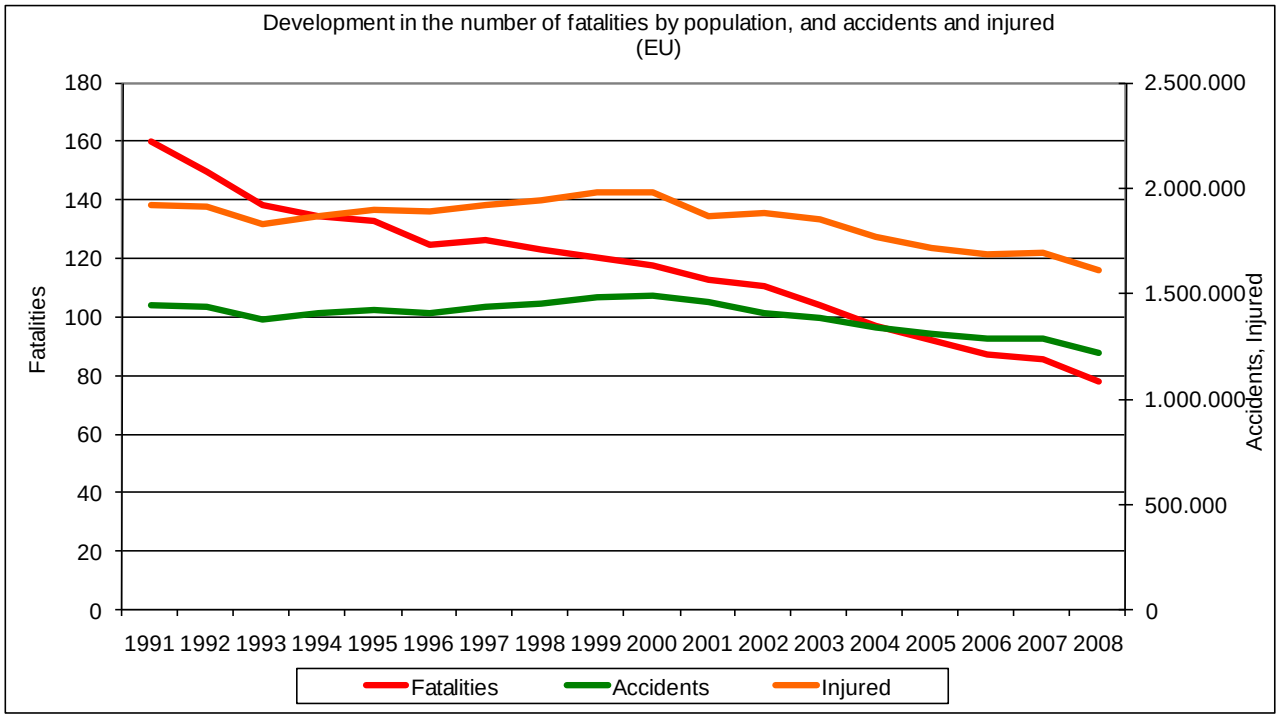

Figure 2 *Development in the number of fatalities, accidents and injured by population (EU) (Source: CARE (EU road accidents database) or national publications)*

In EU27 the share of seriously injured users accounts for 18% and slightly injured users account for 82%. There are large differences among the countries as illustrated in Figure 3 and in Appendix 1.3. Countries such as Netherlands, Cyprus, France, Denmark and Bulgaria have registered serious injury comprising 30% of total injuries, while countries such as Slovenia, Portugal and Greece have registered less than a 10% serious injury share.

It has been estimated that for every fatality, 14 are seriously injured and 40 have minor injuries[9]. In EU27 the figures registered indicate that for every death there are 8 serious injuries and 35 minor injuries. There are large differences between Member States in the number of injuries by fatality. Some Member States such as Greece, Latvia, Lithuania, Poland and Romania have registered less than 3 serious injuries for each registered fatality while e.g. Germany, Malta, Netherlands and Austria have registered more than 12. This picture is similar for slight injuries.

[9] Road Safety as a right and responsibility for all - A blueprint for the EU's 4th Road Safety Action Programme 2010-2020, ERSO, 2009

These differences could indicate that a definition of injuries is needed as also highlighted by stakeholders during the consultation process (see Section 3). This includes when they should be registered, what should be registered and how a serious and slight injured should be defined.

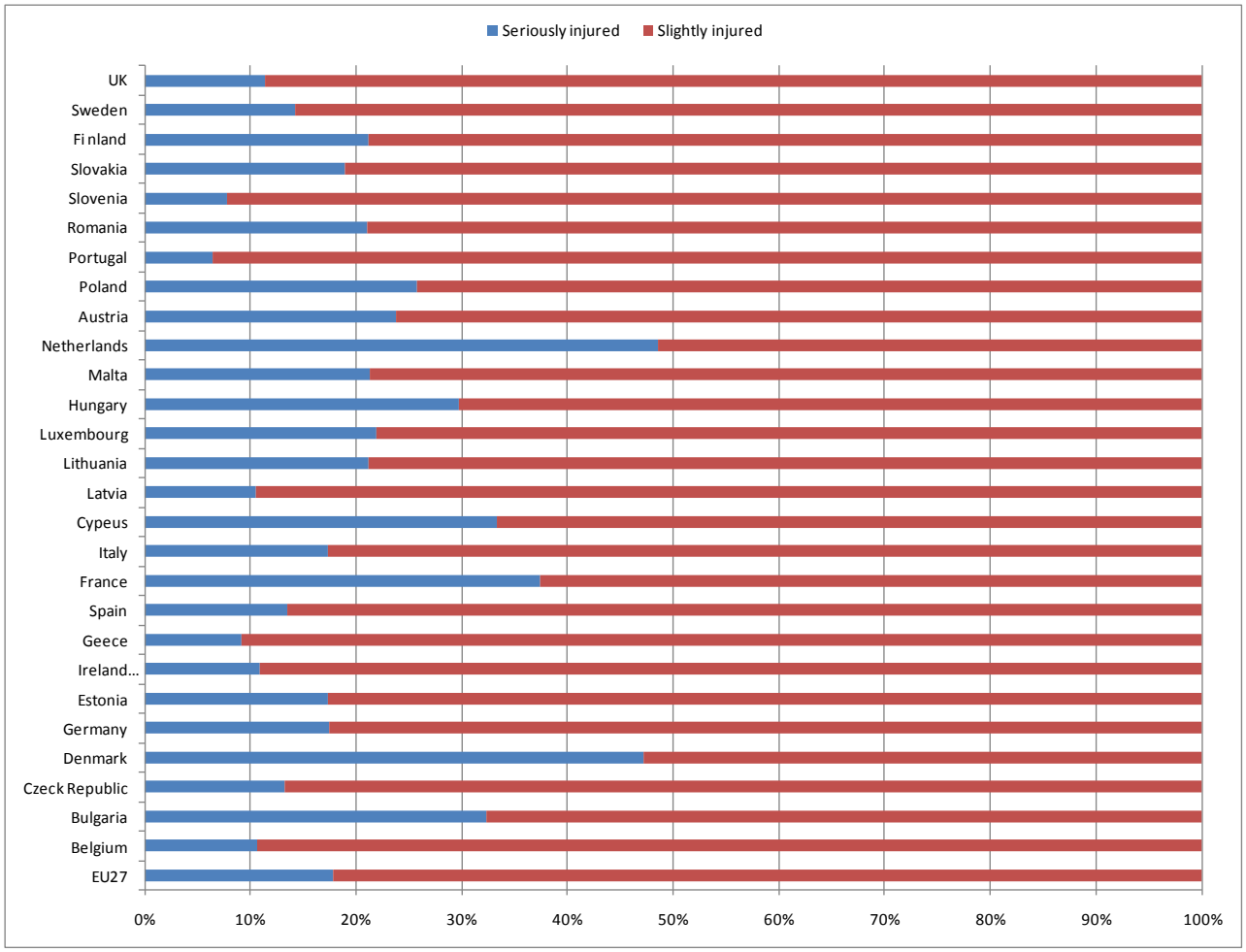

Figure 3 *Share of serious and slight injuries in EU and by country (Source: CARE (EU road accidents database))*

Differences between Member States are illustrated in Figure 4. As can be seen from the figure, fatality rates vary a great deal geographically, with e.g. Latvia and Lithuania displaying high rates, and The Netherlands and Sweden relatively low rates. In general there is a tendency for fatality rates to be lower in the North than in the South and lower in the West than in the East.

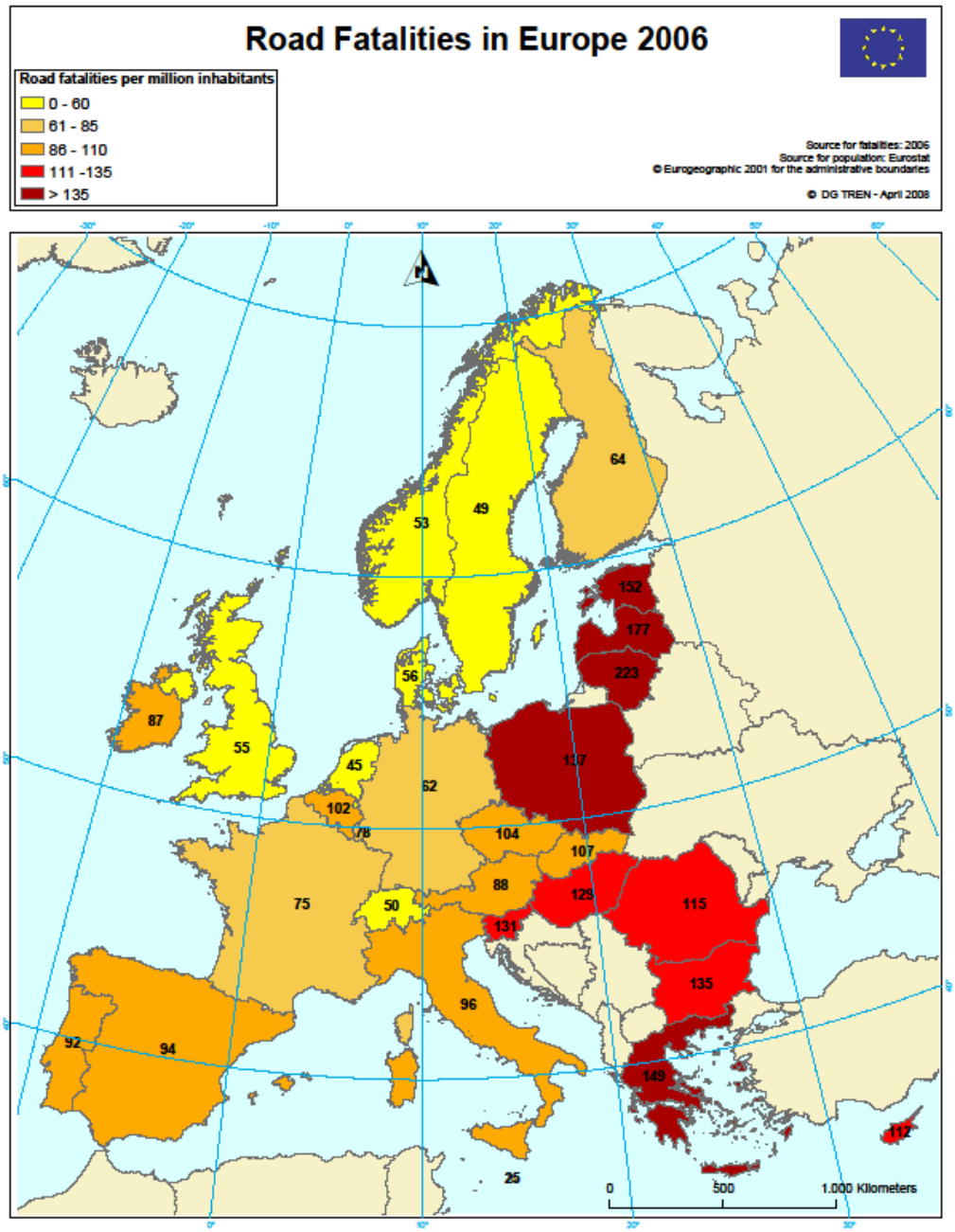

Figure 4 Fatalities per million inhabitants. 2006. (Source: European Road Safety Observatory (2009))

The development over time in Member States also differs, which is illustrated in Figure 5 and Figure 6 below. Highest reductions in fatalities have been seen in Luxembourg, France, Latvia, Spain and Portugal, whereas Romania and Bulgaria, with already high rates, displaying an increase. Clearly, there are large differences in the challenges facing different Member States.

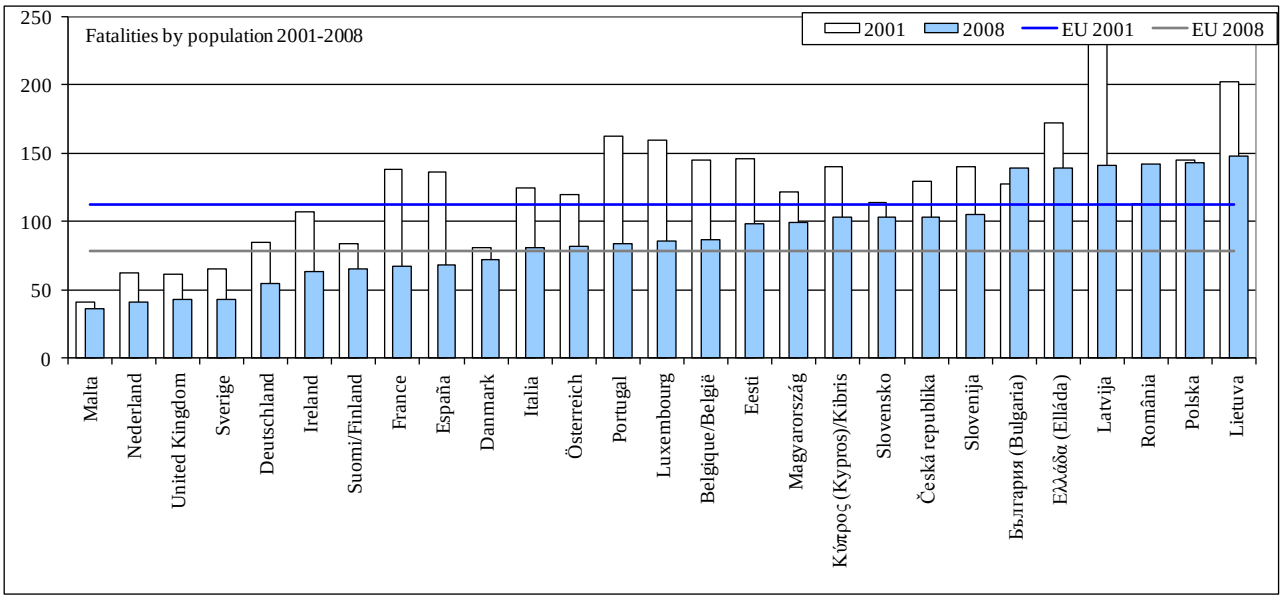

Figure 5 *Change in fatalities by population, 2001 versus 2008.*
(Source: From European Commission (Care & national data) - 2008 preliminary data)

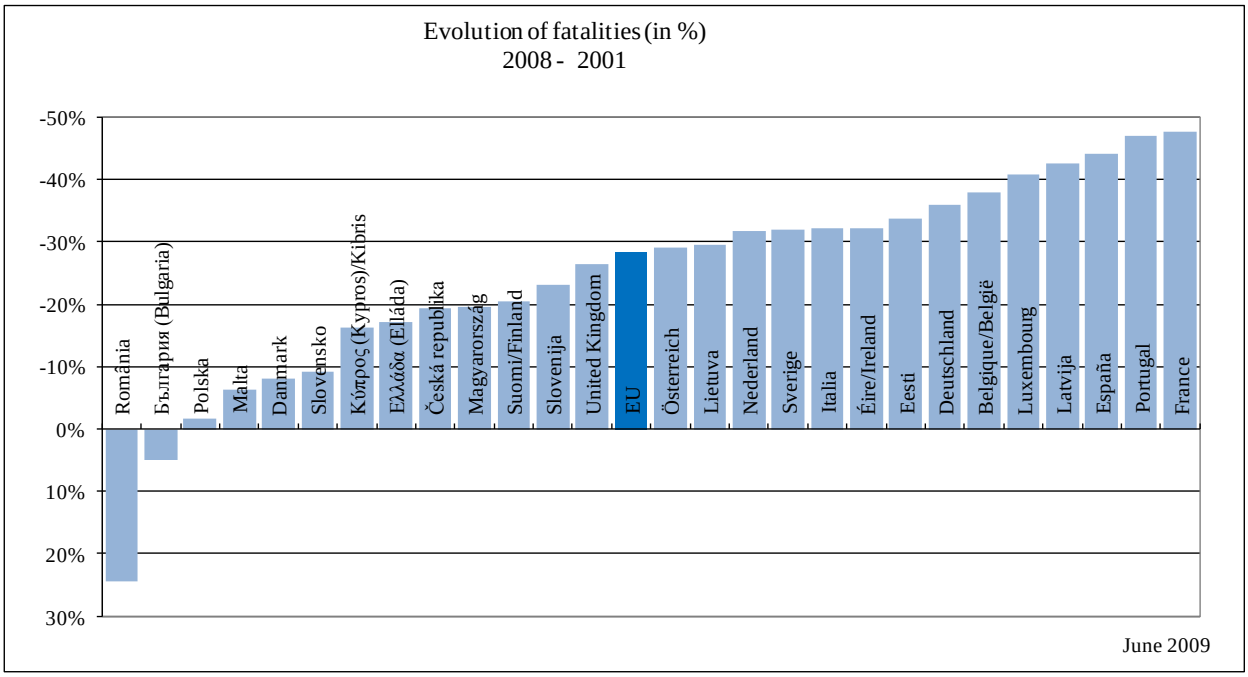

Figure 6 *Evolution of fatalities, 2001 versus 2008. (Source: From European Commission (Care & national data) - 2008 preliminary data)*

In Appendix 1.2 fatality rates by veh-km and by number of vehicles are compared for different countries including some EU countries[10]. The picture is the same when comparing by veh-km and vehicle, and by population. Countries such as Sweden, Netherlands and UK are the best performing with some of the

[10] IRTAD Annual Report 2009, International Traffic Safety Data and Analysis Group, www.irtad.net

new Member States (e.g. Slovenia, Poland, Hungary) at the other end of the performance scale.

ETSC[11] has in Figure 7 grouped EU and other countries according to fatality rates horizontally against the estimated average annual percentage change in road deaths over the period 2001-2008. The EU averages of the two indicators are used to divide the diagram into four quadrants:

- high fatality rate / low reduction (HL) - Greece, Poland, Bulgaria, Hungary, Cyprus, Romania, Czech Republic, Slovak Republic, Slovenia, Estonia, Lithuania
- high fatality rate / high reduction (HH) - Belgium, Portugal, Italy, Latvia
- low fatality rate / low reduction (LL) - Ireland, Denmark, Finland, Sweden, Malta, United Kingdom, Norway
- low fatality rate /high reduction (LH) - Austria, Germany, Netherlands, Spain, Luxembourg, France, Switzerland.

Clearly, reducing the gap in safety performance across the European Union by supporting activity in the less well performing countries indicates a priority area for action.

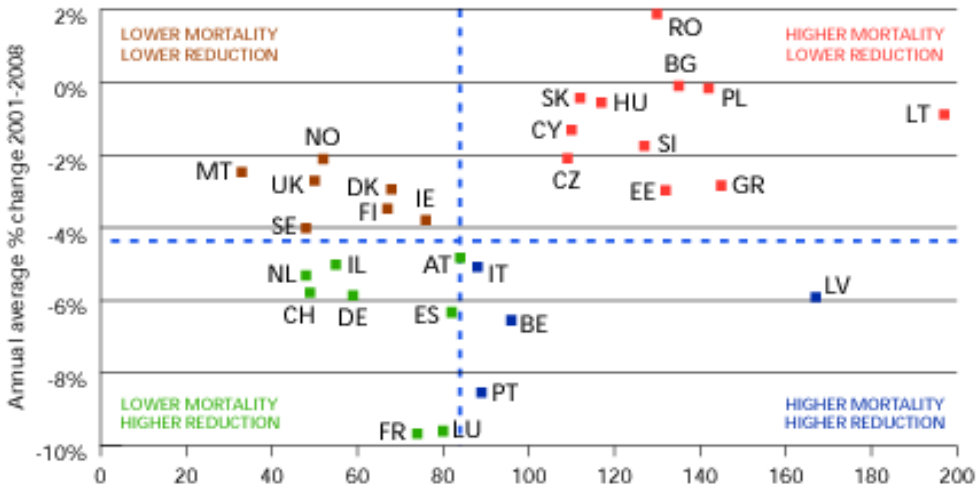

Figure 7 *Road mortality (average of 2006, 2007 and 2008) plotted against the percentage change in road deaths (2001-2008).*
(Source: From 2010 on the Horizon 3rd Road Safety PIN Report, ETSC, June 2009)

Forecast in fatality reduction

The development on the number of fatalities the next 10 years naturally depends on a lot of factors, including growth in number of vehicles, introduction of new measures, demographic change, economic activity, etc. However, assuming that the present downward trend in fatality risk continues and taking into account growth in traffic volume of 20% from 2007-2020, TRL[12] (UK)

[11] From 2010 on the Horizon 3rd Road Safety PIN Report, ETSC, June 2009

forecasts total fatalities of 22,000[12] in 2020. This assumes that the current level of road safety measures will be carried out and that traffic will continue to grow. This would be equivalent to a reduction in the number of fatalities of approximately 35%. Assuming that the fatality-reducing effect of new road safety measures is around 10% then the number of fatalities is predicted to be approximately 20,000 in 2020 or a reduction of 43%.

2.2 Fatalities according to road types

Generally the largest proportion of road traffic crashes occurs in urban areas and the most serious and fatal injuries (taking all user groups as a whole) are found on the rural network as illustrated in Appendix 1.4.

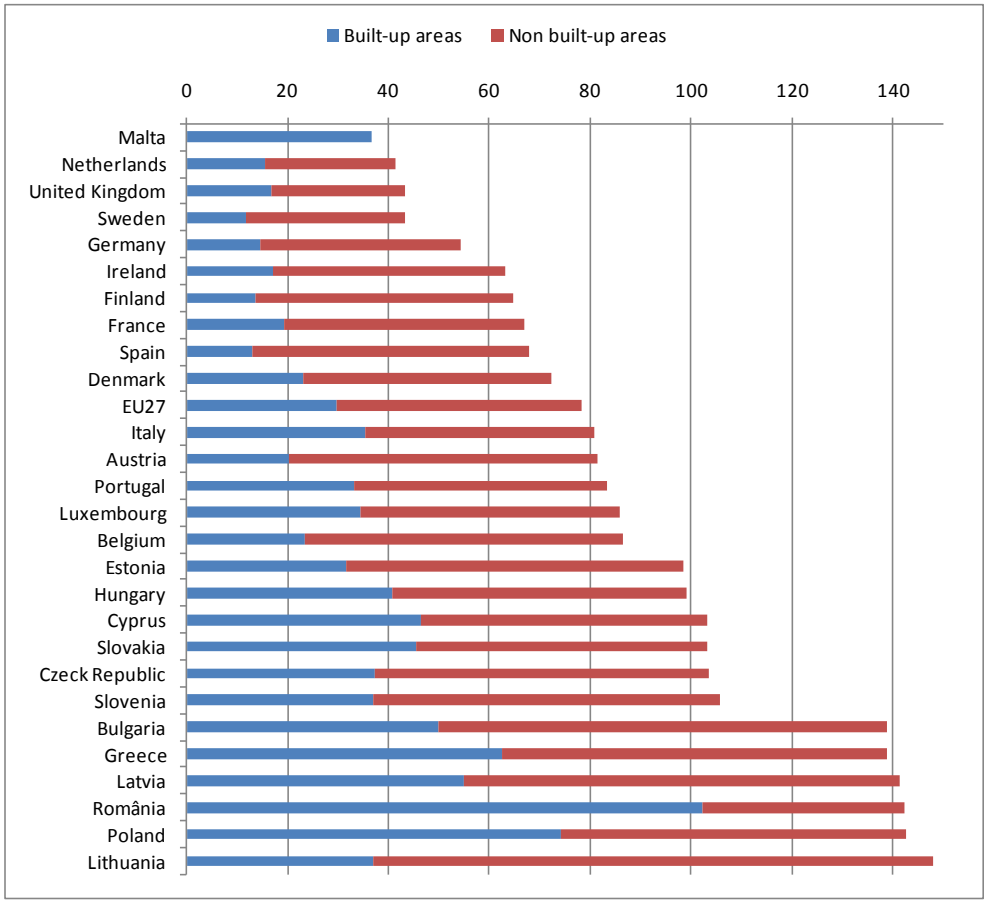

Figure 8 *Fatalities by million population in 2008 by built-up and non built-up areas. (Source: From European Commission (Care & national data))*

The distribution of fatalities in EU and by Member State is presented in Figure 8 by million of population in 2008 and by built-up and non built-up areas. Table 1 shows the distribution between casualties and fatalities on urban and non-

[12] Broughton, Jeremy, TRL, New target for reducing the number of deaths in road accidents (ETSC, unpublished, 2009).

urban roads in EU27. Almost 60% of fatalities in EU27 occur on non-urban, non-motorways while almost 70% of injury crashes occur in urban areas.

Table 1 Distribution of casualties and fatalities on urban and non-urban roads (EU27)

EU27 aggregates	urban	non urban	
		motorways	non motorways ("rural roads")
Injury crashes	69%	5%	26%
Fatal crashes	38%	6%	56%
Fatalities	36%	6%	58%

Source: From European Commission (Care & national data)

Out of 19 EU member states, in countries such as Estonia, Spain and Ireland the share of fatalities were even more than 70% in 2006[13] on non-urban, non-motorways.

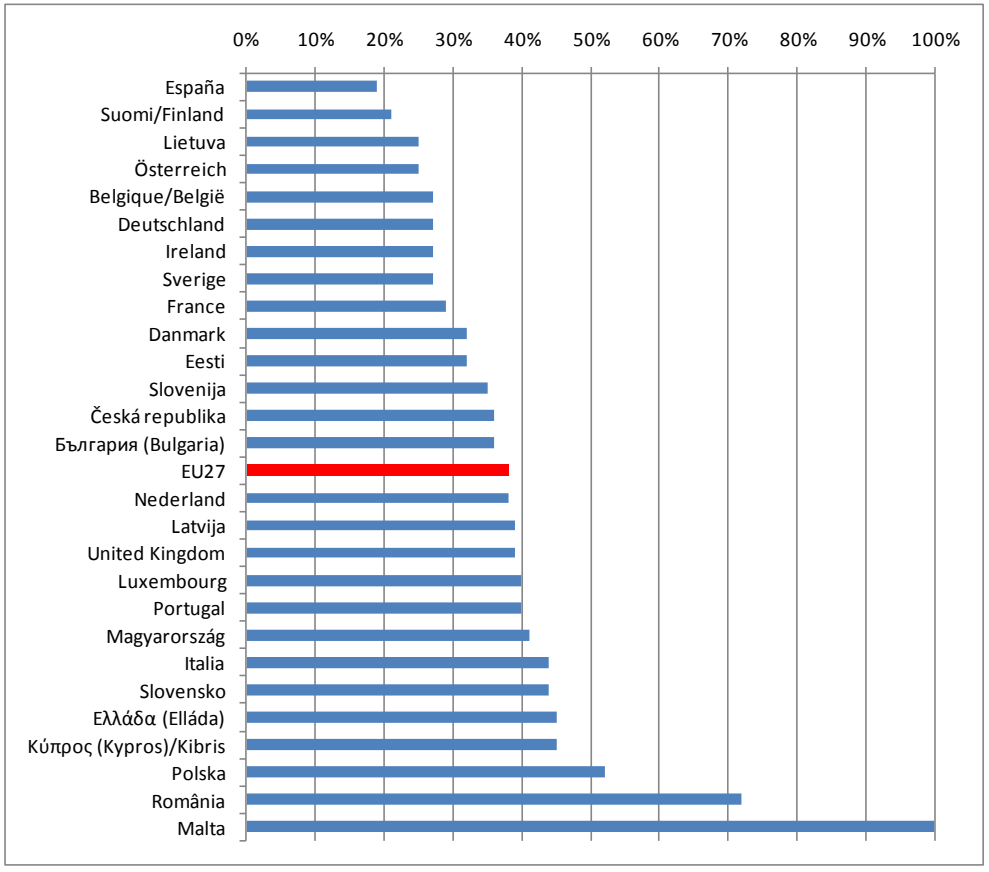

Figure 9 Share of road fatalities in built-up areas. (Source: From European Commission (Care & national data))

[13] Annual Statistical Report 2008, SafetyNet/Erso

In only three of the countries the share was below 50% (Portugal, Italy and Luxemburg). In Portugal this is due to a high share in urban areas (46%) while in Italy and Luxemburg there is a high share on motorways (12% and 19% respectively).

The share of road fatalities in built-up areas is illustrated in Figure 9. In line with what has been indicated above more than 50% of the fatalities occur in non-built-up areas. For all EU countries almost 40% of fatalities occur in built-up areas. Only countries such as Poland, Romania and Malta have registered more than 50% of fatalities in built-up areas.

As seen in Table 2 the picture is the same for different types of road user. Only modes typically used in urban areas such as mopeds, bicyclists and walking have higher shares in urban areas than non-urban areas. However, approx. 45% of mopeds and bicyclist and 30% of pedestrians are killed in non-urban, non-motorway roads.

Table 2 Distribution of casualties and fatalities on urban and non-urban roads by vehicle type (EU27)

EU27 aggregates		urban	non urban	
			motorways	non motorways ("rural roads")
Fatalities	Car occupants	22%	8%	71%
	Bus / coach occupants	14%	23%	63%
	Vans	12%	12%	75%
	Trucks, lorry occupants	13%	19%	68%
	Motor bikers	42%	4%	53%
	Moped users	56%	0%	44%
	Cyclists	54%	0%	46%
	Pedestrians	66%	3%	31%
	Agricultural vehicles	29%	0%	71%
	Other vehicles	37%	1%	61%

Source: From European Commission (Care & national data)

2.3 Fatalities by road users

Share by mode and country

According to EU road casualty statistics (CARE, 2008) 50% of all fatalities are occupants of cars while pedestrians and motorcyclists constitute 15-20% respectively. These casualty groups determine the priorities for further reductions in total casualties.

The share of car fatalities is especially high (more than 60%) in Czech Republic, Estonia, Slovenia and Finland while the share of motorcycle fatalities is high (more than 20%) in Greece, Italy, Cyprus and Malta. Moped fatalities are overrepresented in Denmark and pedal cyclist fatalities are overrepresented (more than 10%) in Czech Republic, Denmark, Hungary and Netherlands. The share of pedestrian fatalities is high (over 30%) in Latvia, Lithuania, Poland, Romania and Slovakia. This is illustrated in Appendix 1.5.

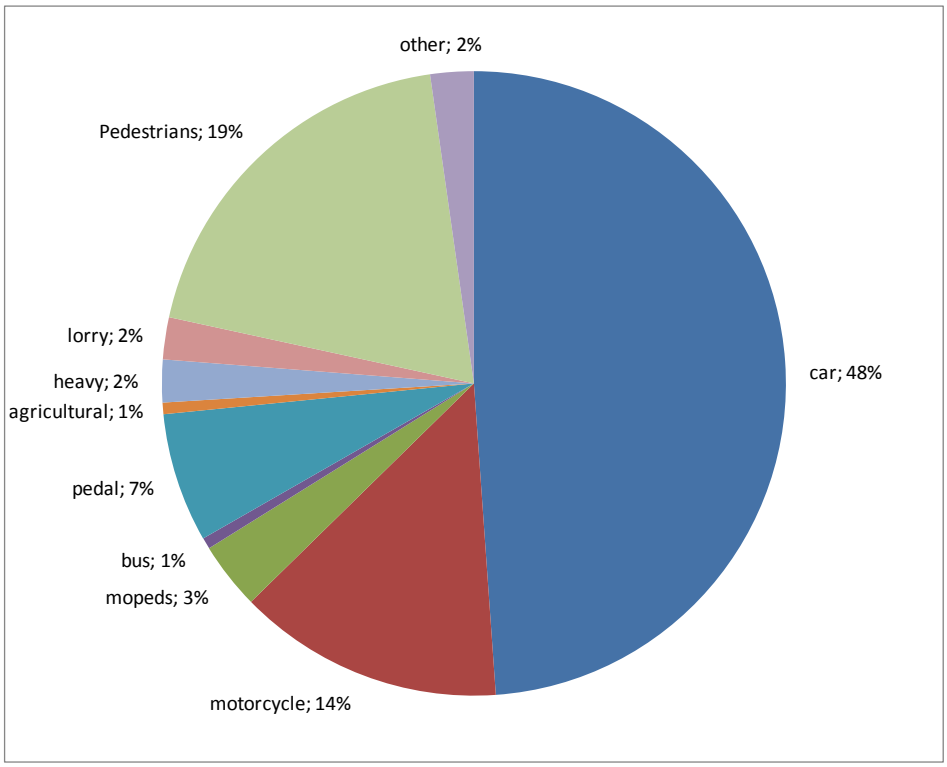

Figure 10 *Share of road fatalities in EU by transport mode. (Road fatalities 2008 data source: EC CARE database June 2009)*

Share by place

In non-built areas, car occupants account for approximately 60% of fatalities (39% in non-built areas) while pedestrians account for 36% and cyclists for approximately 9% in built-up areas compared to 10% and 5% respectively in non-built areas.

Share by age

Approx. 6% of EU road traffic fatalities are persons below 18 years and 17% are between 18 and 24 years. Almost 20% of the fatalities are above 65. Children under 18 are overrepresented in countries such as Slovenia and Netherlands while people above 65 are overrepresented in Netherlands, Malta, Denmark, Germany and Portugal as illustrated in Appendix 1.6.

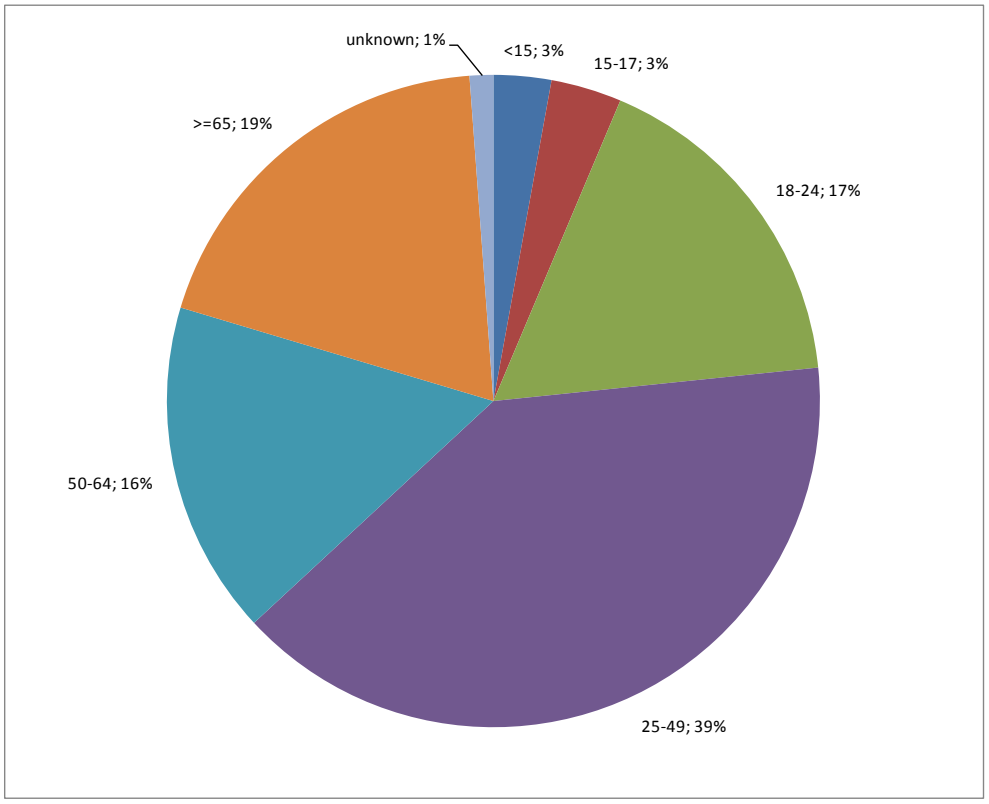

Figure 11 *Share of road fatalities in EU by age. (Road fatalities 2008 data source: EC CARE database June 2009)*

In built-up areas, people over 65 are overrepresented. The share for people older than 65 is almost 30% in built-up areas compared to 14% in non-built-up areas. In non-built-up areas the share in the age group 25-49 is higher (46%) than in built-up areas (33%).

2.3.1 Cars

The number of car occupant deaths has decreased during recent years as illustrated in Appendix 1.7.

Car drivers are a little overrepresented in the age groups 18 to 24 and 25 to 49 years. Especially in Germany, Ireland, Cyprus, Malta and Austria the young car drivers (18 to 24 years) are overrepresented with close to or more than 30% of fatalities as illustrated in Appendix 1.8.

According to ETSC[14] improving vehicle passive safety has helped to prevent some 10,600 car occupants from dying in road crashes in the EU over the past 10 years. However countries have performed differently with Sweden, Ireland and Norway being the countries with the highest proportion – above 60% – of cars awarded 5-stars for occupant protection amongst new cars sold in 2008. The share of cars sold having 4 or 5 stars is according to ETSC highest in Por-

[14] ETSC, 2010 on the Horizon, 3rd Road Safety Pin Report, June 2009

tugal, Norway, Sweden and France at over 90%. Generally the level of occupant safety is lower in the new Member States than in EU-15, with the exception of Slovenia. In Appendix 1.9 data from ETSC[14] on safer vehicles is presented including occupant safety of new cars and child protection in new cars.

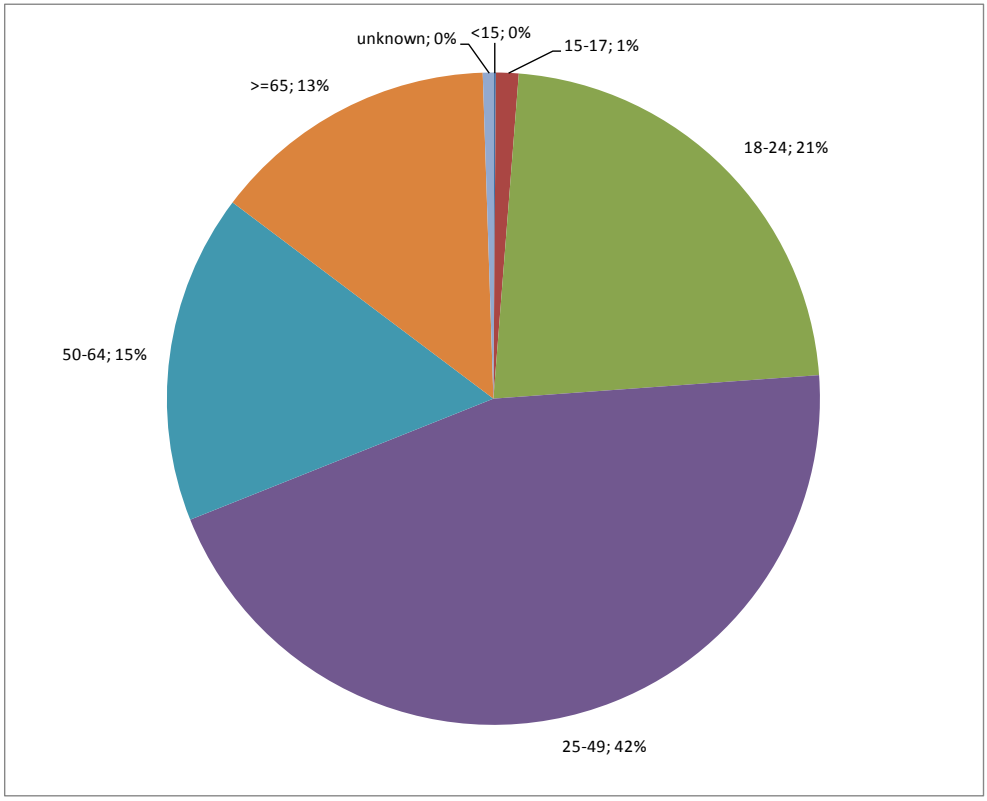

Figure 12 Share of road fatalities by car drivers in EU by age. (Road fatalities 2008 data source: EC CARE database June 2009)

Pedestrians are amongst the group of vulnerable road users but over 66% are struck by the front of a car. Since 2003 regulations have been introduced which aim to limit injury risks by ensuring car fronts are less aggressive. Since 2005, new models of car have to comply with the regulation requiring improved head and leg protection and from 2013 these will become more stringent. From 2009 pedestrian protection regulations also introduce the need for car manufacturers to equip new models of cars with advanced braking systems. The regulations will be evaluated in 2014 when the need for further development will be assessed.

According to ETSC[14] improvements in pedestrian protection have developed more slowly than occupant protection. Approx. 21% of the new cars sold in the EU are 3-star, 42% were 2-star and 29% only 1-star. In Southern, Central and Eastern European countries cars tend to be smaller providing better pedestrian protection, but less good occupant protection. In e.g. some Northern European countries, Germany or Switzerland cars tend to be larger, performing less well on pedestrian protection but providing better occupant protection. In Appendix 1.9 data from ETSC[14] on safer vehicles is presented including pedestrian safety of new cars.

More than half of the vehicles in EU are according to ETSC more than 7 years old. Appendix 1.9 provides data from ETSC[14] on renewal rates of vehicles. Generally renewal rates are lower in Central and Eastern Europe, e.g. due to imports of second-hand cars. In 2007 the annual renewal rate was approx. 10% in e.g. Belgium, Ireland and Cyprus to 2% in Poland Bulgaria and Latvia. Due to the financial crisis the renewal rate is expected to be slower for a period. However, when the global economy improves the renewal rate is expected to increase thus accelerating the process of introducing safer cars.

2.3.2 Pedestrians and Cyclists

Pedestrian and cyclist travel

Walking and cycling account for only a small share of distance travelled by road. Pedestrians and cyclists account though for much larger proportions of journeys made and time spent using the roads[15].

Surveys show that around 20-40% of all journeys are travelled by bicycles or on foot with the highest percentage being in the Netherlands and the lowest in Finland. However, national travel surveys often do not register shorter trips or the walking parts of trips made primarily by public transport. In some countries, the amount of walking is not measured systematically. At present, the importance of walking is, therefore, underestimated. Walking, as a travel mode, is particularly important for children below the age of 12 and adults aged 75 and above[16].

Survey data from a selection of seven European countries show that 3-28% of all trips are made by cycling, the highest figure being for the Netherlands. For short trips under 5 km, the share of cycling varies from 12% (Finland) to 39% (the Netherlands). The average trip length for cycling is around 3 km in most European countries. For the EU as a whole, the bicycle is used most frequently by adolescents (12-17 years of age)[16].

Fatality trends

Pedestrians

Provisional CARE data for 2008 (EU 27) indicates that there were 8,000 pedestrian deaths comprising 19% of total EU deaths in road crashes. This total represents a decrease of 28% compared with 2001. Indication of trends and share of total fatalities is provided in Appendix. 1.10. In some EU countries, the share is much higher e.g. Slovakia where pedestrian deaths comprise 34% of total road deaths as opposed to the relatively low contribution of pedestrian deaths to totals in Belgium (10%) and the Netherlands (12%).

Around two-thirds of EU pedestrian deaths occurred in built-up areas. The majority of deaths involved the 50-64 (23%) and over 65 age-groups (39%) with 5% of deaths involving those aged 15 and below. Age groups that have the

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[15] ETSC (2008), Road Safety is a right and responsibility for all: Al blueprint for the EU's 4th Road Safety Action Programme 2010-2020, Brussels 2008

[16] European Road Safety Observatory, http://www.erso.eu (2009) ttp://www.erso.eu/knowledge/content/40_pedestrians/pedestrians.htm

highest percentage of pedestrian fatalities are children younger than 10 years of age and adults aged 65 and above.

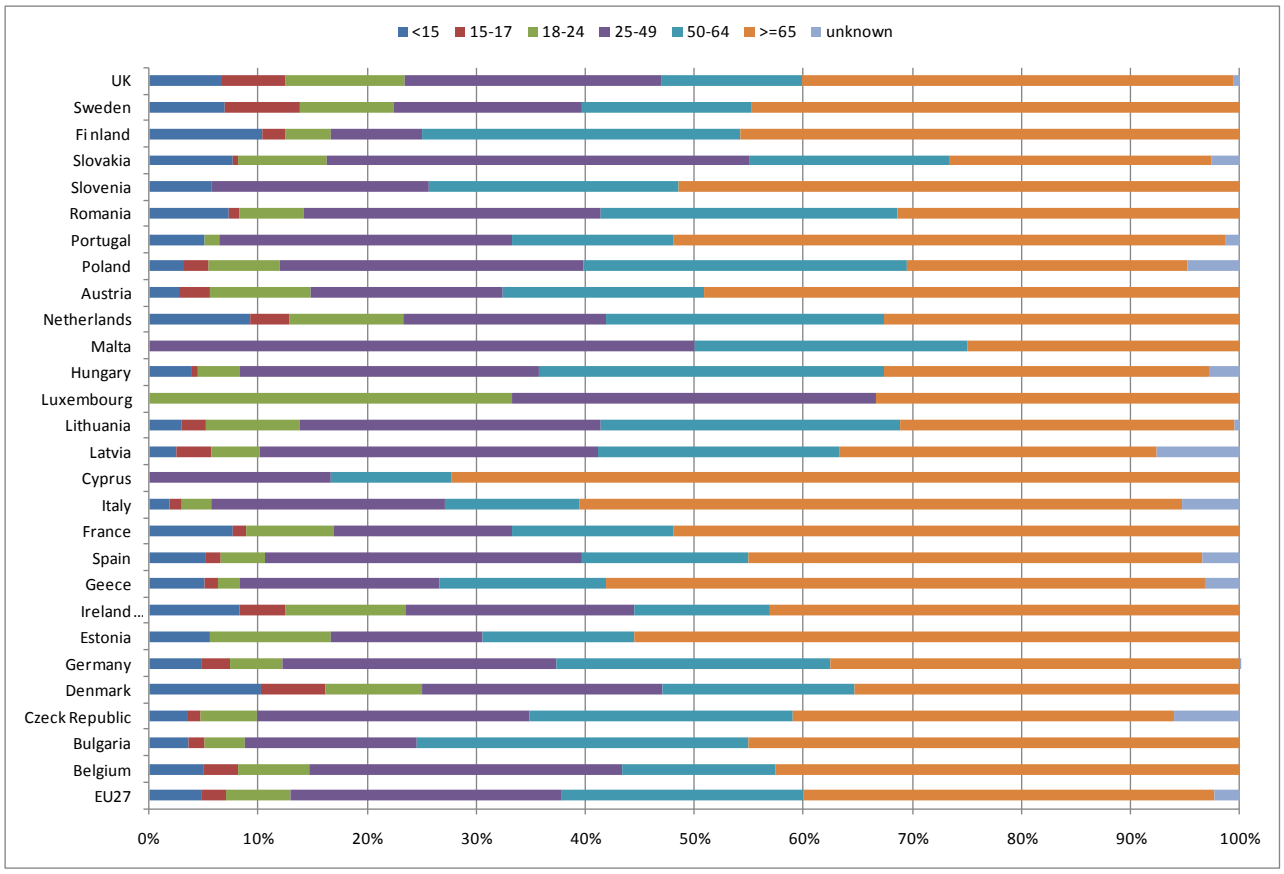

Figure 13 *Share of pedestrian fatalities in EU and member states by age. (Road fatalities 2008 data source: EC CARE database June 2009)*

With regard to outcomes in individual Member States the highest percentage reductions achieved in pedestrian deaths between 2001 and 2007, were achieved in Luxembourg (-64%), Portugal (-54%), the Netherlands (-47%) and deaths increased in Austria (5%), Denmark (39%) and Sweden (1%).

Cyclists

Provisional CARE data for 2008 (EU 27) indicates that there were 2,800 cyclist deaths comprising 7% of total EU deaths in road crashes. Over 60% of deaths involve people aged 50 and above, with 37% aged 65 and above.

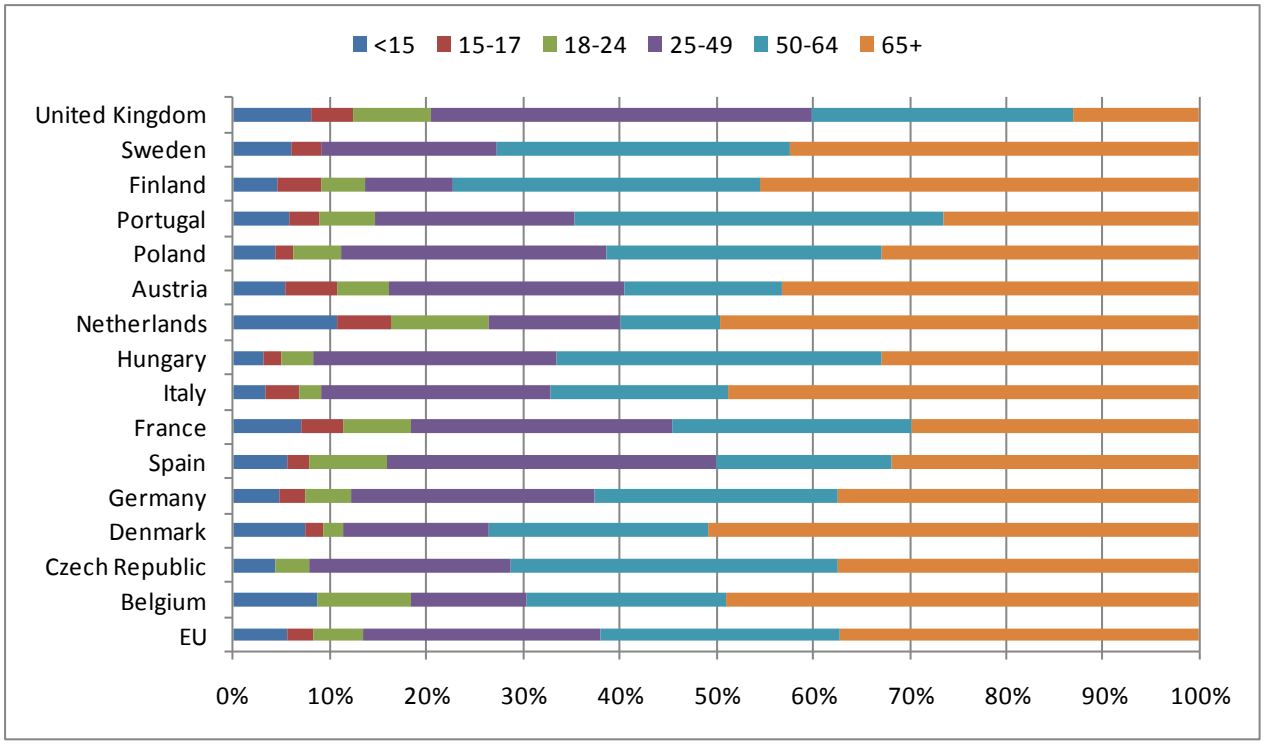

Figure 14 *% of pedal cyclist fatalities by age in various EU Member States. (CARE Database.)*

The trend in EU27 is downward with an overall reduction of 22% between 2001 and 2007. There are big differences in the trend as seen in Figure 15 e.g. due to differences in bicycle use.

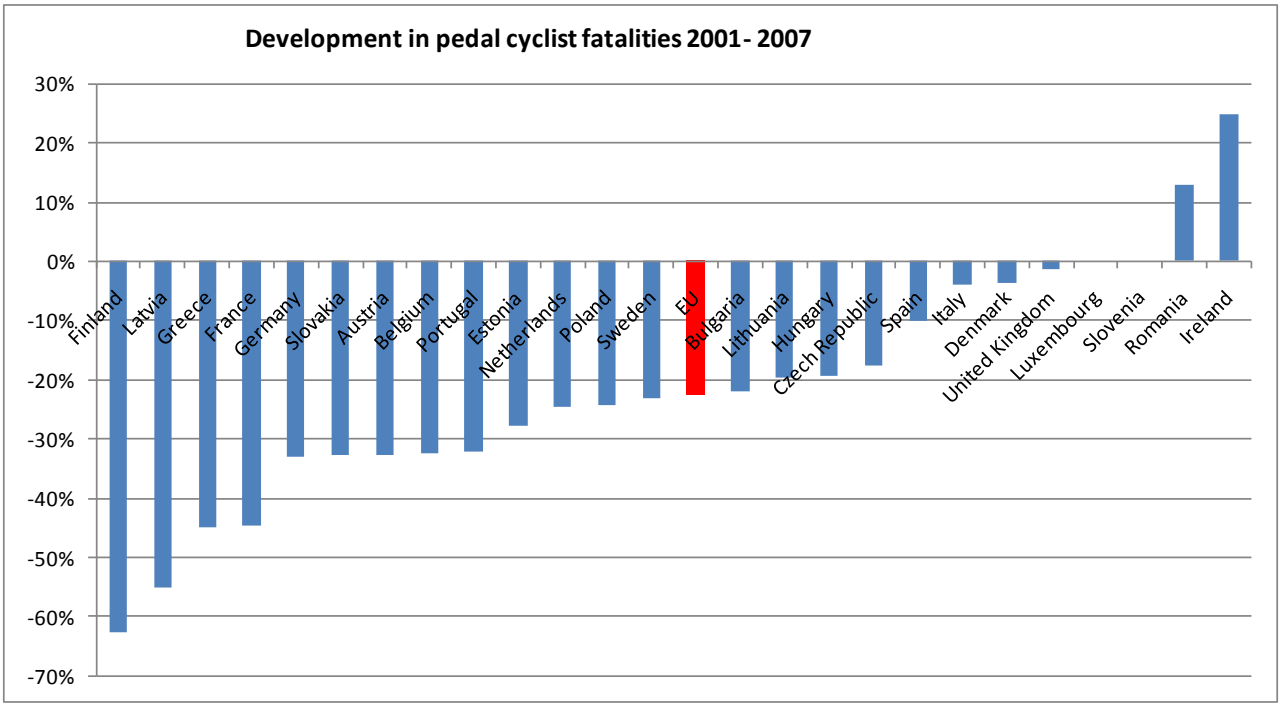

Figure 15 *Development in pedal cyclist fatalities 2001- 2007. (CARE Database. For further information and analysis: see ERSO/Data/ Accident Statistics www.erso.eu)*

Risks

Walking and cycling are modes of travel which are increasingly recommended for general health and well-being. However, the risk of being killed in traffic per kilometre travelled is more than 9 times higher for pedestrians than for car occupants and more than 7 times higher for cyclists than for car occupants[17].

Research shows that relatively small changes in speed can have a major impact on the severity of crash outcomes. At 30 km/h the vast majority of pedestrians (and probably cyclists) can survive a crash, whereas at speeds above 50 km/h, the majority does not survive[18]. Most fatal and severe injuries to pedestrians and cyclists occur in urban areas, with urban speed management being a priority area for attention. The severity of injuries suffered by these vulnerable road users is higher than for car occupants, as are levels of under-reporting of injury in national crash databases[16].

2.3.3 Growing number of elderly people

In the future the growing number of elderly people will present new challenges for road safety, as seen above, especially in urban areas and will require new facilities and intervention. The number of people aged 65 or more is expected to represent 20% of the population by 2020 and 30% in 2060 as opposed to 17% today[19]. The median age of the European population is by 2060 projected to be more than 7 years higher than today. Elderly people of today tend to travel more than their parents did. This tendency is expected to continue and is reinforced by improved health, more travelling options and better foreign language skills. In view of the physical vulnerability and health problems of older drivers, efforts have to be made to ensure that ageing does not have negative impact on road safety.

Elderly drivers are not so much a risk to others, but may be at risk themselves. The frailty of some elderly people makes them vulnerable to personal injury or fatality in the event of a crash[20]. As a result, older drivers have a relatively high fatality rate, but their injury rate is much lower. Data from the Netherlands illustrates this. Taking the distances travelled into account, the fatality rate for car drivers is more than 5 times higher for those aged 75 years and over than for the average for all ages, whereas their injury rate is two times higher.

Elderly drivers are over-represented in crashes occurring while turning off at intersections, where typically the older driver turns against oncoming traffic with right of way on the main road. Elderly drivers are “under-represented” in

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17 ETSC (2003a) Transport Safety in the EU a statistical overview, Brussels, Belgium

18 Ashton S J and Mackay G M (1979) "Some characteristics of the population who suffer trauma as pedestrians when hit by cars and some resulting implications" 4 IRCOBI International Conference, Gothenburg

19 COM(2009) 279/4

20 New transport technology for older people; Summary and Conclusions of the Symposium on Human Factors of Transport Technology for Older Persons. OECD (2004)

crashes involving loss of control or collisions due to speeding, risky overtaking or driving under the influence of alcohol.

The road safety of older road users is to a large extent determined by two factors: functional limitations and physical vulnerability. Both factors contribute to the relatively high fatality rate for older road users as a result of crashes.

As people age functional limitations and disorders may occur. This may increase the crash rate of road users. This is particularly the case in the decline of motor functions like muscle strength, finely tuned coordination, and the ability to adapt to sudden changes in bodily position. There are few indications that a decline in visual and cognitive functions, as part of normal ageing, also has road safety consequences.

Functional limitations and age related disorders do not automatically lead to unsafe traffic behaviour. Other characteristics of older road users can prevent safety problems. Among these are the insight into one's own limitations, driving experience, and compensation behaviour such as driving when the roads are less busy or when it is daytime and dry.

If, in spite of behavioural compensation, a crash occurs, the older driver is more vulnerable than younger drivers: his injuries may be more severe given an identical collision impact.

Increases in the number of people aged 75 years and above, of the driving licence rates for older people and of the mobility per older driver may increase the future number of fatalities among older drivers.

2.3.4 Powered two wheelers

Powered two wheelers (PTWs) comprise mopeds with 50cc and restricted top speed and motorcycles.

Powered two wheeler travel

The use of PTWs varies between countries. PTWs are more popular in southern European countries. Greece leads with 150 mopeds and 100 motorcycles per 1000 inhabitants. In most countries the number of mopeds is decreasing although at different rates or has stabilised. The trends for numbers of motorcycles are quite different. Almost all countries have experienced an increase in the number of motorcycles in recent years, again at various rates. The increase is stronger for older motorcycle riders. Middle European countries show an ongoing downward trend in number of motor-cycles[21].

[21] European Road Safety Observatory, http://www.erso.eu (2009) http://www.erso.eu/knowledge/content/45_poweredtwowheelers/powered%20two%20wheelers.htm

Fatality trends

While the number of road user deaths has declined considerably in the past decade in EU countries the number of fatally injured PTW riders rose in 13 out of 27 countries. Provisional CARE data for 2008 indicates that there were 6,956 (PTW) deaths comprising around 18% of all EU road deaths while representing only 2% of the total kilometres travelled (motorcycles: 5,599 fatalities (14.1%), mopeds: 1,456 fatalities (3.75%).

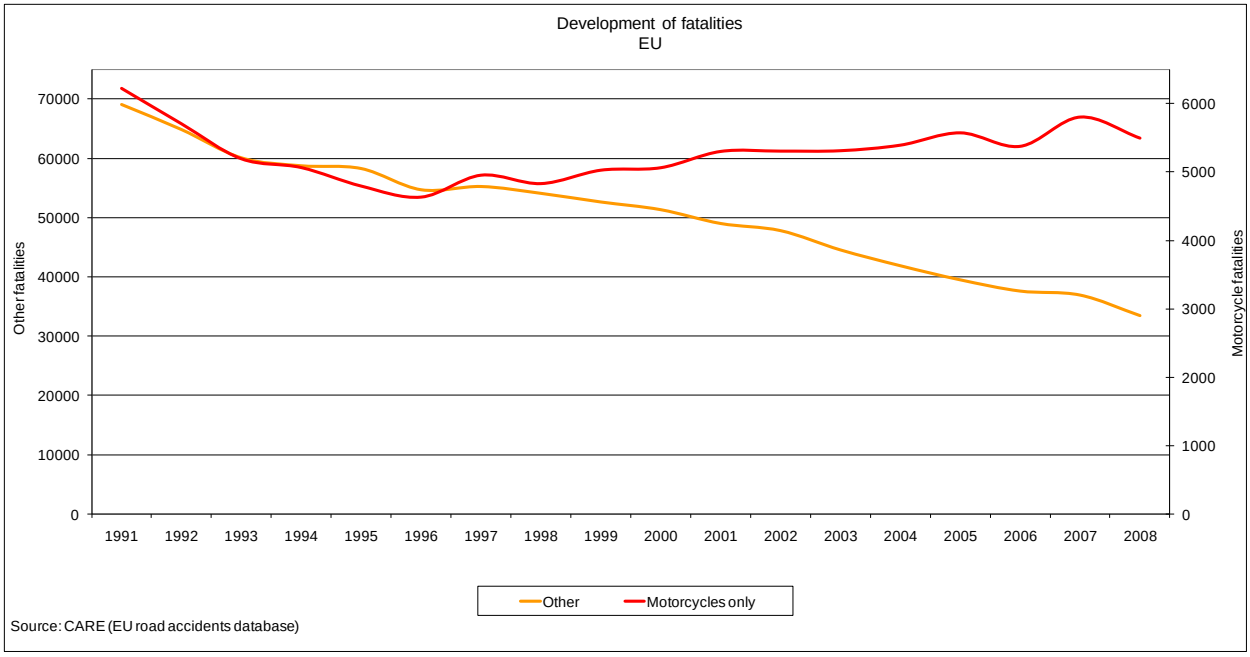

Figure 16 Evolution in motorcycle fatalities 1998- 2008 compared to other modes. (CARE Database)

In line with rising use, motorcyclist deaths have risen annually as a percentage of all road deaths in the EU. The numbers of moped deaths have, however, declined from 1,670 to 1,456 (between 2005 and 2008), although the proportion moped deaths in relation to all deaths has remained about the same. Two thirds of motorcyclist deaths are in the 25-49 age group, and 19% are aged 18-24 as illustrated in Appendix 1.11. Motorcycle deaths account for 23% of all deaths in Italy with low shares of the total in Latvia (3%) and Poland (3%), reflecting relatively high and low levels of use accordingly.

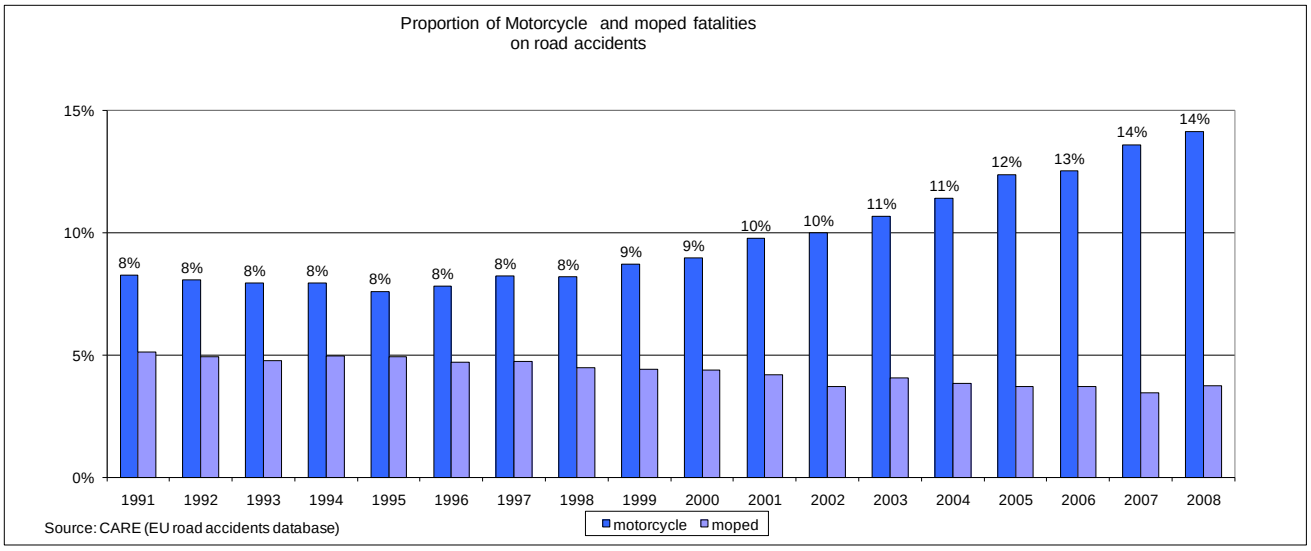

Figure 17 Evolution in share of motorcycle and moped fatalities 1991- 2008. (CARE Database)

Risks

Around 6,200 powered two wheeler riders were killed in road crashes in the EU25 in 2006 representing 16% of the total number of road deaths while accounting for only 2% of the total kilometres driven[22]. For powered two wheeler users, the risk of being killed in traffic on the basis of distance travelled is 18 times higher than for car drivers for EU countries, the lowest driver/rider risk being in Norway (6 times) and the highest in Slovenia (50 times). 50% of fatally injured moped riders were under the age of 25[23]. 75% of the motorcycle riders killed in traffic were 25+. Younger PTW riders have much higher crash rates than older ones, even if corrected for lack of experience, though older riders are showing an increase in serious injury and fatality crash rates[24].

2.4 Road safety performance

This section provides a brief overview of the road safety performance of individual Member States on:

- The level of road safety effort and an indication of the political importance given to road safety by the respective countries.
- The organisation of road safety work.

[22] ETSC (2009), 3rd Road Safety PIN Report. 2010 on the Horizon, Brussels, Belgium

[23] ETSC (2008a), 2nd Road Safety PIN Report. Countdown to 2010: only 2 Years to Act! Brussels, Belgium

[24] European Road Safety Observatory, http://www.erso.eu (2009) http://www.erso.eu/knowledge/content/45_poweredtwowheelers/powered%20two%20wheelers.htm

2.4.1 Level of road safety effort and the political importance to road safety by the respective countries

One illustration of the level of road safety effort and the political importance given to road safety by the EU countries may be the existence of a national strategy and whether measurable targets have been set (See Table 3 for overview).

However, the provision of sufficient institutional management capacity (including effective lead agency and coordination arrangement and the provision of adequate, sustainable financial resource in practice etc.) needed to ensure delivery of these is all-important. Past experience with the preparation of national action plans in low and middle-income countries has often resulted in 'paper plans' which have taken no account of country ownership and institutional delivery capacity and consequently have never been properly implemented. Safety management capacity weaknesses in low and middle-income countries present a formidable barrier to progress and institutional management functions require strengthening. Likewise safety management capacity weaknesses can also become evident in high-income countries, as their results focus shifts to even higher levels of ambition.[25]

When interpreting the survey results and given the complexity of institutional management, it should also be noted that the data are superficial and based on self-assessment. Few EU countries (other than Sweden and Bulgaria) have yet embarked upon formal road safety management capacity reviews to assess their safety performance in detail from an independent source and to provide reliable information about the existence and effectiveness of national arrangements benchmarked against good practice.

All Member States and Switzerland and Norway have a national strategy covering road safety alone or a general transportation or road strategy including road safety.

[25] Bliss T and Breen J, (2009) *Country Guidelines for the Conduct of Road Safety Management Capacity Reviews and the Specification of Lead Agency Reforms, Investment Strategies and Safe System Projects,* Global Road Safety Facility, World Bank, Washington

Table 3 Overview of the existence of national strategy and measurable targets in EU25, Norway and Switzerland.

	Strategies	
	There is a national road safety strategy	**The strategy includes measurable national targets**
Austria	Yes	Yes
Belgium	Yes	Yes
Bulgaria	Yes	Yes
Cyprus	Yes	Yes
Czech Republic	Yes	Yes
Denmark	Yes	Yes
Estonia	Yes	Yes
Finland	Yes	Yes
France	Yes	Yes
Germany	Yes	No
Greece	Yes	Yes
Hungary	Yes	Yes
Ireland	Yes	Yes
Italy	Yes	Yes
Latvia	Yes	Yes
Lithuania	Yes	Yes
Luxembourg [26]	General strategy	No
Malta	Multiple strategies	Yes
Netherlands	Yes	Yes
Norway	Yes	Yes
Poland	Yes	Yes
Portugal	Yes	Yes
Romania [27]	Yes	Yes
Slovakia	Yes	Yes
Slovenia	Yes	Yes
Spain	Yes	Yes
Sweden	Yes	Yes
Switzerland	Yes	Yes
United Kingdom	Yes	Yes

Source: Global Status Report on Road Safety[28], and/or national sources (Internet and telephone interviews), ETSC and EU DG-TREN, Preparation of country profiles, Final Report[29].

[26] For Luxembourg, a Transport Governmental Implementation Plan exists (2009). The plan includes a series of actions for all modes of transports, including the Road Safety, both in terms of infrastructures and legislation. However, the Ministry of Transport can not confirm whether a specific Road Safety strategy has been adopted or is under preparation. The foreseen actions of Transport Governmental implementation plan, does not constitute quantifiable targets.

[27] Not formally approved according to the Global Status Report on Road Safety.

[28] Global Status Report On Road Safety - Time For Action, World Health Organization (WHO), 2009.

Table 4 The existence of national road safety plans and quantitative targets in EU25, Norway and Switzerland.

Country	National road safety plan	Preparing national road safety plan	Quantitative targets	Trend to reach fatality target
Austria	Yes (3rd edition 2009)	Yes (2010)	50% reduction in fatalities and 20% reduction in injury accidents by 2010 compared to average of 1998 to 2000	On target line (2008)
Belgium	Yes (2001)	-	50% reduction in fatalities by 2010 compared to 2000	Behind target line (2008)
Bulgaria	Yes	-	25% reduction in fatalities and injuries by end of 2010 compared to the 2002-2005 average	Behind target line (2008)
Cyprus	Yes (2001)	-	50% reduction in fatalities by 2010	On target line (2008)
Czech Republic	Yes (2003)	-	50% reduction in fatalities by 2010 compared to 2001	Behind target line (2008)
Denmark	Yes (New version 2007)	-	40% reduction in fatalities and injuries by 2012 compared to 2005	On target line (2009)
Estonia	Yes (2003)	-	Maximum 100 fatalities in 2015 or 50% compared to 2001	Behind new target line (2008)
Finland	Yes (2006)	-	Maximum 250 fatalities in 2010 or 42% compared to 2000, the vision is 0 fatalities	On target line (2008)
France	Yes (annually)	-	35% reduction in fatalities by 2012 compared to 2007 corresponding to less than 3000 fatalities.	On target line (2008)
Germany	Yes (2001)	-	None	On EU target (2008)
Greece	Yes (2005)	-	50% reduction in fatalities by 2010 compared to 2000	Behind target line (2008)
Hungary	Yes (2002)	-	30% reduction in fatalities and injury accidents by 2010 compared to 2001 and 50% by 2015	On target line (2008)
Ireland	Yes (2007 new)	-	Maximum 60 fatalities per million by the end of 2012 and 50 or fewer in the following years with demonstrable downward reductions in each year.	Ahead of target line (2008)
Italy	Yes (1999)	Yes (2010)	50% reduction in fatalities by 2010 compared to average of 1999 to 2001	Behind target line (2008)
Latvia	Yes (2000)	-	70% reduction in fatalities 70% till 2013 compared to 2001. The interim goal is to reduce the number of killed by 50% till 2010.	Behind interim target line (2008)
Lithuania	Yes (2003)	-	50% reduction in fatalities by 2010 compared to 2004	Target reached (2009)
Luxembourg	No[26]	-	None	EU target reached (2008)
Malta	Yes	-	50% reduction in injury accidents by 2014	Behind target line (2008)
Netherlands	Yes (2008)	-	Max. 750 fatalities and 17,000 injuries by 2010 compared to 2001 and a maximum of 580 fatalities in 2020.	Target reached (2008)
Norway	Yes (2008)	-	33% reduction in fatalities and serious injured by 2020 compared to 2009, vision 0 fatalities	New target
Poland	Yes (2003)	-	50% reduction in fatalities by 2013 compared to 2003	Behind target line (2008)
Portugal	Yes (2009)	-	25% reduction in fatalities/population by 2015 compared to 2008 and 50% reduction in casualties by 2010 to average of 1998 to 2000	Ahead of old target (2008)
Romania	Yes (2002)	-	Halving the number of road crashes by 2010 corresponding to 2002.	Behind target line (2008)
Slovakia	Yes (2005)	-	50% reduction in fatalities by 2010	Behind target line (2008)
Slovenia	Yes	-	Maximum 124 fatalities in 2011 or 50% reduction in fatalities compared to 2005	Behind target line (2008)
Spain	Yes (annually)	Yes under development	40% reduction in fatalities by 2008 compared to 2004	Target reached (2008)
Sweden	Yes (2009)	-	50% reduction in fatalities and 25% in the number of serious injuries from 2007 to 2020.	New target (2008)
Switzerland	Yes (2005)	-	Less than 300 fatalities by 2010 and the number of seriously injured to less than 3,000. Reduction by at least 30% every ten years thereafter.	On target line (2008)
United Kingdom	Yes (2000)	-	40% reduction in fatalities and serious injured by 2010 compared to average of 1994 to 1998	On target line (2008)

Source: EU DG-TREN, Preparation of country profiles, Final Report [29], IRTAD Annual Report 2009 [30] and national sources (Internet, telephone interviews).

Table 4 outlines those countries which have a national road safety plan[29, 30] and performance against targets. Most countries have a national road safety plan except Luxembourg. Almost all countries have national quantitative targets for road safety with the exception of Germany and Luxembourg.

Some EU countries have set long-term visions e.g. Sweden, Slovenia, Finland and Norway. Sweden's Vision Zero aims for in long-term to eliminate all fatalities and serious injuries in road traffic crashes. As in many other countries, these countries also have quantitative targets for interim improvements in road safety over a 7-10 years period. Examples of targets are shown in Table 4.

In general, new Member States have adopted the EU target of 50% reduction in fatalities while most existing EU Member States have kept their own targets. Several have acknowledged the importance of the EU target in inspiring new targets and activity and improving national safety performance.

As is seen in Table 4 five countries - Ireland, Lithuania, the Netherlands, Portugal and Spain - are ahead of their target line while 8 countries are on their target line (Austria, Denmark, Finland, France, Hungary, Slovenia, Switzerland and UK). Furthermore Luxembourg has reached the EU target and Germany is on the EU target line. Norway and Sweden have got new targets in 2008 and 2009. Others are behind and will need to make extra effort to reach their targets. The available graphs from IRTAD[30] are presented in Appendix 1.12.

2.4.2 Responsibility for and organisation of road safety work

The following outlines survey data on the ministry or ministries in charge of the road safety policy in the Member States and the existence or otherwise of a co-ordination body.

In Table 5 an overview is provided of the existence of a lead agency in Member States, the name of the central ministry/ministries and the institution.

The lead agency can take different forms e.g. a stand alone agency, a department in a Ministry, a road or transport authority or a office reporting to the Minister in charge. The power and funds of the lead agency can be very different. Some agencies are only a committee without funds and depending on staff from another agency, others are big organisations with their own budget for staff and road safety actions. In most countries Ministry of Transport or Ministry of internal Affairs are responsible for road safety and the lead agency is a Road Safety Council.

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29 EU DG-TREN, Preparation of country profiles, Final Report, April 2005 (prepared by COWI)

30 IRTAD Annual Report 2009, International Traffic safety Data and Analysis Group, OECD, International Transport Forum, 2009

Table 5 Overview of the responsible organisation and the existence of lead agency and status for agency in EU25, Norway and Switzerland.

	Central Organisation and lead Agency in charge of implementing National Safety Strategy Plans	Lead Agency Status
Austria	Austrian Federal Ministry for Transport, Innovation and Technology (BMVIT), Austrian Road Safety Council	Interministerial
Belgium	Ministry of Transport, Interministerial Committee for Road Safety	Interministerial
Bulgaria	Ministry of Transportation, State-Public Consultative Commission on the Problems of Road Safety	Interministerial
Cyprus	Ministry of Communications and Works , Road Safety Council	Interministerial
Czech Republic	The Czech Governmental Council for Road Safety	Governmental
Denmark	Ministry of Justice and Ministry of Transport , Danish Road Safety Commission	Interministerial
Estonia	The Ministry of Economic Affairs and Communications, The Road Safety Committee of the Government of the Republic of Estonia	Interministerial
Finland	Ministry of Transport and Communication, The Consultative Committee on Road Safety	Governmental
France	Interministerial Road Safety Task Force and Committee on Road Safety	Interministerial
Germany	Federal Ministry for Transport, Building and Housing, German Road Safety Council	Governmental
Greece	Ministry of Transport and Communications, Inter-ministerial Committee on Road Safety	Governmental
Hungary	The Ministries of Economy and Transport and the Ministry of Interior, Interministerial Committee for road safety	Interministerial
Ireland	Department of Transport , Road Safety Authority, High Level Group on Road Safety	Governmental
Italy	The Ministry of Infrastructure and Transport, General Directorate for Road Safety	Governmental
Latvia	Ministry of Transport, National Road Safety Council	Interministerial
Lithuania	Ministry of Transport and Communications, State Traffic Safety Commission	Interministerial
Luxembourg	Ministry of Transport with Road Safety Association and Police	Interministerial
Malta	Ministry of Transport, Malta Transport Authority	Governmental
Netherlands	Ministry of Transport, Public Works and Water Management. Directorate-General Passenger Transport, Road Safety Division	Governmental
Norway	Ministry of Transport and Communication, Road Safety Committee	Interministerial
Poland	Ministry of Infrastructure ,The National Road Safety Council	Interministerial
Portugal	Ministry of Internal Affairs (National Road Safety Authority), Council for Road Safety	Governmental
Romania	Ministry of Transport, The Interministerial Council for Road Safety	Interministerial
Slovakia	Ministry of Transport, Posts and Telecommunications , Road Safety Council	Governmental
Slovenia	Ministry of the Interior, Interministerial Working Group on Road traffic Safety	Interministerial
Spain	Ministry of Interior (General Directorate of Traffic), Inter-Ministerial Commission for Road Safety	Governmental
Sweden	The Ministry of Industry, Employment and Communication, Swedish Road Administration	Governmental
Switzerland	Federal Roads Agency, The Swiss Council for Accident Prevention	Governmental
United Kingdom	The Department for Transport, The Road Safety Advisory Panel	Governmental

Source: Global Status Report On Road Safety[31], and national sources (Internet and telephone interviews). Luxembourg from Traffic Law enforcement across the EU, ETSC[33]

Good practice has been identified in leadership arrangements. The degree to which different lead agencies carry out key management functions is likely to vary enormously which will affect the results achieved. For example, in good practice, the lead agency is a governmental body and takes responsibility within

[31] Global Status Report On Road Safety - Time For Action, World Health Organization (WHO), 2009

government for the development of the national road safety strategy and its results focus - the overarching institutional management function. It has a role in all other functions though sometimes it adopts more of a guiding, encouraging or catalytic role. It usually also takes responsibility for horizontal inter-governmental coordination arrangements; vertical coordination of national, regional and local activities; coordination of delivery partnerships between government, professional, non-governmental and business sectors and parliamentary groups and committees; ensuring a comprehensive legislative framework; securing sustainable sources of funding and creating a rational framework for resource allocation; high-level promotion of road safety strategy across government and society; periodic monitoring and evaluation of road safety performance; and the direction of research and development and knowledge transfer.[32]

Experience globally indicates that where leadership and coordination is carried out predominantly at inter-ministerial level without the driving force of a properly resourced lead agency/department, such arrangements, in general, provide more a forum for an exchange of views on the part of senior officials and Ministers than for effective inter-governmental decision-making and a positive influence on results.[32]

Road safety organisation and coordination

The organisation and responsibilities for the Member States (EU27), Norway and Switzerland are briefly described in the following including which institutions, organisations and other institutes, etc. are involved in road safety at the various levels of government (national, regional, local). This section is based on the country profiles on the ERSO homepage[29], ETSC[33] report and IRTAD [30]. Again, no conclusions are drawn about the effectiveness or otherwise of reported arrangements.

Austria

The Austrian Federal Ministry for Transport, Innovation and Technology (BMVIT) is responsible for road safety and the Austrian Road Safety Council is the lead agency dealing with road safety.

In general, the Austrian Federal Ministry for Transport, Innovation and Technology (BMVIT) is responsible for the implementation and evaluation of the national road safety programme. A task force has been set up to develop the implementation phase of this decentralising process with respect to road safety. This task force consists of:

- The Ministry for Transport, Innovation and Technology
- The Ministry for the Interior
- The Austrian Road Safety Board

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[32] Bliss T and Breen J, (2009) *Country Guidelines for the Conduct of Road Safety Management Capacity Reviews and the Specification of Lead Agency Reforms, Investment Strategies and Safe System Projects*, Global Road Safety Facility, World Bank, Washington.

[33] Traffic Law Enforcement across the EU - An overview, ETSC

- Representatives from the regions
- Representatives from local municipalities.

The Austrian road safety programme is the overall programme for all roads, and no specific regional or local road safety plans will be developed by the federal authorities. Regional and/or local road authorities have the possibility of developing safety plans according to the principles of the "Austrian Road Safety Programme". The programme will primarily be implemented through incentives (e.g. demo-projects, funded by the federal level in co-operation with regional or local levels, a contest "Best in Austria", promotional budgets for specific problem areas, such as redesign of urban through roads). In addition, a number of regions, as well as the Austrian motorway operator ASFINAG, have now set up their own sectorial road safety programmes.

The Ministry of the Interior has responsibility for the Police, which is responsible for enforcement. Furthermore, the provisioning and maintenance of items to observe road traffic (e.g. radars for trajectory control) sort under the ministry. The ministry is also responsible for collection and preliminary analysis of accident data.

Belgium

The Ministry of Transport is responsible for road safety and the Inter-Ministerial Committee for Road Safety is the lead agency dealing with road safety.

Road safety is dealt with at federal level by the Ministry of Transport and the Belgium Road Safety Institute (IBSR/BIVV). In 2001, two bodies were created to take overall responsibility and provide guidance for road safety policy in Belgium; the Inter-Ministerial Committee for Road Safety and the Federal Commission on Road Safety.

The Inter-Ministerial Committee for Road Safety is responsible for the Road Safety Policy and is composed of Regional Ministers for Infrastructure and Mobility, as well as Federal Ministers of Justice, the Interior, Urban Policy, Mobility and Transport.

The Federal Commission on Road Safety, which is the successor of SGVV[34], is an advisory body to the Inter-Ministry Committee and meets every 3 months. It is composed of experts and representatives of courts, police, departments etc. and of various stakeholder organisations.

IBSR provides services to government institutions that are involved in the field of road safety. IBSR is a body for consultation and coordination between the various actors in the field of road safety at federal, regional, provincial, local or municipal level. The objectives are to promote road safety through information and education, and research and advice.

[34] Staten-Generaal voor De Verkeersveiligheid - Etats-généraux pour la Sécurité Routière or Road Safety Consultation Group

The administration of transport infrastructure is largely decentralised. Road safety issues related to infrastructure are therefore handled at regional level (LIN in Flanders and MET in Wallonia). The regions are responsible for educational measures and programmes as well.

The Flemish Region has also established the Flemish Road Safety Agency, which aims at going beyond the actions taken at national level.

The National Institute of Statistics (INS) is responsible for releasing accident data.

Bulgaria

The Ministry of Transportation is responsible for road safety and the State-Public Consultative Commission on the Problems of Road Safety is the lead agency dealing with road safety.

There are many stakeholders involved in road safety in Bulgaria. These mainly comprise the National Road Safety Commission (NRSC), Ministry of Transportation (MoT), the National Road Infrastructure Fund (RIF), RIF research institute, and Ministry of Interior (MoI / Traffic Police) and its research institute. Others include Ministry of Health and Treatment and Rescue and Relief, Ministry of Regional Development (MRD), Ministry of Education as well as Insurance companies, Municipalities, Consulting engineers and construction companies.

The National Roads Safety Commission (NRSC) is responsible for coordinating and managing road safety. National coordination of road safety is undertaken by the NRSC which comprises membership of government ministries, private sector and NGO members. It is chaired by the Minister of Interior and has 3 deputy Ministers (From Interior, Transport and Regional Development) as deputy chairpersons. It is also developing a regional structure and there are similar regional road safety commissions in around 10 out of the 28 regions and in several of the app. 264 municipalities. At national level it can bring together ad hoc groups of technical specialists as needed to discuss specific initiatives.

Each NRSC member provides safety experts as needed to provide inputs on specific topics where they have expertise but these are just temporary arrangements as there is no permanent technical secretariat. The secretariat/administrative function to the NRSC is provided by the Ministry of Interior.

Cyprus

The Ministry of Communications and Works is responsible for road safety and the Road Safety Council is the lead agency dealing with road safety.

The Cyprus Road Safety Council is a national council advising the Ministry of Communications and Works on road safety issues. The Council is chaired by the Permanent Secretary of the Ministry of Communications and Works and has as its members representatives of all involved authorities in road safety: the Chief of Police, the Attorney General, the Directors of the Departments of Public Works and Road Transport, the General Directors of the Ministry of Health, the Ministry of Education, the Ministry of Finance and the Cyprus Radio Foundation.

The authority responsible for road safety in Cyprus is the Ministry of Communications and Works. A Road Safety Unit has been set up in the Ministry of Communications and Works, which acts as the executive, administrative and managerial tool of the Road Safety Council. The Unit analyses road safety conditions and risk factors and monitors actions and measures taken for the implementation of the Strategic Action Plan 2005-2010. The Unit presents a report of the progress of the Strategic Road Safety Plan to the National Road Safety Council every four months. The Council of Ministers is briefed annually on the progress of the Strategic Action Plan and is asked to approve the funding of actions and the provision of required staff and equipment.

In addition, regional and local authorities are also involved in road safety issues, as they are responsible for 2/3 of the road network.

Czech Republic

The Czech Governmental Council for Road Safety is the lead agency for road safety in the Czech Republic. The Council for Road Safety consists of representatives of both governmental and non-governmental bodies and is chaired by the Minister of Transport. It is the main co-ordinating body and lead agency for road safety at government level. The Council was created in 2004, but similar high level coordinating bodies existed in different forms since 1969. It gives recommendations for road safety improvements, but does not have any power of decision or financial resources.

The Ministry of Transport (MoT) is the central state administration authority for matters involving transportation, including being responsible for the creation of the country's transportation policy.

The MoT is the central state authority in the field of road traffic (including road traffic safety) and is mainly responsible for road safety on national level, e.g. setting targets and co-ordinating activities. The entity responsible for the coordination of road safety activities, including campaigns is the department BESIP (Road Safety Authority). MoT also chairs the expert group responsible for preparation of the national road safety strategy. The Transport Research Centre - CDV conducted the elaboration of the new road safety strategy for 2020. MoT issues the technical guidelines and technical standards for the design, construction and maintenance of roads, including road signing and road marking. Other responsibilities include assuring driver administration, such as the production and distribution of national driving licences, international driving permits and other documents itemised in the law on road traffic, and state supervision of the system of training of applicants for driving permits and drivers including the Central Driver Registry Service. MoT has a similar central role in vehicle administration such as regulations and vehicle registry, vehicle approval and checking vehicles in operation and professional state supervision.

Regional authorities are responsible for the administration of the 2nd and 3rd class roads in their region. The local authorities are responsible for the administration of local roads in their territory. The local authorities incorporate the road accident prevention including road signing and road marking as well. Since 2003 there are 205 local administration (municipality of the III. degree) with the extended jurisdiction also to issue, renew and withdraw driving li-

cences, including international driving permits, maintain registers of drivers, execute the administration of offences included in the responsibility of the police, including the operation of local penalty point system and providing data from the register in their territorial activity.

The Ministry of Interior is responsible for supervision of safety and traffic flow on roads. The Police Force is responsible for traffic law enforcement and road traffic accident investigation including registration of road traffic accident data and for operating the central register on road accidents. The Police can fine road traffic offences on the spot only. In parallel, the preventive groups of the Police Force provide road accident prevention.

Denmark

The Ministry of Justice and the Ministry of Transport are responsible for road safety and the Danish Road Safety Commission is the lead agency dealing with road safety.

The Danish Road Safety Commission advises the Ministry of Justice and the Ministry of Transport on road safety. The Commission includes members of the Danish Parliament, politicians from municipalities, representatives of organisations and various experts. The Commission has drawn up the national Road Safety Action Plan.

The Road Traffic Act is primarily administered by the Ministry of Justice, while the Ministry of Transport administers the Public Road Act. Other ministries and subordinated agencies also issue directives related to road safety. The Road Traffic Act concerns all types of transportation on the publicly accessible road network. The Public Road Act deals with the administration of public roads on the national and local levels.

The Danish Road Safety Council is a private association of authorities and national organisations. The number of member organisations is currently 42. The Danish Road Safety Council has existed since 1935 and works to increase public road safety through information and traffic education. The Council aims for the public to gain knowledge and understanding of the aspects of road safety. The Council works to sustain road safe conduct by means of campaigns, consulting and the production of instruction materials.

The Police's main task is law enforcement. The Traffic Police also participates in national and local road safety campaigns, in local traffic councils and plays an active role in primary school traffic education. The Danish Police is divided into 11 districts, and all traffic regulating projects on public roads have to be approved by the local police.

The Danish Road Directorate (National Road Administration or NRA and municipalities are responsible for improving road safety on regional and local roads. The fields of action comprise analyses, planning and implementation of improvements on the roads. Furthermore, the NRA prepares regional awareness campaigns and national campaigns in cooperation with The Danish Safety Council and the Police.

Estonia

The Road Safety Committee of the Government of the Republic of Estonia is the lead agency dealing with road safety.

Road safety activities are divided among different organisations. The Ministry of Economic Affairs and Communications (MEC) has the main responsibility for road safety, including the implementation and improvement of road traffic legislation and traffic safety programmes.

The Estonian Road Administration (ERA) is responsible for activities on analysis of the road safety situation, statistics, planning and assessment of road safety measures and risk factor analysis. The Estonian Motor Vehicle Registration Centre (MVRC) attends to all activities concerning driver licensing and motor vehicles. The ERA and MVRC are both state organisations under the administrative field of the MEC.

Finland

The Ministry of Transport and Communication is responsible for road safety.

Road safety work is carried out at national, regional and local level. The Consultative Committee on Road Safety is an advisory body to the Ministry of Transport and Communications, and it is responsible for preparing national strategies. The Consultative Committee is chaired by Ministry of Transport and Communications comprises representatives from all non-transport governmental bodies involved in road safety issues (The Ministry of Justice, Ministry of the Interior, Ministry of Education, Ministry of Social Affairs and Health, Ministry of the Environment), the Finnish National Road Administration, the road safety research community (Technical Research Centre of Finland, University of Tampere, University of Helsinki), main road-user organisations (Finnish Transport Workers Union, Central Organisation for Motor Traffic, Confederation of Finnish Industry and Employers) and other stakeholders (Association of Finnish Local and Regional Authorities, Central Organisation for Traffic Safety in Finland, Finnish Motor Insurers' Centre).

The State Provincial Offices coordinates the road safety work of municipalities, involving the cooperation of several sectors. This takes place through the Provincial Traffic Safety Committees, with representatives from key actors in the field. The traffic planning departments of the Provincial State Offices set the road safety goals for each province. They also make the plans for supporting and activating the road safety work and reporting on the work made in province to the Ministry of Transport and Communications.

Road safety work at local level is carried out by municipalities. It depends on the size and situation of the municipality whether the work is internal or in cooperation with several municipalities. The municipal road safety groups are responsible for organising, supporting and supervising the road safety work and ensuring that the work is carried out continuously.

The public roads are owned by the state and maintained by the Finnish Road Administration (FinnRa). FinnRa has the responsibility for the safety of public roads. FinnRa promotes road safety by planning transport systems in cooperation with other parties in the field. The principles of operation for improving

road safety is e.g. that FinnRa shall work actively to improve the safety of national, regional and local transportation systems.

France

The Inter-ministerial Road Safety Task Force is the lead agency dealing with road safety.

The Inter-ministerial Committee for Road Safety (CISR) is the overall decision-making body for road safety in France. The Committee is chaired by the Prime Minister with the objective of defining the government's road safety policy and to ensure its implementation. The Committee meets approximately twice a year to ensure the continuation of the progress. The inter-ministerial delegate for road safety (the Director of the Directorate for Road Safety and Traffic Department within the Ministry of Transport) acts as secretary to the CISR and coordinates the actions of the different ministries involved.

The National Inter-ministerial Road Safety Observatory is in charge of collecting, analysing and dissemination of road safety data from various ministries and reports directly to the inter-ministerial delegate. This includes continuous evaluation and monitoring of road safety problems and achievements at national level. The observatory also operates the secretariat of the National Road Safety Council (CNSR) responsible for conducting studies and making proposals to the Government on road safety. The National Road Safety Council is attended by all stakeholders (associations, administrations, etc.) concerned with road safety.

The Gendarmes under the Ministry of Defence act as road police for the rural road network and are therefore actively involved in the enforcement of road safety. The National Police Force under the Interior Ministry is responsible for local enforcement of road safety policies.

Germany

The Federal Ministry for Transport, Building and Housing (BMVBW) is responsible for road safety and the German Road Safety Council is the lead agency dealing with road safety.

BMVBW is responsible for the implementation and evaluation of the road safety programme. The Federal Transport Infrastructure Plan is a framework investment plan and therefore it does not contain any decisions regarding the funding and timing of projects in the Federal Transport Infrastructure Plan. These decisions are taken on the basis of the multi-annual plans.

By pursuing systematic road safety activities and introducing heavier fines, the Federal Ministry of Transport, Building and Urban Development is also tackling the main causes of accidents: speeding, tailgating, drink and drug driving.

In the future, road safety measures will continue to be geared towards exploiting the scope for reducing the number of accidents wherever this appears feasible. The Federal Ministry of Transport, Building and Urban Development will

continue to take pragmatic action in the interests of the public, in order to achieve optimum results without having road safety targets[35].

A separate role is played by the German Road Safety Council (DVR), which was founded in 1969 as a non-profit organisation. The objective of this organisation is to support measures aimed to improve the traffic safety of all road users. The main emphasis is on matters related to engineering, education, legislation and enforcement. DVR co-ordinates the various activities of its members, develops programmes and adapts them to new challenges and research-findings. DVR puts people and their education and information at the centre of its work.

Furthermore, the BASt (the Federal Highway Research Institute) is a technical and scientific institute responsible to the Federal Ministry of Transport, Building and Housing. Their scope of work is considerable, ranging from replying at short notice to incoming enquiries to the coordination and carrying out of research projects over a period of several years. A focal point of BASt's work is the formulation of specifications and standards applying to all fields of highway-related work. All these tasks are undertaken in close collaboration with the Road and Transportation Research Association, the German Institute for Standardisation (DIN), the German Institute for Construction Technology, the German Road Safety Council, competent state highway authorities, universities, associations and the highway industry.

The Police are responsible for enforcement, operational campaigns, collection and preliminary analysis of data.

Greece

The Ministry of Transport and Communications is responsible for road safety and the Inter-ministerial Committee on Road Safety is the lead agency dealing with road safety.

In Greece four ministries are directly involved in road safety at the central government level: the Ministry of Environment, Physical Planning and Public Works is responsible for the safe road environment, the Ministry of Transport and Communications responsible for the safety of the road user and safe vehicles, the Ministry of Public Order responsible for effective road safety enforcement, and the Ministry of Public Health and Social Welfare responsible for effective post-crash treatment. In addition, the Ministry of National Education and Religious Affairs, the Ministry of National Economy and the Ministry of Justice are directly involved in road safety issues, but to a lesser extent.

The authority responsible for the coordination of the implementation of the National Road Safety Strategic Plan is the Inter-ministerial Committee on Road Safety (ICRF) established in 1999, which monitors and coordinates all efforts, decisions and actions for the improvement of road safety at national level. It

[35] Homepage of The German Federal Ministry for Transport, Housing and Building (BMVBW): http://www.bmv.de/en/Transport/Roads/Road-safety-,2071.992075/Road-safety.htm

also has the responsibility for the promotion policy and the quantified monitoring of the road safety system. A council of road safety experts and a support mechanism provide continuous support to the ICRF. The Inter-ministerial Committee on Road Safety is chaired by the Minister of Public Order and its members include Deputy Ministers of Transportation, Internal Affairs, Economy, Public Works and Health.

The Ministry of Environment, Physical Planning and Public Works is involved in road safety issues through its General Direction of Transportation Projects. The General Direction of Transportation Projects includes a Road Safety Office (RSO) established in 1997. The RSO maintains a Traffic Accident Database, which includes analytical traffic accident data for the period from 1993 and up to date.

At regional level, all central decisions and actions on road safety are implemented by the General Directorates of the regions, the Prefectural Administrations and the local Traffic Police.

Hungary

Two ministries are in charge of road safety: the Ministry of Economic and Transports (GKM) and the Ministry of the Interior (BM) along with the National Police Headquarters (ORFK). The latter is the host organisation of the National Accident Prevention Committee (OBB) which is in charge of safety campaign activities. The Interministerial Committee for road safety is the lead agency dealing with road safety.

The maintenance and operation of the national public road network are carried out by the County Road Management Non-Profit Enterprises operating in each of the 19 counties of Hungary. Central tasks, including transport safety on the network, are carried out by the Directorate for the Coordination of Road Transport Affairs (UKIG), the State Road Technical and Information Non-Profit Enterprise (ÁKMI). The standards, technical regulations and guidelines on the national road area are issued by the Hungarian Road Association (MAUT). The State Motorway Managing Co. Inc. (ÁAK Rt.) is in charge of the management of the motorway network.

The Transport Science Institute (KTI) is engaged in the analysis of accidents, accident research and the preparation of the new national transport safety programme. KTI is a non profit institute organised under Ministry of Economy and Transport.

The police collect accident data on injuries and fatalities. These data are forwarded to the organisations working with the road network such as Directorate for the Coordination of Road Transport Affairs (UKIG), the State Road Technical and Information Non-Profit Enterprise (ÁKMI), and municipalities.

Ireland

Department of Transport is responsible for road safety and the Road Safety Authority is the lead agency dealing with road safety.

The Department of Transport has the general responsibility for the road safety policy. The Department of Transport is responsible for the overall policy and

legislation and for implementing the Government's road safety strategy and related policies for vehicle standards regulation, road haulage licensing, driver licensing and driver testing. Other organisations involved include the Department of the Environment, Heritage and Local Government, the Department of Justice, Equality and Law Reform, the Department of Health and Children, *An Garda Síochána* (i.e. the police force), the National Roads Authority, the National Safety Council, the Medical Bureau of Road Safety, the National Car Testing Service, the Irish Insurance Federation, the County and City Managers' Association, the High Level Group on Road Safety and the local authorities.

The Department of Transport chairs the High Level Group on Road Safety which was responsible for the preparation of the road safety strategy. The High Level Group on Road Safety is chaired by the Department of Transport and has representation from the National Safety Council, the National Roads Authority, the Irish Insurance Federation, the Garda National Traffic Bureau, the Department of Justice, Equality and Law Reform, the Department of the Environment, Heritage & Local Government, the Department of Health & Children, the Medical Bureau of Road Safety and the City and County Managers Association.

The High Level Group is mandated with responsibility for the development of the Road Safety Strategy and for monitoring its delivery. They also report on progress achieved in implementing strategies on an annual basis. They recommend policies for inclusion in the Irish Road Safety Strategy to the Minister for Transport, but ultimately it is the Minister who determines the policies to be included in the Strategy. The High Level Group meets 4-5 times a year.

The Road Safety Authority (RSA) is established to take a lead role in the area of road safety. The RSA is a body under the aegis of the Department of Transport.

Amongst the functions of the RSA are the promotion of road safety, research on accidents and road safety, driver testing and licensing, as well as establishing vehicle-related and other safe driving standards. The RSA is also responsible for monitoring progress of The National Road Safety Strategy (2007-2012).

The Police (*Garda Síochána*) are responsible for enforcement, operational campaigns and collection of road collision data.

The National Roads Authority is responsible for safer engineering of national roads, the analysis of road collision data, and research in relation to road safety, and maintenance of the National Road Safety Records Bureau.

The local authorities are responsible for a range of functions including maintenance of non-national roads (which comprises about 94 % of the total road network), supervision of authorised testers who carry out roadworthiness tests on goods vehicles and buses, and promotion of road safety at community level.

Italy

The Ministry of Infrastructure and Transport – through its Directorate for Road Safety which is part of the Department of Inland Transport - is the national

body responsible for road safety. The Department has competences to deal with both national and EU legislation and to launch road safety campaigns. The Department cooperates closely with the Ministry of Interior (in charge of police forces) and the local centres for control and monitoring of infrastructure and vehicles.

The Directorate for Road Safety is responsible for policy planning and coordination, issuing guidelines, using and analysing statistics. It has 9 regional departments which include regional observatories.

The National Road Safety Committee (Comitato Nazionale per la Sicurezza Stradale) is an inter-ministerial body in charge of outlining the overall road safety strategy and guidelines to be followed by national and regional authorities, as well as the Road Safety Advisory Board (Consulta Nazionale per la Sicurezza Stradale).

The Road Safety Advisory Board is composed of all stakeholders including national, regional and local authorities, NGOs, professional associations (private companies, road and transport operators). The board meets approximately twice a year to discuss what is required to implement the governmental guidelines and advice/feed-back on road safety issues. The organisational structure of the Advisory Board includes a smaller secretariat.

Istat is the Italian Statistical Office body responsible for collecting road safety statistics at the national level.

Implementation is largely decentralised; thus it is the responsibility of regional and local authorities to implement the road safety strategy and action plans. There is room for regional bodies to go beyond the national strategy and implement additional rules, according to particular requirements. Regional and local centres receive a percentage of collected fines in revenue, as well as direct national funding.

Latvia

The Ministry of Transport has the general responsibility for road safety and the Road Traffic Safety Council is the lead agency dealing with road safety.

Road safety at national level is the responsibility of the Minister of Transport who is the Chairman of Road Safety Traffic Council. The Council includes representatives from other ministries and interested organisations and acts as an advisory body on state policy on road safety and on the coordination of road safety activities[36].

Other organisations involved are the Ministry of the Interior, the Ministry of Education, the Ministry of Health, the National Road Safety Council, the police force and the local authorities. The National Road Safety Council is chaired by the Minister of Transport. The Council includes representatives from other ministries and interest groups and acts as an advisory body on state policy on road

[36] Road Traffic Research, Ltd. at http://www.csizpete.lv

safety and on the coordination of road safety activities. The Safety Council manages 2% of the financial resources from third party insurance. The Road Traffic Safety Directorate provides secretarial services for the National Road Safety Council.

The Ministry of Transport – "Latvian State Roads" is responsible for the state roads. As part of the Ministry of Transport, the Road Traffic Safety Directorate (CSDD) is responsible for vehicle registration, vehicle technical inspection, driver training and testing, campaigns to change the behaviour of roads users, road audits, maintenance of a road accident database and analyses of accident data.

The Ministry of the Interior including the State Police (Road Police) is responsible for enforcement of infringements by road users and for reporting and investigating accidents.

Lithuania

The Ministry of Transport and Communications is in charge of road safety and the State Traffic Safety Commission is the lead agency dealing with road safety.

The State Traffic Safety Commission operates permanently and has the responsibility for monitoring the implementation of the state policy in the field of road safety. Members of this Commission are representatives of state administrations, municipalities and non-governmental organisations. The Head of the Commission is the Minister of Transport and Communications.

There are three levels in Lithuanian road safety structure. The first and highest level involves the Government of the Republic of Lithuania and the Traffic Safety Commission. The second level is the ministerial level; the Ministry of Transport and Communications, the Ministry of the Interior, the Ministry of Social Welfare and Labour, the Ministry of Health Care, municipalities and other ministries. The third level is an executive level to which all institutions under the ministries belong. Among the most important are the Traffic Supervision Service, the Lithuanian Road Administration under the Ministry of Transport and Communications, and the State Road Transport Inspectorate at the Ministry of Transport and Communications. The road safety organisation system also involves the media, non-governmental organisations, universities and scientific research institutes. The Government is responsible for drafting the State road safety policy.

The Ministry of Transport and Communications is responsible for state policy on road safety. Two of the ministry's subdivisions are the Lithuanian Road Administration and The State Road Transport Inspectorate. The most important activities of the ministry in ensuring road safety are: Preparation and implementation of legal acts regulating road safety, road safety information to the public, road safety assurance on Lithuanian state roads, driver education and technical inspections.

The Traffic Safety Department is part of the Ministry of Transport and Communications. Regarding road safety, this department has the formal responsibil-

ity for formation and implementation of the policies of road safety and transport of dangerous goods. Furthermore, it takes part in determination of requirements for vehicles/means of transportation, prepares road traffic safety programmes and controls their implementation, participates in setting qualification requirements for bus and motorcycle drivers, as well as the requirements and terms for driver training enterprises, coordinates the preparation work of draft documentation for the Traffic Safety Commission, controls the effectuation of adopted resolutions, and participates in educational activities.

The Ministry of the Interior comprises the Traffic Police Supervision Service as one of its most important subdivisions with responsibility for enforcement. The Traffic Police is a branch of the Police which enforces road traffic rules. The police is nationally organised under the Ministry of the Interior.

Luxembourg

The Ministry of Transport has the overall responsibility for road safety in Luxembourg, and collaborates closely with the Police who, besides enforcement of road safety (together with the Ministry of Justice) provide data and information.

Other governmental bodies involved in road safety include:

- The Ministry of the Interior: co-ordination of legislation and regulations.
- The Ministry of Public Works: road traffic department (responsible for road infrastructure and road signing)
- The Ministry of Public Health: responsible for emergency aid for traffic accident victims
- The Ministry of Education: awareness courses on road safety in primary and secondary schools.

Malta

The Malta Transport Authority (MTA) is the main responsible for road safety. The responsibility of the MTA is to improve co-ordination between the Transport Ministry's existing departments that deal with road transport, i.e. Roads Department, Public Transport Authority, Traffic Control Board and Licensing and Testing Department and to clearly delineate road transport functions and responsibilities between the new Authority and other government bodies of other Ministries. It also creates a competent Authority with general overall responsibility for road transport planning, regulation and policy making.

The departments of the MTA most involved in road safety matters are the Roads Directorate, the Licensing and Testing Directorate, the Public Transport Directorate, the Traffic Management Directorate and the Transport Strategy Directorate. A Road Safety Committee is part of the Malta Transport Authority, with the primary task to produce the Road Strategy Plan for Malta. The compilation of police data on road traffic accidents is also a task of the MTA.

The Malta Police Force (especially the Traffic Section), together with the local wardens, is the main enforcement body in the field of road traffic. The Malta Police Force is the body to which the responsibility for the collection of data related with accidents involving personal injuries is assigned.

Local councils are responsible for the provision and maintenance of proper road signs and road markings in conformity with national and international standards, and for the maintenance of parking areas. Local councils can also make proposals to, and where applicable be consulted by, any competent authority prior to making any changes in traffic schemes directly affecting the locality.

Netherlands

The Ministry of Transport, Public Works and Water Management is responsible for road safety and Directorate-General Passenger Transport, Road Safety Division is the lead agency dealing with road safety.

The Ministry of Transport is responsible for road safety policy and legislation, although the actual implementation of legislation and policy decisions is decentralised; the provinces draft regional plans in order to support achievement of the national targets. The Ministry of Transport has overall responsibility for road safety legislation and responsibility for the provision, operation and maintenance of the highway network.

The Ministry of Transport issues the National Traffic and Transport Plan (NVVP) where road safety targets are set.

The provinces and the municipalities (WGR/Inter-municipal co-operation) translate and implement the national guidelines and targets into their Regional Traffic and Transport Plans (RVVP). The regional bodies are in charge of road safety. At this level, the Regional Road Safety Agencies (ROV) have been established since 1994 (De-centralisation Agreement), with the purpose of establishing a systematic approach to road safety. This is based on mutual coordination with institutions and organisations within the region concerned. Measures at local levels are planned and implemented by the Municipalities and local Water Control Authorities.

Norway

The Ministry of Transport and Communication is responsible for road safety and the Road Safety Committee is the lead agency dealing with road safety.

In Norway road safety work is organised in three levels: national, regional and municipality levels.

The Ministry of Transport runs the road safety work through the National Transport Plan. The Road Safety Committee evaluates the road safety work.

Other bodies involved in road safety are the Norwegian Public Roads Administration, the National Police Directorate, the Directorate for Health and Social Welfare, and the Norwegian Council for Road Safety.

Several of the regions have got their own political Road Safety Committees where also the road administration, the Council for Road Safety and the police take part.

Most of the Municipalities have made Road Safety Action Plans.

Poland

The Ministry of Infrastructure is responsible for road safety and The National Road Safety Council is the lead agency dealing with road safety.

The National Road Safety Council was established in 1993 in response to an alarmingly high level of road accidents. The Council is an inter-ministerial body that aims to improve road safety. The tasks of the Council are e.g. to recommend a state policy on road safety and to develop and appraise road safety programmes. Other tasks include international cooperation, working with social institutions and NGOs which promote road safety, road safety education, publicity and promotion campaigns and monitoring and evaluation of road safety activities.

The secretariat of the Council is located in the Ministry of Infrastructure. It has representatives of each of the sixteen regions, the so-called voivodships, as well as representatives from the main institutions and ministries, as well as the church. There are also Regional Road Safety Councils in the sixteen regions.

For the police the responsibility for road safety is mainly with the regional Chiefs of police while the National police board retains the right to launch national schemes and co-ordinate international actions.

Portugal

The Ministry of Internal Affairs is responsible for road safety. The National Council for Road Safety is the body which coordinates the institutions that intervene in the various components of road safety. It is chaired by the Minister of Internal Affairs. The Council integrates the Chiefs of the Police Forces (Public Security Police (PSP) and National Republican Guard (GNR)), the Directorate-General for Traffic (DGV) the Directorate-General for Land Transport (DGTT), the Director of the General-Directorate of Health, the President of EP Public Business-Related Entity (Portuguese Roads), The President of the Portuguese Insurance Institute, The President of the National Service of Civil Protection, The President of the National Institute of Medical Emergency and the President of the National Fire Service.

The Directorate-General for Traffic (DGV), which is integrated in the Ministry of Internal Affairs, is responsible for the administration of the traffic system and road safety, as well as for analysing and implementing operational measures and regulations for traffic enforcement.

The Directorate-General for Land Transport (DGTT) which is integrated in the Ministry of Transports and Public Works has the mission of promoting the development of the road transport system and to ensure its operation, satisfying the mobility and accessibility needs with suitable levels of efficiency and quality. It should also assure the articulation and co-ordination of the road sector with the remaining modes and collaborate in definition of the global policies for the road transport system.

Traffic law enforcement is carried out by the Public Security Police (PSP), which acts in major urban areas, and the National Republican Guard (GNR), which is in charge of law enforcement on the Portuguese road network and mi-

nor roads outside urban areas, covering all towns and villages where PSP is not present.

Romania

The Interministerial Council for Road Safety (CISR) has according to GRSP[37] (Global Road Safety Partnership) a consultative role on road safety matters and makes road safety policy suggestions to the Government and government agencies. However, it does not have a mandate or budget to ensure the implementation of the recommendations it makes. It is located in the Romanian Transport Authority (ARR) and chaired by the Vice-Minister of Transport.

The Traffic Police (Ministry of Administration and Internal Affairs) is responsible for enforcing traffic laws, implementing public education and information campaigns on road safety and crash reporting. The National Company for Motorways and national Roads NCMNR is responsible for safety conditions on the national roads.

Slovakia

The Ministry of Transport, Posts and Telecommunications is responsible for road safety and the Road Safety Council is the lead agency dealing with road safety.

Road safety is treated as a problem for the entire society in Slovakia and a road safety council was established. The Council is chaired by Minister of Transport, Posts and Telecommunications. Members are e.g. State Secretary of the Ministry of the Interior, Ministry of Finance, Ministry of Defence, Ministry of Justice, Ministry of Education, Ministry of Health, Ministry of Environment, Ministry of Constructions and Regional Development, Police Force, Council Secretary and heads of working groups in the Council.

The Council's work is carried out in different working groups including:

- road vehicle safety
- road communication safety
- transport education and awareness
- health education and transport psychology
- road safety legislation
- analysis of road accident causes
- supervision of road safety and road traffic flows
- promotion in the media.

Road accident statistics are monitored, recorded and analysed by the Police Headquarters of the Ministry of Interior of the Slovak Republic. Basic data about road safety statistics are given from the Police Headquarters to the Traffic Safety Department of the Slovak Road Administration.

The Traffic Safety Department of the Slovak Road Administration is responsible for preparing annual statistics and analyses of "black spots" and statistics

[37] http://www.grsproadsafety.org/page-romania-32.html#Facts

on motorways as well the rest of the road network. The results of the analyses are reflected into road safety measures.

Slovenia

The Ministry of the Interior is responsible for Road Safety and the Inter-ministerial Working Group on Road traffic Safety is the lead agency dealing with road safety.

A board of ministries (Interior, Transport, Finance, Education and Health) has been set up to address road safety policy. This board is coordinated by the Road Safety Council.

The Slovene Road Safety Council does not directly fall under the jurisdiction of any ministry. It is the body responsible for prevention and road safety education. The Council performs developmental, counselling and expert tasks in the field of prevention and educational activities, analytical research activities and other tasks connected with road safety, and it takes care of the coordination of implementing the national road safety program.

The tasks of the Council include taking care of the coordination of implementing road safety programmes that require cooperation of state agencies, local communities, different organisations, society and experts. It takes care of cooperating in the policy-making process in the road safety field as well as cooperating with research and educational institutions, economic organisations and associations, state agencies and individual scientific workers and experts, clubs and associations working in the fields important for road safety. Additionally it helps local road safety councils with their work.

The Ministry of the Interior plays a strong role in road safety. Police tasks are focused on limiting speed, dealing with the problems of drink-driving, warning drivers to wear seat belts, behaviour of pedestrians, cyclists and young drivers, as well as monitoring serial road traffic offenders.

Spain

The Ministry of Interior, General Directorate of Traffic is responsible for road safety and the Inter-Ministerial Commission for Road Safety is the lead agency dealing with road safety.

In 1997 the Spanish government created the Inter-Ministerial Commission for Road Safety, which is the highest government body with competences and decision making powers on road safety, with two objectives: 1) to define the national policy on road safety, with the participation of all ministries with direct and indirect competences in the matter; and 2) to ensure the application of such policies through the involvement of all stakeholders. In the beginning of 2005, the composition of the Inter-Ministerial Commission for Road Safety was modified, and now consists of:

- President: The minister of the Presidency of the Government (first vice-prime minister)
- Nine ministers from: Internal Affairs, Public Works (MFOM), Justice, Education, Industry, Social Affairs, Tourism and Commerce, Agriculture and Fisheries, and Public Health

- Twelve General Directors of the more directly involved departments of the nine ministries.

The Inter-Ministerial Commission for Road Safety is supported by a consultative commission, the Superior Council for Traffic and Road Safety. This Council was created as a supporting body in terms of policy definition and consultative functions to the Inter-Ministerial Commission for Road Safety. The composition is very similar to that of the Inter-Ministerial Commission, but the members have a more technically oriented background. The Superior Council has technical attributions in the definition of policies and instruments. The Inter-Ministerial Commission is a decision-making body (mainly political) with decision-making powers over the budgets of several ministries on issues concerning road safety. The Superior Council also integrates other administrations and private stakeholders involved in road safety.

The main ministries involved in road safety support and improvement are the Ministry of Internal Affairs through the General Directorate for Road Traffic (*DGT)*, and the Ministry of Transport and Public Works (*MFOM)*, through the General Directorate for Roads (*DGC)*. These two bodies are responsible for road traffic law enforcement and road safety on the national road network.

The DGT has its equivalents in Catalonia and the Basque Country, where the regional governments have assumed competences of road traffic control, traffic law enforcement and road safety. In terms of coordination, the Superior Council for Traffic and Road Safety is the forum where the DGT and its Basque and Catalonian equivalents share visions and projects on road safety. Regarding more specific coordination actions, the three bodies collaborate in several areas; collection of traffic and accident statistics, information campaigns, road checks and enforcement actions.

Sweden

The Ministry of Industry, Employment and Communication (MIEC) is responsible for road safety. The Swedish Road Administration is the lead agency dealing with road safety.

The Swedish Road Administration (SRA) is the national authority assigned the overall sectorial responsibility for the entire road transport system. The SRA issues road standards and supplies the road sector with relevant information to support the daily work. The latest findings and policies for road safety are very important aspects of this work. Furthermore, other ministries and subordinated agencies also issue directives related to road safety.

The other main bodies active in road traffic safety are the Police and local authorities (counties and municipalities). Important parties are also the National Society for Road Safety (NTF), with its member organisations, and transport organisations. The Group for National Road Safety Co-operation (GNS) is a central body that coordinates co-operation between the SRA, the local authorities and the Police. The NTF is an additional member of this group.

Switzerland

The Federal Roads Agency (FVS) is the lead agency dealing with road safety.

FVS is a public body that promotes and co-ordinates actions for the improvement of traffic safety and the reduction of the consequences of accidents. The FVS is also one of the most important financial source for the support of all the actions in thee area of traffic safety.

The Swiss Council for Accident Prevention (bfu) is a private foundation that provides safety advice to local authorities, institutions, and individuals. bfu covers safety concerns related to roadways, sports venues, and housing, compiling statistics about accidents in these areas and then publishing safety recommendations related to road safety for schools, protective equipment for sports, and structural engineering. The foundation also runs a helpline that answers queries from companies and the public.

In addition, bfu works with several partners at federal, cantonal, and local government levels, and also with national institutions, international research agencies, and trade organizations. These relationships are essential to collating and evaluating accurate data and to establishing safety guidelines for a variety of customers.

The Swiss council for road safety (CRS) is an interest group for traffic safety with participation of motorist associations, federal, cantonal and municipal institutions and administrations. It promotes with appropriate means an increased sensibility for the dangers of road traffic[38].

United Kingdom

The Department for Transport is the lead agency dealing with road safety.

National road safety policy is the responsibility of the Department for Transport (DFT). The current Road Safety Strategy that came into force in 2000 sets the national framework for policies up to 2010. Local authorities have a statutory duty to ensure safety on the roads for which they have responsibility. Targets are set at national level, and local authorities set their own targets in their Local Transport Plans, consistent with national targets. Programmes are funded by national and local taxes. The DfT is also responsible for the evaluation of the road safety programme.

Local authorities are responsible for local safety engineering schemes and road safety education, in accordance with national regulations and best practice guidance.

The Road Safety Advisory Panel (RSAP) was set up in 2000 to help the government take forward the Road Safety Strategy and to review progress. Chaired by the Road Safety Minister, the panel has members representing some of the main stakeholder bodies.

38 The Swiss Road Portal. http://www.swissroads.ch/en

The Police are responsible for enforcement. In Northern Ireland the Department of the Environment (DOE) has the overall lead of implementing the road safety strategy.

2.5 Other road safety actions

This section will briefly describe the actions carried out by the different countries on road safety including:

- Enforcement.
- Engineering.
- Communication and education.
- Road victims.

2.5.1 Legislation and Enforcement

This section presents the actions on legislation and enforcement on some of the key areas:

- Speed.
- Alcohol.
- Seatbelts.
- Helmets.

Enforcement of especially speed, alcohol, and seatbelt use is together with awareness campaigns important tools to reduce the number of fatalities on the roads of Europe. While many Member States have comparable legislation there a big differences in the enforcement of the rules. An ETSC report[39] on enforcement shows that even though some improvements have happened on enforcement there still is more to do as summarised in Table 6.

Since the first assessment was made ETSC[40] has assessed that some countries have improved their enforcement on speed, especially France, Finland, Spain and Sweden. More countries are introducing automatic speed cameras and some are testing section control (e.g. Netherlands).

On seatbelts wearing and child restraint systems the legislation has changed in most countries giving enforcers a further challenge to control taxis and assess size of children for the right restraint system[40]. The tendency is that seatbelt wearing is increasing.

[39] Traffic Law Enforcement across the EU - An Overview, ETSC

[40] Traffic Law Enforcement across the EU - Time for a directive, ETSC

Table 6 Performance on enforcement of speed, drink driving and seatbelt wearing in EU25 according to ETSC. (Source: ETSC[39])

Country	Speeding	Drink driving	Seatbelt use	Penalty point system
Austria	***	***	***	Yes
Belgium	***	***	***	No
Bulgaria	Not available	Not available	Not available	Not available
Cyprus	*	***	*	Yes
Czech Republic	*	***	***	Yes
Denmark	***	***	***	Yes
Estonia	*	***	*	No (planned)
Finland	*****	*****	***	No
France	***	***	***	Yes
Germany	***	***	*****	Yes
Greece	*	***	*	Yes
Hungary	*	***	*	Yes
Ireland	***	*	***	Yes
Italy	*	***	*	Yes
Latvia	*	***	*	Yes
Lithuania	*	***	*	Yes
Luxembourg	***	***	***	Yes
Malta	***	*	***	Yes
Netherlands	*****	***	***	No
Poland	-	-	***	Yes
Portugal	***	*	***	No
Romania	Not available	Not available	Not available	Not available
Slovakia	*	***	*	No
Slovenia	***	***	***	Yes
Spain	*	*	****	Yes
Sweden	***	***	*****	Yes
United Kingdom	***	***	*****	Yes

***** good, ***is improving, * need to do more

In many countries the number of checks on drink driving has increased significantly (Finland, Sweden, France, Greece, Slovenia) and the Netherlands, and Ireland has introduced random breath testing in it legislation[40].

Most Member States have introduced a penalty point system. The countries who have not yet introduced such system include Belgium, Estonia, Netherlands, Portugal, Slovakia and Finland.

Handling of sanctions

France and Netherlands have successfully introduced a centralised system to handle the many (several million) fines from e.g. automatic speed enforcement. This has be done be appointing a central public prosecutor dealing with road traffic offences.

ETSC[40] gives an example for the Netherlands where the introduction of the new administrative law enforcement system led to a shift in workload from the already overworked police and prosecution offices of the county courts to the Central Fine Collecting Agency (CJIB). Many offences (e.g. low speeding and seat belt offences) are regarded as small which can be dealt with administratively without going to the court system. Furthermore the CJIB collects fines once a court has fined an accused person for more serious traffic offences, such

as driving under the influence of alcohol or excessive speeding. In this instance the Public Prosecutor's Office sends the particulars of the case to the CJIB, which then collects the fines in question. In 2005, 10.9 million administrative sanctions for traffic offences were turned over to the CJIB. A total of 85% were dealt with fully automatically and were paid at once, whereas about 5% where paid after the second request. In comparison: in 1990, the first year of the CJIB's existence, 250,000 administrative sanctions were turned over to the CJIB; in 2005, 7.96 million fines were charged for speeding. This increase has also been the result of intensive police surveillance, especially along motorways[40].

Another example is France[40] which introduced automatic speed enforcement to combat the common non-compliance with speed limits. Since then, the manual processing of each fine notification has been replaced by computerised processing. A national processing centre, run by the Ministry of Interior, was set up in 2004 in order to process the fines issued by all automatic control equipment according to a standardised procedure.

Other Member States with a central prosecutor system include Spain and Germany and with the increased use of automatic speed enforcement in the Member States more may introduce similar systems.

Speed

An overview on the legislation on speed limits and respondents assessment of effectiveness of enforcement of speed is shown in Table 7.

In all countries - apart from Germany - speed limits are set at national level, however, local speed limits are possible in most countries. In Germany the speed limits are set by the Länder. In most countries legislation on speed differs according to vehicle type, e.g. for heavy good vehicles.

Table 7 Overview of speed legislation and enforcement.

	Speed limits are set at a national level	Speed limits can also be set at other levels than national level	Legislation differs by vehicle type	Maximum speed			Effectiveness of overall enforcement (respondent consensus) (Scale 0-10)
				On urban roads (km/h)	On rural roads (km/h)	Motorways (km/h) (from ERSO)	
Austria	Yes	Yes	Yes	50	100	130	7
Belgium	Yes	Yes	Yes	50/30	90/120	120	5
Bulgaria	Yes	Yes	Yes	50	90	130	6
Cyprus	Yes	Yes	No	50	80	100	6
Czech Republic	Yes	Yes	Yes	50	90	130	5
Denmark	Yes	Yes	Yes	50	80	110/130	7
Estonia	Yes	Yes	No	50	90	-	6
Finland	Yes	Yes	Yes	40/50	80/100	100/120	7
France	Yes	Yes	Yes	50	90/110	130	7
Germany	No	Yes	Yes	50/30	100	130	7
Greece	Yes	Yes	Yes	50	90	130	6
Hungary	Yes	Yes	Yes	50	90	130	4
Ireland	Yes	Yes	Yes	48	97	97	no consensus
Italy	Yes	Yes	Yes	50	90/110	130	7
Latvia	Yes	Yes	Yes	50	90	-	7
Lithuania	Yes	Yes	Yes	50	90	110/130	6
Luxembourg	Yes	Yes	Yes	50	90	130	3
Malta	Yes	No	Yes	50	80	-	5
Netherlands	Yes	Yes	Yes	30/50/70	80/100	120	no consensus
Norway	Yes	Yes	Yes	30/50/70	80	100	6
Poland	Yes	Yes	Yes	50/60	90/100/110	130	5
Portugal	Yes	Yes	Yes	50	90	120	8
Romania	Yes	Yes	Yes	50	90/110	130	5
Slovakia	Yes	Yes	Yes	60	90	80/130	7
Slovenia	Yes	Yes	Yes	10/30/50	90/100	130	7
Spain	Yes	Yes	Yes	50	90/100	120	8
Sweden	Yes	Yes	Yes	50	70	110	5
Switzerland	Yes	Yes	Yes	30/50	80	120	7
United Kingdom	Yes	Yes	Yes	32/48	97/112	112	no consensus

Source: Global Status Report on Road Safety[41], For Denmark from national sources, Luxembourg (from Traffic Law enforcement across the EU, ETSC, ERSO. The column on "Effectiveness of overall enforcement" is generally from the "Global Status Report on Road Safety". Some Member States (Luxembourg, Denmark and Germany) did not take part or answered during this work. For these countries national experts have been asked and where available replies have been used. (http://ec.europa.eu/transport/road_safety/glance/index_en.htm), Note: In Germany the speed limits are set by the Länder.

[41] Global Status Report On Road Safety - Time For Action, World Health Organization (WHO), 2009

The speed limits are generally between 100 km/h and 130 km/h on motorways. Some countries, e.g. France have lower speed limits during rain and other during winter time, e.g. in Latvia.

On non-built-up, non-motorway roads the speed limit is generally between 80 km/h to 100 km/h. Sweden has a lower speed limit at 70 km/h and several countries allow 110 km/h-120 km/h if the directions are separated and several lanes per direction. In built-up areas the speed limit is generally close to 50 km/h. In Slovakia the general speed limit is 60 km/h. Local speed limits in built-up areas can be higher than the general speed limit and some countries also use lower speed limits, e.g. at schools at 30km/h to 40 km/h.

The respondents were in the WHO[41] report asked to reach a consensus on their assessment of the enforcement in the country. In most countries the effectiveness of speed enforcement was assessed as medium (4-6) while only Spain and Portugal rated it rather high (8 out of 10).

Improved enforcement of speed is an important tool to reduce the number of fatalities. However, reduced speed may also influence on e.g. health and environmental policies though lower emissions and noise levels.

Alcohol

An overview on the legislation on alcohol and respondents assessment of effectiveness of enforcement of drink driving is shown in Table 8.

There is a national law on drink driving in all countries. All countries use blood alcohol concentration (BAC) and most use breath content to detect alcohol levels.

The BAC limits are generally up to 0.05 g/dl in most countries. Some countries, e.g. Malta, Ireland and United Kingdom still have a high limit at 0.08 g/dl while some new Member States have limits at 0.0 g/dl.

A third of the countries have lower limits for novice drivers and professional/commercial drivers.

Where registered the proportion of road traffic deaths that are attributable to alcohol is rather high in many countries - up to 20%-40%.

Most countries use random breath testing for enforcement where motorists may be stopped by the police and checked on their alcohol consumption without any suspicion. This is not the case for Germany, Malta and the UK. The respondents were in the WHO[41] report asked to reach a consensus on their assessment of the enforcement in the country. In most countries the effectiveness of drink driving enforcement was assessed as medium (4-6) while Czech Republic, Austria and Slovakia rated it rather high (9 out of 10). Respondents from Belgium rated enforcement rather low at 3.

Table 8 Overview of alcohol legislation and enforcement.

	How drink-driving is defined					National maximum legal BAC levels			
	National Drink-Driving Law	Blood alcohol concentration (BAC)	Breath content	Random breath testing for enforcement	Effectiveness of overall enforcement (respondent consensus) (Scale 0-10)	For the general population (g/dl)	For young or novice drivers (g/dl)	For professional or commercial drivers (g/dl)	Proportion of road traffic deaths that are attributable to alcohol (%)
Austria	Yes	Yes	Yes	Yes	9	0,05	0,01	0,01	8,1
Belgium	Yes	Yes	Yes	Yes	3	0,05	0,05	0,05	-
Bulgaria	Yes	Yes	Yes	Yes	7	0,05	0,05	0,05	4,7
Cyprus	Yes	Yes	Yes	Yes	4	0,05	0,05	0,05	18
Czech Republic	Yes	Yes	-	Yes	9	0,00	0,00	0,00	3,4
Denmark	Yes	Yes	Yes	Yes	8	0,05	0,05	0,05	16
Estonia	Yes	Yes	Yes	Yes	8	0,02	0,02	0,02	48
Finland	Yes	Yes	Yes	Yes	8	0,05	0,05	0,05	23,9
France	Yes	Yes	Yes	Yes	4	0,05	0,05	0,02 bus	27
Germany	Yes	Yes	Yes	No	4	0,05	0,00	0,00	12
Greece	Yes	Yes	Yes	Yes	7	0,05	0,02	0,02	7,2
Hungary	Yes	Yes	Yes	Yes	5	0,00	0,00	0,00	-
Ireland	Yes	Yes	Yes	Yes	no consensus	0,08	0,08	0,08	37
Italy	Yes	Yes	Yes	Yes	7	0,05	0,05	0,05	no consensus
Latvia	Yes	Yes	-	Yes	7	0,05	0,02	0,05	20,6
Lithuania	Yes	Yes	-	Yes	6	0,04	0,02	0,02	11,7
Luxembourg	Yes	Yes	Yes	Yes	5	0,05	0,02	0,02	-
Malta	Yes	Yes	Yes	No	4	0,08	0,08	0,08	-
Netherlands	Yes	Yes	Yes	Yes	no consensus	0,05	0,02	0,05	25
Norway	Yes	Yes	Yes	Yes	4	0,02	0,02	0,02	20-30
Poland	Yes	Yes	Yes	Yes	7	0,02	0,02	0,02	14
Portugal	Yes	Yes	-	Yes	8	0,05	0,05	0,05	31,4
Romania	Yes	Yes	Yes	Yes	8	0,00	0,00	0,00	1,5
Slovakia	Yes	Yes	Yes	Yes	9	0,00	0,00	0,00	4,3
Slovenia	Yes	Yes	Yes	Yes	6	0,05	0,00	0,00	38,4
Spain	Yes	Yes	Yes	Yes	7	0,05	0,03	0,03	-
Sweden	Yes	Yes	Yes	Yes	6	0,02	0,02	0,02	20
Switzerland	Yes	Yes	-	Yes	6	0,05	0,05	0,00	16
United Kingdom	Yes	Yes	-	No	no consensus	0,08	0,08	0,08	17

Source: Global Status Report on Road Safety - Time For Action[41], For Denmark from national sources, Luxembourg (from Traffic Law enforcement across the EU, ETSC), The column on "Effectiveness of overall enforcement" is generally from the "Global Status Report on Road Safety". Some Member States (Luxembourg, Denmark and Germany) did not take part or answer during this work. For these countries national experts have been asked and where available replies have been used. TISPOL, (https://www.tispol.org/node/3447), ERSO (http://ec.europa.eu/transport/road_safety/glance/index_en.htm)

Seat-belts

An overview on the legislation on seat-belts and child restraints and respondents assessment of effectiveness of enforcement is shown in Table 9. There is

- as there is an EU directive - a national law on seat-belts and child restraints in all countries. The law applies and is enforced on all occupants in all countries.

Table 9 Overview of seatbelt legislation and enforcement.

	Seat-belts					Child restraints	
	There is a national seat-belt law	The laws applies to all occupants	Enforcement is applied to the following occupants	Effectiveness of seat-belt law enforcement (respondent consensus) (Scale 0-10)	National seat-belt wearing rate	There is a national child restraint law	Effectiveness of child restraint law enforcement (respondent consensus) (Scale 0-10)
Austria	Yes	Yes	All occupants	7	89% front, 49% rear	Yes	9
Belgium	Yes	Yes	All occupants	3	79% front, 46% rear	Yes	6
Bulgaria	Yes	Yes	All occupants	8	-	Yes	4
Cyprus	Yes	Yes	All occupants	7	81% front, 9% rear	Yes	3
Czech Republic	Yes	Yes	All occupants	8	90% front, 89%rear	Yes	7
Denmark	Yes	Yes	All occupants	7	91% front, 71% rear	Yes	7
Estonia	Yes	Yes	All occupants	7	90% front. 68% rear	Yes	8
Finland	Yes	Yes	All occupants	7	89% front, 80% rear	Yes	7
France	Yes	Yes	All occupants	8	98% front, 85% rear	Yes	5
Germany	Yes	Yes	All occupants	7	95-96% front, 88% rear	Yes	6
Greece	Yes	Yes	All occupants	7	75% front, 42% rear	Yes	6
Hungary	Yes	Yes	All occupants	4	71% front, 40% rear	Yes	4
Ireland	Yes	Yes	All occupants	no consensus	86% front, 63% rear	Yes	no consensus
Italy	Yes	Yes	All occupants	7	65% front, 10% rear	Yes	7
Latvia	Yes	Yes	All occupants	7	77% front, 32% rear	Yes	6
Lithuania	Yes	Yes	All occupants	6	-	Yes	5
Luxembourg	Yes	Yes	All occupants	7	-	Yes	7
Malta	Yes	Yes	All occupants	8	96% front, 21% rear	Yes	6
Netherlands	Yes	Yes	All occupants	no consensus	94% front, 73% rear	Yes	no consensus
Norway	Yes	Yes	All occupants	6	93% front, 85% rear	Yes	9
Poland	Yes	Yes	All occupants	7	74% front, 45% rear	Yes	6
Portugal	Yes	Yes	All occupants	9	86% front, 28% rear	Yes	8
Romania	Yes	Yes	All occupants	5	-	-	-
Slovakia	Yes	Yes	All occupants	8	-	Yes	9
Slovenia	Yes	Yes	All occupants	7	85% front, 51% rear	Yes	6
Spain	Yes	Yes	All occupants	8	89% front, 69% rear	Yes	7
Sweden	Yes	Yes	All occupants	3	96% front, 90% rear	Yes	2
Switzerland	Yes	Yes	All occupants	7	86% front, 61% rear	Yes	8
United Kingdom	Yes	Yes	All occupants	no consensus	91% front, 84-90% rear	Yes	no consensus

Source: Global Status Report on Road Safety[41], For Denmark from national sources, Luxembourg (from Traffic Law enforcement across the EU, ETSC). The column on "Effectiveness of overall enforcement" is generally from the "Global Status Report on Road Safety". Some Member States (Luxembourg, Denmark and Germany) did not take part or answer during this work. For these countries national experts have been asked and where available replies have been used. Compared to the other countries, the figure for effectiveness for Sweden is very low. According to Swedish Road Administration (February 2010), the use of seat belts is very high but enforcement of seat belt use and especially child restraint systems is very low in Sweden even though they are among the best performing countries with regard to road safety.

Where registered the wearing rate of seat-belts on the front seat is generally more than 80%. The lowest wearing rate is found in Italy and Hungary. The seat-belt wearing rate on the rear seat varies more. Some countries have more than 80% while e.g. Italy and Cyprus has a wearing rate close to 10%.

The respondents were in the WHO[41] report asked to reach a consensus on their assessment of the enforcement in the country. In most countries the effectiveness of enforcement on seat-belt wearing was assessed as over medium (6-8) while Portugal rated it rather high (9 out of 10). Respondents from Sweden and Belgium rated enforcement rather low at 3.

In most countries the effectiveness of enforcement on child restraints was assessed as over medium (6-8) while Austria and Slovakia rated it rather high (9 out of 10). Respondents from Sweden and Cyprus rated enforcement rather low at 2-3.

Helmet

An overview on the legislation on motorcycle helmets and respondents assessment of effectiveness of the enforcement is shown in Table 10.

There is a national law on motorcycle helmet in all countries. The law applies to all users including driver, adult and child passenger and all roads in the Member States. There are exceptions to the helmet law in several countries.

There are motorcycle helmet standards in almost all Member States apart from Latvia and Lithuania.

Where registered the wearing rate of motorcycle helmet is generally more than 90%. The lowest wearing rate is found in Greece, Italy and Cyprus.

The respondents were in the WHO[41] report asked to reach a consensus on their assessment of the enforcement in the country. In most countries the effectiveness of enforcement on helmets was generally assessed as high (8-9). Respondents from Sweden rated enforcement rather low at 1 in the WHO report [41], which has been confirmed by a national expert even though they are among the best performing countries with regard to road safety. This could indicate that they have rated themselves more severely than other countries.

Table 10 Overview of motorcycle helmet legislation and enforcement.

	The law applies to the following road users				Exceptions to law					
	There is a national helmet law	Drivers	Adult passengers	child passengers	There are exceptions to the helmet law	The helmet law applies to all road types	The helmet law applies to all engine types (low and high powered engines)	Effectiveness of overall enforcement (respondent consensus) (scale 0-10)	There are helmet standards	Estimated national helmet wearing rate (%)
Austria	Yes	Yes	Yes	Yes	Yes	Yes	Yes	9	Yes	95
Belgium	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	Yes	-
Bulgaria	Yes	Yes	Yes	Yes	No	Yes	Yes	7	Yes	-
Cyprus	Yes	Yes	Yes	Yes	Yes	Yes	Yes	5	Yes	68
Czech Republic	Yes	Yes	Yes	Yes	No	Yes	Yes	9	Yes	97
Denmark	Yes	Yes	Yes	Yes	Yes	Yes	Yes	6	Yes	-
Estonia	Yes	Yes	Yes	Yes	No	Yes	Yes	9	Yes	-
Finland	Yes	Yes	Yes	Yes	Yes	Yes	Yes	9	Yes	95
France	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7	Yes	95
Germany	Yes	Yes	Yes	Yes	No	Yes	Yes	6	Yes	97
Greece	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7	Yes	58
Hungary	Yes	Yes	Yes	Yes	No	Yes	Yes	9	Yes	95
Ireland	Yes	Yes	Yes	Yes	No	Yes	Yes	no consensus	-	-
Italy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7	Yes	60
Latvia	Yes	Yes	Yes	Yes	No	Yes	Yes	6	no	93
Lithuania	Yes	Yes	Yes	Yes	No	Yes	Yes	6	no	-
Luxembourg	Yes	Yes	Yes	Yes	Not available	Yes	Yes	8	-	-
Malta	Yes	Yes	Yes	Yes	No	Yes	Yes	9	no	-
Netherlands	Yes	Yes	Yes	Yes	Yes	Yes	no	no consensus	Yes	92
Norway	Yes	Yes	Yes	Yes	No	Yes	Yes	9	Yes	100
Poland	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	Yes	-
Portugal	Yes	Yes	Yes	Yes	No	Yes	Yes	9	Yes	-
Romania	Yes	Yes	Yes	Yes	No	Yes	Yes	6	Yes	90
Slovakia	Yes	Yes	Yes	Yes	No	Yes	Yes	8	Yes	-
Slovenia	Yes	Yes	Yes	Yes	No	Yes	no	7	Yes	-
Spain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	Yes	98
Sweden	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	Yes	96
Switzerland	Yes	Yes	Yes	Yes	Yes	Yes	Yes	9	Yes	100
United Kingdom	Yes	Yes	Yes	Yes	Yes	Yes	Yes	no consensus	Yes	98

Source: Global Status Report on Road Safety[41] , For Denmark from national sources. The column on "Effectiveness of overall enforcement" is generally from the "Global Status Report on Road Safety". Some Member States (Luxembourg, Denmark and Germany) did not take part or answer during this work. For these countries national experts have been asked and where available replies have been used. Compared to the other countries, the figure for effectiveness for Sweden is very low. According to Swedish Road Administration (February 2010), the enforcement of helmet use is very low in Sweden even though they are among the best performing countries with regard to road safety.

2.5.2 Engineering

The following sections briefly provide an overview of the recent actions taken on infrastructure in the Member States.

Audits and inspection

Many countries have already introduced formal road safety auditing of new roads, however 12 countries have still not introduced a formal system as seen in Table 11. Similar 9 countries are not using regular road safety inspection of existing roads. With the introduction of the new road safety infrastructure directive this will soon change as countries will need to introduce a formal road safety and inspection system in 2010 for the Ten-T road network.

Directive 2008/96/EC of 19 November 2008[42] introduces a comprehensive system of road infrastructure safety management. It addresses new road infrastructure projects or substantial modifications to the existing network which affects the traffic flow within the TEN-T road network and existing roads. The directive focuses on four activities:

- road safety impact assessment
- road safety audit
- ranking of high accident concentration sections and network safety ranking
- safety inspection.

This Directive applies to roads which are part of the Ten-T road network, whether they are at the design stage, under construction or in operation. Member States may also apply the provisions of the directive to national road transport infrastructure, not included in the trans-European road network, that were constructed using Community funding in whole or in part.

EuroRAP

Several of the Member states are also assessing their existing roads according to the EuroRAP assessment methodology. Risk mapping is the preparation of coloured maps showing the risk of e.g. deaths and injured road users divided in to individual risk and community risk. This has been carried in 11 Member States and Switzerland as shown in Table 11. The EuroRAP style assessment of the roads is focused on addressing 4 types of accidents generally accounting for more than 80 percent of fatalities on non-urban roads namely; head on collisions, single-vehicle accidents, intersection collision and accidents involving vulnerable road users. Roads are assessed according to:

- how well the medians are treated (separation of directions);
- the design standard and frequency of intersections;
- how well the road sides are protected and how the edge of the carriageway is treated; and
- the availability of facilities for pedestrians and cyclists.

[42] Directive 2008/96/EC Of The European Parliament And Of The Council of 19 November 2008 on road infrastructure safety management

The road is given a score between 1 (lowest) and 4 (highest score) for each of the four elements, and the scores aggregated to produce a 'risk rating' or 'star rating' for the roads. If available the four elements are weighted according to the distribution of fatalities on rural roads among the four elements. Five Member States and Switzerland have had their road network risk rated as shown in Table 11.

Table 11 Overview of engineering actions.

	Formal audits on new roads	Regular inspections on existing roads	EuroRAP assessment	Other recent improvements/actions
Austria	No	Yes	RM	Improvement of level crossings Road safety programmes at regional and local level fro rural roads Black spot treatment, Road safety inspection Improve tunnel safety Avoiding ghost drivers Improvement of urban road safety management
Belgium	No	No	RM	Management of road safety is decentralised
Bulgaria	Yes	Yes	-	Black spot signs
Cyprus	No	Yes	-	Upgrading existing roads with e.g. guardrails, signs markings, paving shoulder Improving black spots Traffic calming schemes Improve pedestrian facilities
Czech Republic	No	No	RM	New traffic warning and information signs introduced. Research on safer road infrastructure Wide introduction of traffic calming measures More use of 30 km/h zones More motorways and bypasses of cities Reconstruction of junctions Improvement of level crossings Separation of vulnerable road users from motorised traffic
Denmark	Yes	no	-	Research risk analysis by transport modes and age groups Black spot treatment and grey section analysis Traffic calming Requirement of safety zone in new road standards Avoiding ghost drivers
Estonia	No	Yes	-	Identification of black spots Reconstruction of dangerous crossings, intersections and sections Mount safety barriers
Finland	Yes	Yes	-	Major improvement in infrastructure Research on long term development programme for road safety
France	Yes	No	-	Improve infrastructure based on regional plans for safety improvements Improve safety in tunnels has been in focus
Germany	No	Yes	SR	Building new highways - improved standards Focus on improvement of safety of rural roads - 2 lane roads Removal of black spots Consider safety in planning More use of 30 km/h zone
Greece	Yes	-	-	Some road safety inspection carried out - not formal system Implement programme to improve road surface, road signage, intersections and remove road side hazards
Hungary	No	Yes	-	New motorways Increased use of roundabouts Improve railway crossings Redesign of pedestrian crossings
Ireland	Yes	Yes	RM+ SR	Research on exposure risk on regional and local roads Upgrading Ten-T network
Italy	Yes	Yes	RM	Annual black spot work
Latvia	Yes	Yes	-	Some black spot work Reconstruction of junctions
Lithuania	Yes	Yes	-	Reduced speed limits at dangerous locations Black spot analysis
Luxembourg	Not	Not avail-	-	New guidelines for protection barriers

	Formal audits on new roads available	Regular inspections on existing roads able	EuroRAP assessment	Other recent improvements/actions
Malta	No	No	-	Traffic calming Junction upgrading
Netherlands	No	No	RM+ SR	Guidelines on road safety infrastructure measures (roundabouts, speed bumps, 30 km/h zones, schools zones etc.) Segregated traffic lanes in tunnels Improvement of safety rural and urban roads, e.g. double lane marking filled with green and continuous line at shoulder
Norway	Yes	Yes	-	Not available
Poland	Yes	Yes	RM	Black spot works Improvement of country roads - including inspection
Portugal	No	No	-	Improve safety for vulnerable road users
Romania	Yes	Yes	-	Not available
Slovakia	Yes	Yes	RM	Black spot identification and improvement Traffic calming Improving signing and marking Grade separate crossings
Slovenia	No	No	-	Black spot improvement
Spain	Yes	Yes	RM+ SR	Black spot specific actions Signalling of black spots on main network Road safety master plan for built up areas to inspire local authorities Building new highways Improve junctions
Sweden	No	No	RM+ SR	Improvement of urban roads for pedestrians and cyclists Establish roads with median barrier Section improvements Traffic calming
Switzerland	Yes	Yes	RM+SR	Not available
United Kingdom	Yes	Yes	RM	Treating worst black spots Traffic calming schemes Infrastructure improvements Publish guidance on engineering for safer roads Research on 20 m/h zone - evaluation Research on speed choice and road environment
RM=Risk Mapping, SR=Star Rating				

Source: Global Status Report on Road Safety - Time for Action[41], For Denmark from national sources, EuroRAP[43], IRTAD[44], Country profiles[29].

As indicated in Table 11 most Member States continue to improve the infrastructure with regard to road safety. Many countries continue to do black spot work and traffic calming is widely used including the introduction of 30 km/h zones. Focus is in many countries also on rural road improving e.g. signing and marking, junctions, etc.

2.5.3 Communication and education

Generally countries in the EU are active in the field of road safety campaigns and in many countries there is cooperation between road authorities/ministries of transport and the police. Table 12 provides an overview of the activities carried out by the Member States.

[43] http://www.eurorap.org/

[44] IRTAD Annual Report 2009, International Traffic safety Data and Analysis Group, OECD, International Transport Forum, 2009

Table 12 Overview of actions on communication and education.

Country	Communication and education
Austria	Theoretical and practical training as well as theoretical tests are obligatory for moped licence candidates of all ages. The possibility of riding a moped without any licence at age 25 or over was suspended. A moped licence can be obtained starting at age 15 Information brochure " safety on the road - child safety in cars" Campaigns on restraints systems BOB campaigns (alcohol)
Belgium	Regular campaigns on drink driving (on “Bob” the designated driver and on speed, seat belts, mobile phones) Responsible young drivers Campaign on child restrain systems Traffic education for the elderly
Bulgaria	Isolated campaigns e.g. few nationwide campaigns about use of safety belts in connection with the school start after vacation
Cyprus	Twice yearly campaigns on seatbelt (rear), speeding and drink driving Education of school children
Czech Republic	Annual nationwide campaigns on drink driving, speeding and seat belts The Ministry of Transport and the traffic police jointly launched the campaign “Safe Holiday 2009” The Designated Driver Campaign “Let´s agree” targeting young drivers was successfully continued. A new safety campaign, “If you don’t think, you will pay”, was initiated to target the most dangerous behaviours (aggressive driving, drinking and driving, speeding and failure to wear seat belts). Permanent attention is devoted to child safety education. The programme “Safe road to school” is widely accepted. The Multimedia project “The Action” targeting secondary school students was extended. A contest for elementary school pupils “Safe on the roads” was organised in October. BESIP (Road Safety) Teams are acting in each region trying to develop local safety public activities.
Denmark	Several targeted campaigns carried annually, e.g. on speeding, speed on motorways, speed at work zones, drink driving and seatbelts. Cooperation with road authorities, safety council, police. Campaigns always accompanied by police enforcement.
Estonia	Campaigns on drink driving and seatbelts Training programmes for school children Training programmes for adults - TV programmes
Finland	Annual campaigns on drink driving, and occasionally on seatbelts and speed. Campaigns on young drivers (speeding, seatbelts) Campaign on "Safety consists of small acts" - encourages users to take responsibility.
France	Several drink driving campaigns Speed campaigns (e.g. near work, risk of speed, etc.) Campaigns on seatbelt use Vacation campaign Road safety education of children
Germany	Carrying out nation-wide safety campaigns (“Gelassen läufts” and “Runter vom Gas”) Intoxicated driving: "BOB"-campaign Campaigns ion seatbelts and alcohol in combination with enforcement Public awareness campaigns, including bank holiday promotional campaigns, information and awareness material for motorcyclists, information talks for the elderly, information on cycling for children and development of course material for a junior cycle road safety resource
Greece	Special awareness campaigns "On the Road" on seatbelts, helmets, speed and drink driving. Campaigns scarcely used.

Country	Communication and education
Hungary	Information on speed checks, alcohol is before enforcement campaigns Campaigns on seatbelts
Ireland	Campaigns to increase general awareness of speeding, drink driving, daytime running lights, seat belt use, and driver fatigue Distribution of over 500 000 high visibility jackets and armbands to the public Education measures on: - the use of high visibility material for pedestrians, cyclists and motorcyclists - awareness of intoxicated pedestrians - awareness of blind spots on heavy vehicles Pre-primary school road safety education Primary school road safety education: “Be Safe” aimed at children aged 5-12; “Seatbelt Sheriff” aimed at those aged 7-9; “Streetwise” aimed at those aged 12-15 Community education programme aimed at the elderly.
Italy	Campaigns on drink driving Campaigns to introduce new penalty system (seatbelt, helmet, alcohol and speeding)
Latvia	Campaigns on speed, and at holidays, etc. Education of school children Campaigns on road safety in darkness
Lithuania	Education of school children Campaigns on seatbelt and drink driving
Luxembourg	Monthly campaigns on e.g. speed, alcohol, seat belts, helmets combined with enforcement Campaigns targeted young road users
Malta	Awareness campaigns on seatbelts and alcohol
Netherlands	Regular campaigns for seat belts, child restraints, and drunk driving Educational campaigns to prevent blind spot crashes Information campaign on fatigue Safety campaigns targeted professional transport Annual drink driving campaigns, with enforcement Speed campaigns combined with enforcement
Norway	Not available
Poland	Campaigns by different institutions on speeding, alcohol, seat belts Road safety exam for school children
Portugal	National wide campaigns on alcohol and seat belt Road safety education for school children • Contest “Growing in safety”, targeted at kindergartens • Production and distribution of 500,000 “road education booklets” • Safety for all campaign for primary schools
Romania	Not available
Slovakia	Campaigns on drink driving, seatbelts, speed limits, first aid, etc.
Slovenia	“Fasten your life!” - promotion of seat belt usage. “40 days without alcohol” - awareness about alcohol abuse. “Hurry slowly!” - Occasional week-long campaigns intended to increase awareness on speeding. “Pedestrian” - to increase general pedestrian safety “Do not overlook!” - increase two-wheeler safety Stop! Life has precedence” - better road safety on rail and interchange crossings.
Spain	Combined campaigns and police enforcement on speeding, use of mobile phones, use of helmets, use of seat belts and alcohol. Promotion of non-alcoholic beer: 10% of consumption is now non-alcoholic.

Country	Communication and education
	Promotion of designated drivers.
	Specific campaigns for the use of helmets in the south of Spain
	Information campaigns - changed legislation
	Peak traffic campaign (holiday)
Sweden	Campaign "Don't drink and drive"
	Seatbelt wearing campaigns
	Information campaign on speed cameras
Switzerland	Seat belt campaign. See http://www.sicherheitsgurt.ch/indexflash.html
	Campaign on driver assistance systems was launched. http://www.auto-iq.ch/
	A new campaign on speeding was launched t (Road Safety Fund). See http://www.slow-n-easy.ch/
United Kingdom	Two new THINK! road safety campaigns
	Campaign on drink driving, speed and child restraint
	Campaign on texting while driving.
	Drug driving campaign.
	"Don't drive tired" campaign
	Drink and drive campaigns in Northern Ireland

Source: IRTAD[44], Country profiles[29], ETSC[39, 40],

The most common campaigns are on speed, seatbelts and alcohol. Some countries also focus on helmets and young drivers.

Not all countries do have regular campaigns in e.g. Bulgaria and Greece campaigns are scarcely used and in Lithuania campaigns are found to have a limited value.

2.5.4 Road victims

The SafetyNet[45] study compares how road victims have been dealt with in the Member States. The countries were e.g. assessed with regard to availability of Emergency Medical Services (EMS) stations, availability and composition of EMS medical staff, availability and composition of EMS transportation units, characteristics of the EMS response time and availability of trauma beds in permanent medical facilities. More detail is provided in Appendix 1.14.

The countries were assessed in combination of these factors to measure a country's overall performance for trauma management. The assessment of the trauma management systems' performance in the countries are presented in Appendix 1.14 and summarised below:

- Germany and Austria are consistently rated a high level of the trauma management system's performance;
- Bulgaria, Slovakia, Czech Republic, Norway and the United Kingdom are rated a relatively high level of the trauma management system's performance;

[45] Vis, M.A. and Eksler, V. (Eds.) (2008) Road Safety Performance Indicators: Updated Country Comparisons. Deliverable D3.11a of the EU FP6 project, SafetyNet

- Lithuania, Denmark, Latvia, Belgium, Cyprus, Estonia and Hungary are rated a medium level of the trauma management system's performance, because for all these countries some differences were observed between the different rankings;
- Malta, Finland, Sweden and Poland are characterised by a relatively low level of the trauma management system's performance;
- Greece and the Netherlands are consistently rated low level of the trauma management system's performance.

3 Results of Consultations

This section presents the process of the consultation, and the results and main conclusions of the consultation process including the internet consultation, stakeholder workshop and results of the technical workshops. The summary reports are found in Appendix 2 to 4.

3.1 Consultation process

Stakeholder consultation towards the development of the next EU road safety action programme 2011-2020 was carried out by the European Commission between July and December 2009.

This consultation comprised a series of six thematic workshops and an internet consultation and culminated in a stakeholder conference on 2nd December, 2009 as illustrated in Figure 18.

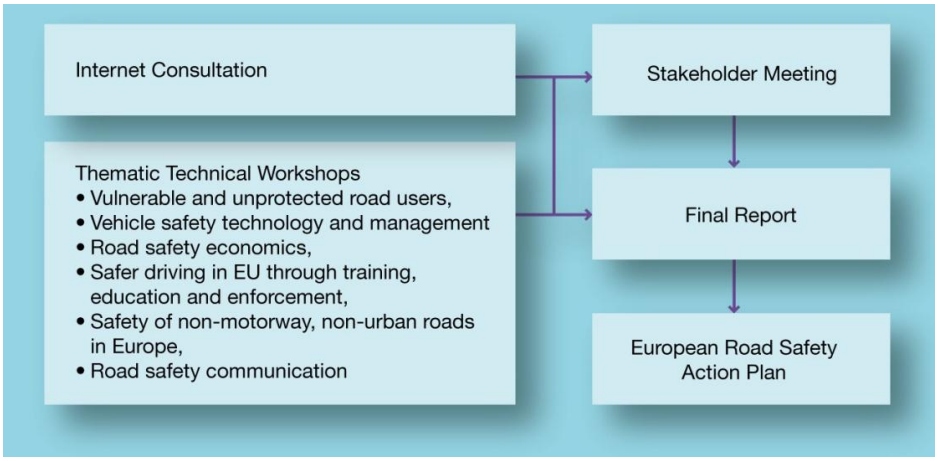

Figure 18 Consultation process

Thematic workshops

As part of the consultation process, six thematic workshops were arranged:

- Vulnerable and Unprotected road users 15.07-2009
- Vehicle Safety Technology and Management 03.09-2009
- Road safety economics 07.09-2009
- Safer driving in EU through training, education and enforcement 18.09-2009
- Safety of non-motorway, non-urban roads in Europe 22.09-2009
- Road safety communication 01.10-2009.

Technical presentations from various stakeholders and international organisations were invited by the European Commission. Delegates comprised stakeholders organisations, policy and research experts.

Internet consultation

The internet consultation was launched on 25th September 2009 to run online for eight weeks until 20th November 2009. The objective was to engage European citizens, governmental stakeholders at national, regional and local levels, business and professional sectors, in identifying the:

- Key road safety problems to be addressed by the European RSAP for the period 2011 – 2020.
- Priority actions to address the unacceptable and costly levels of road death and serious injury across the EU.

Stakeholder conference

The stakeholders conference that took place on 2 December 2009, presented the results of the public consultation process (thematic workshops and Internet consultation) aimed at generating input for the preparation of the next European Road Safety Action Programme for the period 2011-2020.

The results of the consultation process should provide an overview of key problems and identify priority actions which could be implemented at EU, national, regional, and local levels. The recommended actions should have a positive impact on road safety and public health while also improving mobility, energy, the environment and the economy.

3.2 Results of thematic workshops

Six thematic workshops were carried out between July and October 2009. The workshops comprised a major element of the stakeholder consultation on the development of the next road safety action programme 2011-2020. Workshop themes, technical presenters and delegates were identified by the European Commission. The themes were:

- Vulnerable and unprotected road users.
- Vehicle safety technology and management.
- Road safety economics.
- Safer driving in EU through training, education and enforcement.
- Safety of non-motorway, non-urban roads in Europe.
- Road safety communication.

The objective of the workshops was to engage stakeholders in review key road safety issues identified by the Commission and to identify stakeholder recommendations for action at EU, national and local levels for inclusion in the next road safety action programme (2011-2020). It is noted that in some of the workshops, the majority of specific recommendations identified by participants were addressed to the European Union.

Technical presentations from various stakeholders and international organisations were invited by the European Commission. Delegates comprised stake-

holder organisations, policy and research experts who received copies of a background document, the technical presentations and the workshop report. An overview of the aims, key problem areas and actions discussed, conclusions and priority recommended actions is outlined for the main areas discussed in each of these six workshops.

3.2.1 Vulnerable and unprotected road users

The workshop on the road safety of vulnerable and unprotected users was held on July 15, 2009 in Brussels, attended by around 30 delegates representing a range of safety, user and industry groups and policy makers.

The issue

Walking and cycling are modes of travel which are increasingly recommended for general health and well-being. However, the risk of being killed in traffic per kilometre travelled is more than 9 times higher for pedestrians than for car occupants and more than 7 times higher for cyclists than for car occupants[46].

The median age of the European population is by 2060 projected to be more than 7 years higher than today. Elderly drivers are not so much a risk to others, but may be at risk themselves. The frailty of some elderly people makes them vulnerable to personal injury or fatality in the event of a crash[47]. As a result, older drivers have a relatively high fatality rate, but their injury rate is much lower. Taking the distances travelled into account, the fatality rate for car drivers is more than 5 times higher for those aged 75 years and over than for the average for all ages, whereas their injury rate is two times higher.

Almost all countries have experienced an increase in the number of motorcycles in recent years, again at various rates. The increase is stronger for older motorcycle riders. While the number of road user deaths has declined considerably in the past decade in EU countries the number of fatally injured powered two wheelers (PTW) riders rose in 13 out of 27 countries. For powered two wheeler users, the risk of being killed in traffic on the basis of distance travelled is 18 times higher than for car drivers for EU countries.

Why address this issue

To address the trends and problems described above the European Commission decided to hold a workshop on the road safety of vulnerable and unprotected road users.

Objective of workshop

The objectives of the workshop were to discuss who we mean by vulnerable and unprotected road users and whether or not further definition would be helpful for future road safety work; to identify the key road safety problems involv-

[46] ETSC (2003a) Transport Safety in the EU a statistical overview, Brussels, Belgium

[47] New transport technology for older people; Summary and Conclusions of the Symposium on Human Factors of Transport Technology for Older Persons. OECD (2004)

ing these users and the interventions which are likely to reduce deaths and serious injuries and, finally, to identify priority actions at EU, national, regional and local level which provide the best opportunities to achieve these reductions and which can be included in the next EU Road Safety Action Programme 2011-2020.

Main conclusions and recommendations

A range of road safety problems were highlighted and are discussed below. Conclusions and recommendations for action for each area are outlined.

Definition of vulnerable and unprotected road users?

Vulnerable and unprotected users can be seen as comprising pedestrians, cyclists, powered two-wheeler users, children, young novice drivers, older drivers and riders, and drivers with reduced mobility, though there was no agreement on a useful definition for this group. It was important, however, to be clear which groups were being included when the term 'vulnerable road user' is used.

Harmonisation of classification of serious and minor injury

There was unanimity about the need for harmonised definitions of serious and minor injury – the urgent one being 'serious injury' – in order to improve comparison of data among Member States. The important role of the health sector in recording computerised data on road traffic injury was highlighted.

Recommendation for action:

- *The EU together with the Member States should develop and adopt a common definition of 'serious injury'.*
- *The health sector at EU and national levels should ensure that computerised data on road traffic injury is collected and published.*

Exposure data

Exposure data plays an important role in defining the risk of different road user groups and there was a need for more survey data to be collected across the EU.

Recommendations for action:

- *The EU and Member States should fund surveys of exposure data where necessary.*

High numbers and risks of death and serious injuries to vulnerable user groups

The high numbers and risk of serious and fatal injuries faced by pedestrians, cyclists, young novice drivers, children, older users and powered two wheeler users are significant and in some European countries still increasing. Emerging road safety problems e.g. motorized scooters and the vulnerability of an ageing population needed to be taken into account in future road safety policies. The safety needs of such users are being given insufficient attention in the design and operation of the traffic system across Europe. The workshop highlighted the urgent need to implement current knowledge and identify future solutions to reduce exposure to the risk of death and serious injury, to prevent serious and fatal crashes; to mitigate the severity of injury when crashes occur and to reduce the consequences of injury.

Recommendation for action:

- *The EU and Member States should address the high numbers and risk of serious and fatal injuries faced by pedestrians, cyclists, young novice drivers, children, older users and powered two wheeler users by implementing evidence-based approaches and identifying future solutions to reduce exposure to the risk of death and serious injury, to prevent serious and fatal injury; to mitigate the severity of injury when they occur and to reduce the consequences of injury.*

Long term goals and interim quantitative targets

The need for a results-focused approach was highlighted by several participants. There was general support for a *Safe System* goal and framework supported by interim quantitative targets to improve the safety of vulnerable and unprotected users. *Safe System* addresses human vulnerabilities and provides an integrated approach between infrastructure, vehicle and user as well as the opportunity to align with broader policy issues. The EU has a leadership role to play in advancing a *Safe System* approach. This would require an integrated approach on the part of different policy areas such as transport, infrastructure, the vehicle sector, justice, health and education, as well as a range of different multi-sectoral system-wide intervention.

Recommendation for action:

- *The EU and Member States should adopt Safe System as the long term vision and goal for road safety.*
- *The EU should set interim quantitative targets to 2020 to reduce road user deaths and serious injuries.*

High-level championing

The need for political leadership and championing at a high-level was highlighted in government, the business sector and civil society. Substantial reductions in casualties had, for example, been achieved in France due to the high-level promotion of enforcement and publicity.

Recommendations for action:

- *The EU and Member States should ensure that political leadership and championing of effective road safety activity is carried out.*

Coordinated governance

In order to achieve tangible results in improvement of road safety, actions must be better coordinated and integrated across different levels of governance at EU, national, regional and local levels. While actions at these levels will differ, they must be complementary in order to optimize effort and resource.

Recommendations for action:

- *The EU and Member States should work to improve coordination between EU, national and local levels in implementing the next road safety action programme.*

Funding

The workshop highlighted the need for EU funding for a wide range of activity. The EU should support the training of road safety professionals and knowledge transfer, develop new tools to build capacity for road safety management; fund best practice guidelines, surveys and databases, as well as provide funding to roll out effective road safety programmes and demonstration projects at national level.

Recommendations for action:

- *The EU should fund a wide range of effective activity and support the training of road safety professionals and knowledge transfer, develop new tools to build capacity for road safety management; fund best practice guidelines, surveys and databases, as well as provide funding to roll out effective road safety programmes and demonstration projects at national level.*

Legislation

The need for a range of harmonised activity at EU level on licensing, training and testing, enforcement, vehicle and infrastructure standards to improve vulnerable and unprotected user safety was underlined in the workshop. Specific examples are highlighted below.

Recommendations for action:

- *Further harmonisation is essential at EU level as well as actions in the Member States to improve standards of licensing, training and testing, vehicles, infrastructure and enforcement, to improve vulnerable and unprotected user safety.*

Increasing knowledge and transferring knowledge

Research was emphasised as an important element. Increased research in road safety issues was essential to further knowledge about causes, effects and remedies and how to achieve results. However, increased research in itself was insufficient. There was a need for better use and wider implementation of research results to use and benefit from the knowledge generated to date. At the EU level it is important to create a cadre of professional support for road safety.

Recommendations for action:

- *Further support for research and knowledge transfer is essential at EU level which should include support for the development and implementation frameworks for new safety technologies, the development and promotion of best practice guidelines e.g. on speed management, urban safety management etc. and professional training.*

Key safety principles: Speed management, separation of dangerous mixed use and crash protection

The important role of speed management which address human tolerance thresholds was emphasised several times during the discussions as a key factor in road safety. The importance of separation, wherever possible, of dangerous mixed traffic at speeds above human tolerance thresholds was also highlighted. Route planning was also emphasised as a key element in improving road safety. Crash protective roadsides and aspects of vehicle design which better reflect human tolerance thresholds were needed. These included occupant restraints and crash protection which take better account of women and older people, and car crash protection which benefit users inside and outside of the vehicle. Much more could be done to improve further on these and other areas of crash protection. These safety principles, while benefiting all if taken up, are of particular importance for vulnerable and unprotected users.

Recommendations for action:

- *The EU and Member States should promote the take up of key safety principles in EU and national policies and programmes to improve the planning, design and operation of road infrastructure and vehicles.*

Planning, design and operation of the road network

Current deficiencies in the road infrastructure were highlighted such as inappropriate speed limits, dangerous roadside objects, and lack of separated facilities. Network planning and infrastructure countermeasures to create a safer system, for vulnerable and unprotected road users were much discussed taking into

account the safety design principles highlighted above. The elements of the TEN-T Directive – safety impact assessment, safety audit and safety inspection needed to be promoted more widely by the EU for the rest of the road network. The need to access EU funding for safety engineering development and demonstration projects was highlighted. A range of authoritative best practice guidelines on safety engineering was needed. Member States needed to set 30km/h limits in residential areas and the EU should promote this and a range of other actions related to speed management.

Recommendations for action:

- *The EU and Member States should ensure that account is taken of the needs of vulnerable and unprotected road users in the planning, design and operation of road infrastructure.*
- *The EU and Member States should apply the safety engineering elements of the TEN-T Directive safety impact assessment, road safety audit and road safety inspection - for all road network. The EU should play a role in developing technical standards in road safety engineering which address vulnerable road user needs e.g. crash barriers for use in high-risk locations.*
- *The EU should encourage Member States to set appropriate speed limits (such as 30km/h limits in residential areas) and to remove loopholes in automatic speed camera enforcement practices.*
- *The EU should support demonstration projects of innovative safety engineering and develop best practice guidelines e.g. for speed management and urban safety management.*

Vehicle and safety equipment

Improvements in vehicle design and safety equipment were also noted e.g. under-run protection on trucks; improved pedestrian and other vulnerable user protection in EU car design and the importance of the recent European New Car Assessment Programme changes in star ratings; an EU standard for motorcycle crash helmets and an EU safety rating system for crash helmets for powered two wheelers was mentioned. The importance of power-to-weight ratio in power two wheeler engine performance and anti-tampering devices was noted as was the fact that a new legislative framework was being established for advanced braking systems. There was support for the use of Intelligent Speed Adaptation in urban environments and for the promotion of user conspicuity through use of lights and retro-reflective clothing. The introduction of daytime running lights on motor vehicles needed to be monitored.

Recommendations for action:

- *The EU should develop further and adopt/promote take up of harmonised standards for HGV under run protection, safer car fronts for pedestrians and other vulnerable road users; limiting power to weight ratio for powered two wheelers and anti-tampering harmonisation; and the use of ISA in urban areas.*
- *The EU should establish an EU standard and an EU-wide crash protection rating for powered two wheeler crash helmets.*
- *The EU and Member States should promote user conspicuity e.g. use of lights and retro-reflective clothing and monitor the impact of day time running lights.*

Enforcement

The workshop highlighted the importance of enforcing speed limit rules for all motor vehicle users as well as the need to remove loopholes with regard to

automatic speed enforcement practices which inhibit the apprehension of speeding motorcyclists. The importance of red light cameras was also noted.

Recommendations for action:

- *The EU should encourage Member States to enforce appropriate speed limits nationally and across borders (such as 30km/h limits in residential areas) and to remove loopholes in automatic speed camera enforcement practices.*

Training

For all target groups training could contribute to increase awareness and improve abilities to comply with rules and requirements for different user groups. However, it was emphasised that despite belief in the value of training, training was just one of many measures and without evidence, to date, of an impact on crash and injury reduction for the normal driving population. The type of training was also discussed, as was the need to evaluate potential impacts in the research programme. The need for training and re-training for older powered two wheeler riders and for the use of new technologies was highlighted. Concern was raised regarding the use of e-learning and it was emphasised that this is just one of many forms of training and could not constitute a stand-alone system.

Recommendations for action:

- *The EU should develop standards of training for all target groups to increase awareness and improve compliance with requirements for different user groups, although the lack of evidence, to date, on the impact of training on crash and injury reduction for the general driving and riding population. Towards this end EU should determine through international review and research what improvements need to be made to improve the safety impact of driver and rider training within the licensing and testing package.*

Emergency medical system response

Some brief discussion involved first aid training, the need to measure and reduce emergency medical response times and the need to implement eCall.

Recommendations for action:

- *The EU and Member States should encourage the measurement of emergency medical response and take up of eCall.*

Please note that further information on this workshop is available in the Workshop Background Paper, Report and Appendices. The summary report is attached in Appendix 3.1 of this report.

3.2.2 Vehicle safety technology and management

The workshop on vehicle safety technology and management was held on September 3, 2009 in Brussels, attended by around 30 stakeholder, policy and research experts.

The issue

EU road casualty statistics (CARE, 2007) show that half of all fatalities are occupants of cars while pedestrians and motorcyclists each constitute 15-20%. These casualty groups determine the priorities for further reductions in total casualties.

Why address issue

To address the problems described above the European Commission decided to hold a workshop on vehicle safety technology and management. The workshop addressed two specific issues concerning continuous compliance with safety requirements and a vehicle information platform as well as the much broader issues concerning the further development of vehicle safety requirements over the next decade.

Objective of workshop

The Commission's objective for this workshop was to engage stakeholders in discussion of two specific issues concerning continuous compliance with safety requirements and a vehicle information platform, as well as the much broader issues concerning the further development of vehicle safety requirements over the next decade. The aim was to identify priority actions at EU, national, regional and local level which provide the best opportunities to achieve these reductions and which can be included in the next EU Road Safety Action Programme 2011-2020.

Main conclusions and recommendations

Maintaining the safety level of vehicle during its life

The high level of vehicle safety achieved when the vehicle is put into service needs to be maintained throughout its lifetime. The workshop noted that the safety performance of vehicles can deteriorate significantly during their life on the roads. The level of defects has not changed significantly over the years, despite improvements in vehicle quality and the level of defects, though comparatively low, increases significantly with the age of a vehicle. If these problems are to be addressed then the enforcement of roadworthiness needs to become more effective. It was also noted that the growing use of electronically controlled systems increases the importance of maintaining vehicles' conditions throughout their lifetime.

Continuous compliance

The Workshop supported the principle of a system of "continuous compliance" to address these problems.

The further development of post-sale technical inspections was also supported as was the extension of inspection to powered two wheelers as well as improvements in the inspection of electronic systems. It was concluded that On Board Data should be available for inspection and should be developed to provide information on the operation of electronic systems. Inspection protocols needed to be reviewed in relation to higher speed conditions relating to more severe collisions. It was also found important that the level of inspection should evaluate the performance of each vehicle against the requirements of the regulations that it is approved to rather than against generic standards as is the case in many Member States currently.

However, there was also acknowledgement that Member States will need to be convinced that increased testing (including roadside inspections) results in reduced number of killed and seriously injured on the roads.

Recommendations for action:

- *The EU should support research using in-depth investigations to define the relevance of inspection to road safety.*
- *The EU should develop procedures to identify technical performance data for individual vehicles.*
- *The EU should include powered two-wheelers in vehicle inspections.*
- *The EU should develop methods to inspect electronic systems (presence and efficiency of system) for safety and improve availability of OBD (on board diagnostics).*
- *The EU should review inspection protocols in relation to higher speed conditions relating to more severe collisions and review technical inspection intervals.*

Vehicle information platform

The installation of a system of "continuous compliance" also requires the establishment of a system which provides technical information for single vehicles. Such a system would comprise linkage between national databases: for registration, for roadworthiness testing and for end of life certificates databases at national level and international database: for type-approval the existing database should contain all COC documents identifying regulatory approvals to which each vehicle is certified, including single approved vehicles as well as approvals of technical changes to vehicles and necessary information for vehicle testing. It was noted that this is a record-linkage activity between national as well as international databases. It would not require a new database. The aim was to allow data on type approval, registration, roadworthiness tests and end of life certificates to be exchanged by electronic means.

The workshop noted that based on such an information system a EU wide platform on vehicle information linking type-approval vehicle registration and vehicle roadworthiness inspection will provide the basis for a European single market for vehicles guaranteeing a high level of safety of vehicles throughout their use. The workshop noted potential benefits of such as system in administrative efficiency, for cross-border enforcement, in support of eCall and out of country inspection, but only small potential benefit for road safety. It was noted that exchange of driver licensing information may be of more benefit for road safety. Issues concerning ownership of and responsibility for data and access to it also needed careful consideration.

The workshop concluded that a more reliable evidence base on which to base future implementation of vehicle safety technologies was needed. This could include crash and other safety data, specific system evaluations, road trials and improved evaluation methods.

Recommendations for action:

- *The EU should continue development of Vehicle Information Platform on grounds of administrative efficiency.*
- *The EU should review and clarify issues of data ownership, reliability, and access.*
- *The EU should implement a vehicle technology database.*
- *The EU should implement an EC task force to focus Commission work on new vehicle safety technologies in order to identify the systems with the potential for the most effective casualty reductions.*

Future direction in vehicle technology

The broader issues of vehicle safety and a vision of the cars of 2020 were very substantial and workshop participants believed they deserved more consideration than was possible given the time limit. A second theme concerned the need for systematic evaluation methods of existing and proposed policies together with developed cost-efficiency evaluations and it was felt that the existing methods were not adequate at EU level due to a lack of data and insufficient methodologies.

Safe System approach and *Integrated Safety* approach

The workshop concluded that the *Safe System* approach provides a framework for integrating vehicle safety with infrastructure and other key aspects. It was also important to develop an *integrated approach* to vehicle safety, linking preventive, active and passive safety; cooperative systems for drivers, passengers and vulnerable road users. Further EU action on vehicle safety is imperative, as is the need to ensure that the road safety agenda is not overwhelmed by the green agenda.

Recommendations for action:

- *The EU and Member States should adopt the Safe System approach to reducing road traffic deaths and injuries and an integrated approach to vehicle safety.*

Priority measures for primary and secondary safety

The workshop noted that most progress in reducing death and serious injury to date has been from secondary safety. The combination of legislation and consumer safety ratings had encouraged industry to make substantial advances in car occupant protection. In-vehicle enforcement of driving rules has considerable potential for casualty reduction. Injury mitigation approaches and designing for human failures still offers considerable scope for reducing death and serious injury. Electronic Stability Control systems had also demonstrated a significant impact on crash avoidance. It was possible to improve affordable vehicle primary and secondary safety further. Priority actions for secondary safety identified by research are: standardised test method for car to car compatibility; truck to car compatibility and improved methods for front, side and rear impacts. Priority actions for primary safety identified by research are: implementation of Intelligent Speed Adaptation systems, development of assessment procedures for intelligent systems, HMI (Human Machine Interfaces) evaluations, identification of systems with greatest casualty savings.

Recommendations for action:

- *The EU should develop a standardised test method for car to car compatibility; truck to car compatibility and improved test methods for front, side and rear impacts.*
- *The EU should set out a route map for the implementation of Intelligent Speed Adaptation systems.*
- *The EU should support research and development of assessment procedures for intelligent systems, HMI evaluations and identify systems offering the greatest casualty savings.*

Supporting EuroNCAP

The workshop noted that the European New Car Assessment Programme (EuroNCAP) has played a key role in providing consumer information and incentives for engineers to introduce new safety designs. It can encourage much faster changes to vehicles than can be achieved by regulatory methods and should be well-supported. A new overall safety rating provides an all-round

verdict about safety. EuroNCAP is ready to be active in primary safety/driver assist technology. At the same time, it was noted that industry is making rapid progress in implementing new technologies and needs to be more involved in how to measure performance etc. in safety rating systems.

Recommendations for action:

- *The EU and Member States should provide further support to EuroNCAP in order to encourage rapid changes to vehicle design to be implemented before 2020 and promote effective technologies to encourage uptake by the buying public.*

Increased focus on design of powered two wheelers and pedestrian protection

Design of powered two wheelers has been given relatively little attention at EU level. In view of the increasing safety problem associated with increased powered two wheeler use, the workshop concluded that there should be increased focus on motorcycle safety. It was noted, for example, that ABS was in the pipeline. It was also concluded that pedestrian detection should be a priority research and development issue.

Recommendations for action:

- *The EU and Member States should give increased focus to the safety of powered two wheeler design and pedestrian detection in standardisation and research and development programmes.*

Importance of continuing research and development

A key issue identified by the workshop was the importance of continuing research and development work in vehicle safety. Optimising vehicle safety requires basic knowledge (accident, biomechanics, and human behaviour), improved test methods and performance as well as evaluation procedures and impact analysis. In-depth investigation of crashes was essential to properly inform developments in vehicle safety. Evaluation of technologies, standards and EU legislation were all necessary.

Recommendations for action:

- *The EU should implement a systematic programme of evaluation of technologies before and after use on road and establish a sound evidence base including data about human factors and how the technologies are being used; a systematic programme of evaluation of EU legislation (e.g. pedestrian protection) before and after implementation to support the evidence base.*
- *EU research and development should focus on improving technology e.g. sensing and communication technology between vehicles and between vehicle and infrastructure.*
- *The EU and Member States should implement systematic crash investigation across Europe to identify future priorities and monitor performance.*
- *The EU and Member States should also provide training and information for emergency rescue workers on vehicle technology.*

Safety of future vehicle propulsion systems

There was some discussion in the workshop on the safety of future vehicle propulsion systems. Are, for example, green cars with new technology (electricity and batteries) and low weight safe? New types of vehicle structure associated with battery powered vehicles might affect crash protection while fuel cell powered cars may be high-voltage systems with potential risks during maintenance or during post-crash rescue. Low noise vehicles may not be observed by

other road users and create safety problems. All these issues needed to be covered by the EU research agenda.

Recommendations for action:

- *The EU should conduct a systematic review of safety issues related to future vehicle propulsion systems (hybrid, electric, plug-in electric and fuel cell) including an assessment of the broader regulatory needs.*
- *The EU should establish a specific Commission task force to receive the results of this review and to plan further actions.*

Please note that further information on this workshop is available in the Workshop Background Paper, Report and Appendices. A summary of recommendations is attached in Appendix 3.2 of this report.

3.2.3 Road safety economics

The workshop on Road Safety Economics: Internalising External Costs; Promoting Economic Incentives and Building cases for Investment was held on September 7, 2009 in Brussels, attended by around 20 delegates comprising stakeholders and policy experts.

The issue

Internalisation of external costs is a key element in EU transport policy and part of a package of initiatives intended to make transport more sustainable[48]. The Commission has a strategy of a stepwise internalisation of external costs for all modes of transport. The general principle of internalisation in the Commission strategy is the concept of 'marginal cost charging'. According to the approach, transport prices should correspond to the additional short-term social costs incurred by one additional person using the infrastructure. The Commission admits that a certain degree of simplification is inevitable, and states that in general the marginal costs can be said to correspond to the average of the variable costs. The Commission stresses the need for choosing the right economic instrument for each external cost. Some external costs vary according to time and place, such as congestion and accidents, whereas the external costs of CO_2 are linked to fuel consumption, but not to time and place.

Another issue raised by the Commission is the one of using the revenue. It is suggested that the revenue generated by internalisation should be earmarked for the transport sector and the reduction of external costs[49]. However, this is not a prerequisite for making use of the internalisation principle. The quest for inter-

[48] Two main documents describing the EU internalisation strategy are Commission of the European Commission (2008a) and (2008b).

[49] European Commission (2008a).

nalisation is to make incentives right and to obtain an 'optimal' allocation of resources, i.e. at the least costs[50].

With regard specifically to accidents, it is emphasised in the internalisation strategy that the external costs of accidents should be internalised using mechanisms that takes high-risk behaviour into account (speed, drink-driving) and provide incentive to change such behaviour. An example of such a mechanism is the insurance system of 'bonus/malus', which takes the risk profile of the driver into account (even though all social costs are not included).

Why address issue

To address the issues described above the European Commission decided to hold a workshop on Road Safety Economics: Internalising External Costs; Promoting Economic Incentives and Building cases for Investment. The workshop addressed two specific issues concerning internalisation and other policy options including e.g. policy trends and key concepts of internalisation.

Objective of workshop

The aim of this workshop was to explore a range of issues relating to road safety economics and the way the costs of road crashes are shared. There was a need to start a discussion at EU level about internalising the external costs of road crashes – this was a complex issue and it was important to identify the issues and information needed to contribute to the ongoing discussion. Currently, the 'acquis communautaire' concerning the internalization of external costs deals with freight transport, noise, air pollution but might, in future include accidents. A further aim was to review other financial instruments which could be used to benefit road safety and to identify priority actions at EU, national, regional and local level for the next EU Road Safety Action Programme 2011-2020.

Main conclusions and recommendations

The workshop addressed issues concerning key concepts of internalisation and safety taxation - the state of the art of internalisation of road crash costs; a discussion of the components of these costs, including the valuation of human life; and a discussion of whether internalisation by taxation or by regulation. Other issues inspired by the internalisation concept were also discussed (e.g. driving licence requirements, the role of the insurance industry, pay as you drive, tax exemptions, etc.).

Socio-economic costs of road crashes, external costs

The first conclusion of the workshop was that the socio-economic costs of road crashes place a heavy burden on society and need to be reduced substantially. However, while estimates are available, the socio-economic costs of crashes are not identified by every Member State and for the EU as a whole.

[50] In line with this, the Commission stresses that the use of such revenue should always be on the basis of cost-benefit studies or similar analyses which guarantee that the chosen uses maximise the net benefits to society.

There is a need to better understand the different elements of the socio-economic cost, especially the external cost of road crashes. Assessment of external costs/tools is necessary for effective cost benefit analysis work and to allow a business case to be made for road safety investments. While the current IMPACT handbook is a good starting point today, it will need to be further enhanced or a further recommended approach developed. More EU research on external costs is needed to allow categorisation and updating of values (e.g. for serious and long-term injury). The willingness to pay methodology was accepted as the best approach for establishing the indirect costs of road crashes and willingness to pay surveys may be needed.

Recommendations for action:

- *The EU and Member States should work to reduce the socio-economic costs of road crashes which place a heavy burden on society.*
- *The EU and Member States should carry out further work to assess the socio-economic cost of road crashes at EU and national levels. This should include research on external costs starting from the basis of IMPACT to allow the updating of values which may include funding willingness to pay surveys.*

Internalisation of external costs

Within road safety the user does not fully pay for the associated negative impacts on society, such as the risk of death and injuries imposed on fellow citizens. In order to make the market fully reflect the costs of the 'production' of goods, the external costs should ideally be internalised. Such internalisation can be obtained by using either direct regulation or economic instruments such as taxes, subsidies or quotas. The main objectives of current internalisation are to secure the polluter pays principle, improve economic efficiency and reduce the external cost by increasing transport users responsiveness to price signals.

The workshop concluded that the role of internalisation of external costs of road crashes is accepted as a good principle, but is not well understood in terms of its potential effectiveness in improving road safety. The internalisation of external cost is one element that might contribute to safety on the roads although the direct effect may be marginal. The workshop discussed the complexity of deciding who is liable for the cost incurred', the challenge of obtaining a unified approach across different countries concerning the estimation of costs and the need to understand better what is feasible for insurance companies in terms of the obstacles they face in providing better incentives in insurance premiums to reduce the risk.

EU demonstration projects should be carried out to assess the impact of the internalisation on road safety and the Action Programme should contain a Road Map towards internalization of externalities linked to road safety.

Recommendations for action:

- *The EU should carry out demonstration projects to assess the impact of the internalisation on road safety.*
- *The EU Action Programme should contain a Road Map towards internalization of externalities linked to road safety.*

Other financial instruments

A further conclusion of the workshop was that other financial instruments are likely to have potential to play a greater role in improving road safety. Examples are tax reductions on proven advanced technological equipment and vehicles and incentives in public procurement based on safety ratings. A milestone should be set to assess the general impact and define optimal combination of financial measures to reduce the social costs of road crashes.

Recommendations for action:

- *The EU and Member States should review the value of tax exemptions on proven safety equipment and other incentives in contributing to reductions in the social costs of road crashes.*

Please note that further information on this workshop is available in the Workshop Background Paper, Report and Appendices. A summary of recommendations is attached in Appendix 3.3 of this report.

3.2.4 Safer driving in Europe through training, education and enforcement

The workshop on safer driving in Europe through training, education and enforcement was held on 18th September 2009 in Brussels, attended by around 30 delegates representing key stakeholders, policy and research experts.

The issue

The road user is a main participant in the road traffic system. The road traffic system has three main components which must all work together to reach a high level of road safety. There must be a balance between:

- the road design (including the speed limit),
- the safety performance of the vehicle (including active and passive safety)
- the choices and behaviour of the road user.

All road users need to have the knowledge, attitudes and ability to make choices and take decisions in order to drive and reach their destination safely without harming themselves and those around them.

The main causes of fatal accidents are speeding, driving under the influence of alcohol (hereafter referred to as drink-driving) and non-use of a seat belt. In the EU 25, speeding has been estimated to account for 30% of all traffic deaths, and drink-driving for 25% of road deaths. Non-use of seatbelts affects the severity of the impact of accidents. It has been estimated to account for 17% of road deaths. Cutting back these causes of deaths on the roads would achieve more than half of the intended 50 % reduction in fatalities. A method to support this is enforcement of traffic rules and making sure that they are being applied.

Why address issue

To address the issues and problems described above the European Commission decided to hold a workshop on safer driving in Europe through training, education and enforcement. The workshop through presentations addressed:

- Findings of expert group on driver training and road safety education
- Novice drivers on European Roads
- TISPOL cross border enforcement
- Euro Control Route Commercial vehicles control.

This was followed by discussions on further developments on safer driving in the EU through Training, Education and Enforcement.

Objective of workshop

The purpose of this thematic workshop was to engage key stakeholders in discussion of the future possible actions that can be included in the new EU Road Safety Action Program 2011-2020 to obtain safer driving through Training, Education and Enforcement achieving the greatest possible casualty reductions in all of the EU Member States.

Main conclusions and recommendations

Challenges facing novice drivers

The workshop noted that lack of driving experience is one of the key challenges of novice drivers. Social factors also contribute to increase risk such as personality and life style factors of the driver, the driving context as well as gender. Statistics show that a significantly higher number of male novice drivers than female novice drivers are involved in crashes. The need for combined education, training and enforcement was highlighted throughout.

Further harmonisation of training, testing and licensing

The workshop discussed the recommendations of the expert group which had been set up to work on guidelines for driver training. A range of actions was required at EU level to further harmonise licensing, testing and training in all Member States based on best practice and further research.

It was concluded that it is necessary to improve the quality of the whole package of education, training and licensing. Some lengthening and deepening of the learning process was required to produce the ideal five star driver in a five star car on five star roads. Lengthening the 'learning process' would involve an earlier minimum age for learning to drive cars; the introduction of probationary periods for novice drivers and 2nd phase training. Deepening the 'learning process' would involve the creation of a 'whole driver education package' with mandatory pre and post license novice driver training, more 'structured' accompanied driving and a mix of theory and practice in the process. Improved training for motorcyclists was also recommended. More research would be necessary on second phase training, restrictions for novice drivers, older drivers, coaching methods for more efficient driver training etc. in support of this process. The question was raised as to whether there should be a licence for life or is some form of continuous training required (learning from the professional driver's directive).

There was a need to ensure quality assurance of the system. The workshop concluded that there was a need to harmonize the qualifications of driving and riding instructors based on the definition of clear goals, as well as improved qualification of driving examiners. The workshop also highlighted the potential value of insurance discounts for accident-free novice drivers; the need to raise

risk awareness of new in car driver assistance systems and the value of rehabilitation programmes for offenders.

The workshop also concluded that there should be a systematic approach to traffic safety education at schools in Europe, in order to increase risk awareness and self evaluation.

Recommendations for action:

- *The EU should further harmonize training, testing and licensing in all Member States (life long learning) based on best practices and research to improve the quality of the whole package « education, training and licensing » and to lengthen and deepen the learning process. This would include:*
  - *Novice drivers: Longer learning process incl. mandatory pre and post license training in order to achieve more responsible drivers.*
  - *Novice drivers: Accompanied driving and probationary periods (driving alone at night time, zero BAC, heavier demerit point system).*
  - *Novice drivers: Second phase training.*
  - *Improved training of motorcyclists.*
- *The EU should fund more research on second phase training, restrictions for novice drivers, older drivers etc, coaching methods for more efficient driver training raising risk awareness of new in car driver assistance systems*
- *The EU should also seek to introduce quality assurance for the system by:*
  - *Introducing a requirement for instructors including accompanied persons, have to undergo introductionary seminars and to have minimum and maximum age.*
  - *Harmonizing the qualification of instructors based on the definition of clear goals*
  - *Improving the qualification of driving examiners.*
- *The EU should promote traffic safety education at school - there should be a systematic approach in schools in Europe, in order to increase risk awareness and self evaluation.*
- *The EU should promote rehabilitation programs for offenders with high quality requirements.*
- *The insurance industry should be encouraged to offer insurance premium discounts for accident-free novice drivers.*

The important role of enforcement

The importance of combined publicity and enforcement of improving compliance with key safety rules and achieving large reductions on casualties was highlighted by the workshop. The important contribution of police enforcement, automated enforcement and self-enforcing engineering measures were all noted. Key safety rules, penalty systems and enforcement equipment, protocols and processes which differed in many Member States needed to be harmonised.

Cross border enforcement

The workshop also noted previous EU actions in this field including the 2004 recommendation on enforcement providing guidelines (non-mandatory) on speeding, seat belt wearing and drinking and driving. The Commission had also adopted a proposal for a directive on cross border enforcement which was adopted in 2008, but faced difficulties in the Council. The workshop was unanimous in urging continued action on this by the Commission as well as a range of other EU actions.

Continued focus needed on speed, drinking and driving and seatbelt wearing

Enforcement needed continued focus on speeding, drunk driving and seatbelts. The workshop concluded that speeding was a particularly important issue, and harmonisation of equipment used for speed controls should be carried out including common testing requirements of the equipment. In fact, devices and protocols used for enforcement of all key safety rules needed to be harmonised.

New risks were also coming into focus such as driving under the influence of drugs, elderly users and PTWs.

Commercial transport enforcement

There was discussion of the enforcement of commercial transport rules and it was concluded that risk-rating, the use of technology to allow enforcement agencies to easily identify those vehicles, drivers and companies which represent the highest risk to road safety and better coordination of inspection between Member States were all important.

Recommendations for action:

- *The EU should harmonize key traffic regulations, limits (alcohol, drugs, seat belt exemptions) and penalties.*
- *EU standardisation should be carried out on technical equipment standards.*
- *The EU should harmonise the training of vehicle inspectors, the training of enforcement personnel, in particular on social legislation in road transport, cross border enforcement, enforcement practices and exchange and gather enforcement data from all Member States.*
- *The EU should promote the need for legislation on helmets and fatigue, legislation for vans and small lorries (< 3.5 ton), the harmonization of demerit point systems, the harmonization of licences including chips with information on driver (medical records etc.), use of black boxes, alcolocks and seatbelt reminders.*
- *The EU should also promote the coordination of heavy-vehicle inspections between Member States.*
- *The EU should promote the use of campaigns together with enforcement at national regional and local levels, raise awareness of safety needs and promote best practice.*
- *The EU should publish a public version of the accident risk rating system.*

Please note that further information on this workshop is available in the Workshop Background Paper, Report and Appendices. A summary of recommendations is attached in Appendix 3.4 of this report.

3.2.5 Safety of non-urban, non-motorway roads in Europe

The workshop on the safety of non-urban non-motorway roads in Europe was held on September 30, 2009 in Brussels attended by around 25 delegates representing key stakeholders and policy experts.

The issue

Generally the largest proportion of accidents occurs in urban areas and the most serious crashes and thus fatalities are found on the rural network. Almost 60% of fatalities in EU27 occur on non-urban, non-motorways while almost 70% of casualties occur in urban areas.

The picture is the same for different types of vehicles. Only modes typically used in urban areas such as mopeds, bicyclists and feet has higher shares in urban areas than non-urban areas. However, approx. 45% of mopeds and bicyclist and 30% of pedestrians are killed in non-urban, non-motorway roads.

Why address issue

As indicated above it will be necessary to address safety problems on the non-urban, non-motorway roads if ambitious targets on reduction of number of fatalities are to be reached. To address the issues and problems described above the European Commission decided to hold a workshop on the safety of non-urban non-motorway roads in Europe. The workshop addressed two specific issues concerning safe design and management of roads and road safety improvements through traditional technologies and/or intelligent technologies.

Objective of workshop

The aim of the workshop was to address two specific issues concerning safe design and management of roads and road safety improvements through traditional technologies and/or intelligent technologies to identify priority actions at EU, national, regional and local levels for the next EU Road Safety Action Programme 2011-2020.

Main conclusions and recommendations

The death toll on non-urban, non-motorway roads

The workshop noted the importance of further action to improve road safety on non-urban, non-motorway roads given that these contributed to 60% of road deaths, nearly 50% of cyclist deaths and 30% of pedestrian deaths. The workshop noted that an iRAP analysis showed that deaths can be reduced by up to one third (1/3) and that high returns are available through affordable large scale engineering interventions.

Safe design and management

The first session looked at the safety design and management of non-urban, non-motorway roads. Discussions centred on what makes a road a safe road, the role of the EU in improving road safety engineering, the importance of measuring and mapping the safety of roads across Europe and identifying priority actions for the EU and Member States. Several conclusions were reached:

The need for improved planning, design and operation of the network

A key conclusion was that the planning, design and operation of the road network creates the framework for road use. It was vital that safety considerations and the needs of both motorised and non-motorised users are taken into account in revisions of national functional road classifications. Furthermore, it was concluded that road safety engineering should be actively promoted since it represents a sound investment and a higher benefit/cost ratio, in general, for these roads than for other road engineering.

Recommendations for action

- *Actively promote and fund road safety engineering at EU, national and local levels since it represents a sound investment and a higher benefit/cost ratio, in general, for these roads than for other road engineering measures.*
- *At EU, national, regional and local levels, promote the concept of self explaining and forgiving roads within Safe System which take better account of the needs of vulnerable and unprotected road users in the operation and design of road improvements.*
- *Member States should ensure that road safety of all road users needs to be catered for in national revisions of functional road classifications.*

Applying the TEN-T Directive to all roads in EU countries

The workshop discussed the elements of the TEN-T Directive 2008/96 on safety impact assessment, safety audit and network safety inspection and concluded that it should apply to all roads in EU countries even if hard to achieve. Safety impact assessment was an important tool and needed more promotion at EU level.

Recommendation for action

- *The EU should work for the principle that Directive 2008/96 should apply to all roads.*

Harmonising road safety engineering standards

The workshop also concluded that the EU should play some role on helping to determine minimum road safety engineering standards. Skid resistance, barriers, markings, lighting, poles, guardrails, shoulders, lanes, and traffic signs were cited as examples.

Recommendation for action

- *The EU should have a role in technical standards (e.g. skid resistance, barriers, markings etc) to ensure minimum standards.*

Best practice guidelines promoting *Safe System*

In support of activity on TEN-T roads and well as activity in Member States, it was concluded that authoritative EU best practice guidelines as well as the process for obtaining agreement on them should be developed. These should cover the range of issues contributing to the *Safe System* approach (self-explaining roads and forgiving roadsides) and include land-use planning and speed management.

Recommendation for action

- *The EU should support the development of authoritative guidance/best practice guidelines covering a range of safety engineering issues and establish a process of obtaining agreement (EU level guidelines), e.g. land use planning, speed management, forgiving roads which contribute to the Safe System approach.*

Safety rating, crash and survey data

There was a need to promote safety rating information on the risks of specific roads to provide data on the safety quality of roads. EuroRAP/iRAP risk mapping and protection score rating should be promoted and further supported by the EU and used by Member States. There was also a need for better crash/survey data e.g. on traffic volume, distance travelled and average mean speeds.

Recommendation for action

- *The EU and Member States should promote consumer information on the risks of specific roads.*
- *The EU and Member States should promote better crash/survey data.*

Project funding

The workshop also considered that road safety engineering criteria should be defined for inclusion in EU project investment guidance to Member States and neighbouring countries and, promote resource allocation for safety engineering.

For example, these might require the application of the four instruments of the Infrastructure safety directive in the use of funds on all types of roads in all EU and third countries, via e.g. internal guidelines of institutions/banks providing funds and with reference to best practice guidelines. In addition demonstration projects and research for innovative safety engineering should be supported.

Recommendation for action

- *The EU should establish road safety engineering criteria for inclusion in EU project investment guidance.*
- *The EU should support demonstration projects and research for innovative safety engineering.*

The role of technology

The second session discussed and evaluated the prospects of traditional and new intelligent technologies for improved road safety. A range of technologies was discussed and these included:

- Improved sensors in vehicles, pavement and roadside.
- Vehicle and road user awareness signals.
- Vehicle hazard warning signals for use in between 2 vehicles and in between vehicles and road infrastructure.
- All-network real-time monitoring of traffic status, road and environment conditions.
- Current road condition data in vehicle.
- Speed, driver impairment enforcement.

The overarching conclusion was that technologies are expected to have safety potential, but more testing and demonstration projects are needed to assess evidence on what works and what does not with regard to safety. Promising safety technologies included ISA (Intelligent Speed Adaptation, ACC (Adaptive Speed Control), SBR (Seat Belt Reminders), LDA (Lane Departure Assistance), and technologies which hinder dangerous driving (fatigue, alcohol interlocks, drugs and distraction).

Recommendations for action:

- *The EU should promote both traditional technologies and new technologies e.g. by:*
  - *Supporting testing and demonstration projects.*
  - *Ensuring common EU standards on proven safety technologies.*
  - *Providing a framework for economic evaluation, cost-benefit decision making, use impact assessment, when assessing the benefits of potential ITS technologies.*
  - *Promoting, standardizing and providing for deployment of ISA (Intelligent Speed Adaptation).*
  - *Promoting eCall and extending it to powered two-wheelers.*
  - *Funding the development, testing, deploying technologies with greatest life-saving potential (e.g. ISA, ACC, SBR, LDA).*
  - *Supporting technologies to hinder dangerous driving (fatigue, alcohol, drugs and distraction).*
  - *Assuring better co-operation between cars and road infrastructure providers to achieve safe travel on the whole network.*
  - *Developing best practice guidelines and disseminate them.*

Please note that further information on this workshop is available in the Workshop Background Paper, Report and Appendices. A summary of recommendations is attached in Appendix 3.5 of this report.

3.2.6 Road safety communication

The workshop on Communication on Road Safety was held on October 1, 2009 in Brussels, and attended by around 30 delegates representing key stakeholders, policy and communication experts.

The issue

The need for a European level Observatory was first recognised in the European Commission's Transport White Paper (2002) and described in more detail in the 3rd Road Safety Action Plan (2003)[51]. The European Road Safety Observatory (ERSO) is the primary forum in the EU for the exchange of information on best practice. There is now a need to assess how the European Road Safety Observatory may be developed in support of the objectives of the next European road safety action programme (2011-2020).

The European Road Safety Charter engages key stakeholders in the private sector and in local and regional authorities to engage in the shared responsibility for the delivery of Road Safety Action Plan targets by making commitments to deliver and monitor specific actions. In the first phase (2004-2007), the objective was to create a large number of signatories involving different sectors of society. In the current phase (2008-2010), a further key objective of the Commission has been to create a network for information exchange of best practice between organisations. There is now a need to assess how the European Road Safety Charter may be developed in support of the objectives of the next European road safety action programme (2011-2020).

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51 EUROPEAN ROAD SAFETY ACTION PROGRAMME, Luxembourg: Office for Official Publications of the European Communities, 2003. ISBN 92-894-5893-3. COMMUNICATION FROM THE COMMISSION, COM(2003) 311 final

Through technological development within the multimedia world, the social media have created new channels of communication. Here the internet represents the most important and most direct channel of communication. Blogs, Facebook and YouTube are very typical examples along with mobile phones and GPS. New channels of communication improve the potential to target messages more directly than more traditional forms. Their potential and actual impact on road safety will need to be carefully evaluated. Research shows that publicity combined with high-visibility police enforcement can make a substantial contribution to reducing road casualties[52]. There is therefore a need to assess the tools for use in new communication strategies in Europe and how might these be utilised in communication with the general public and with young people in particular.

Why address issue

To address the issues and problems described above the European Commission decided to hold a workshop on Communication on Road Safety. The workshop addressed three specific issues concerning communication on road safety including the European Road Safety Observatory (ERSO), the European Road Safety Charter (ERSC) and new communication tools. The latest trends in communicating information to an increasingly IT using general public and identify possible future options for an EU road safety communications strategy was addressed.

Aims of workshop

The objectives of the workshop were to discuss the main actions that can be taken at EU and national levels to improve communication on road safety in support of efforts to achieve the greatest possible reductions in casualties in road crashes over the next decade. In this context, 'communication' means both the transfer of road safety knowledge and information to all concerned in achieving road safety results as well as promotion of the shared responsibility of decision-makers, practitioners, the business sector, professionals, non governmental organizations and road users in general across the EU. The aim was to engage participants in discussion on further developments in the communication of information and knowledge on road safety.

Main conclusions and recommendations

The workshop addressed three specific issues concerning communication on road safety including the European Road Safety Observatory (ERSO), the European Road Safety Charter (ERSC) and new communication tools.

ERSO – key issues

On ERSO the discussions were structured around how the European Road Safety Observatory might be developed further in support of the next EU road safety action programme; specific priority actions which might be taken and how might experience with observatories in different Member States inform.

[52] See, for example, ETSC (1999), Police enforcement strategies to reduce traffic casualties in Europe, European Transport Safety Council, May 1999

ERSO as an information and communication tool for all

The ERSO website had comprised information mainly in support of professionals at the local, regional, national and European level. The Commission saw its development as a real observatory as an information and communication tool for all. The workshop highlighted the value of the European Road Safety Observatory, endorsed the objective for ERSO to become a source of information and knowledge for all as well as the need for it to be established as a permanent EU structure with appropriate human and financial resource. Participants emphasised that any broadening of the scope of ERSO should preserve and strengthen the original aims of ERSO as an established and valuable source of knowledge and data.

Recommendation for action:

- *The EU should establish ERSO as a permanent EU structure as a source of information and knowledge for all with appropriate human and financial resource while preserving and strengthening the original aims of ERSO.*

Creating new communication platforms within ERSO

In broadening the target groups, the ERSO would need to create appropriate communication platforms for the general public, experts and policymakers. Contact with ERSO by the general public needed to be easy and accessible and the EU should promote the development of an interactive tool so that the enquirer can receive relevant, targeted information.

Recommendation for action:

- *In targeting the general public, the EU should promote the development of an interactive tool so that the enquirer can receive relevant, targeted information.*

Updating ERSO knowledge

Knowledge and data for experts and policymakers should be updated periodically and added to in light of new EU research and policy initiatives and the international knowledge base. More coherent data for international comparison is needed and the DaCota project will take this forward. The existing Council agreement for provision of data by Member States may need to be reviewed to meet the future data needs of ERSO. There was a need to develop more ‘best practice’ resources/ tools for implementation and demonstration projects should be funded to emphasise the value of data in policymaking.

Recommendations for action:

- *Knowledge and data for experts and policymakers should be periodically updated and added to in light of new EU research and policy initiatives and the international knowledge base.*
- *The EU and Member States should promote the development of more ‘best practice’ resources/tools for implementing road safety measures.*
- *The EU should build on proposals for quick indicators/monthly reports of safety performance targeted at the media.*
- *The EU should fund demonstration projects on the value of data to reinforce the importance of data for policymaking.*

A single EU reporting system for crash injury, exposure data and other data

The workshop emphasised the problems of access to comparable data sets and concluded that a single EU reporting system for crash injury, exposure and other data should be established. A standard definition for ‘severe’ and ‘minor’ injury should be adopted as soon as possible and which could be implemented

across databases. Detailed in-depth investigations needed to be carried out as well as quick indicators/monthly reports prepared of safety performance targeted at the media.

Recommendations for action:

- *The EU and Member States should develop, promote and establish, in due course, a single EU reporting system for crash injury, exposure data, and other data.*
- *The EU and Member States should adopt a standard definition for minor and severe "injured" i.e. non-fatal casualties and implement this across the databases.*
- *The EU should stimulate detailed in-depth investigations and in-depth accident data collection and analysis.*

Establishing a network of national observatories within ERSO

It was also concluded that the creation of a network of national level observatories within ERSO would be useful to broaden understanding and access to road safety in different Member States.

Recommendation for action:

- *The EU should create a network of national level observatories within ERSO.*

ERSC – key issues

On the European Road Safety Charter, the discussions centred around how the ERSC can be developed further in support of the next EU road safety action programme; the availability of useful practice which can be used to inform any expansion of the Charter; whether the example of CIVITAS was relevant and priority recommendations for EU action. Several conclusions were drawn.

ERSC – future scope

The workshop concluded that the ERSC was a valuable tool which should stimulate specific, effective action for different stakeholder groups within the framework of the Charter. Notwithstanding the success of CIVITAS, the Charter needed to reach beyond cities and more broadly to civil society - to other jurisdictions, employers, non-transport organisations, schools, supermarkets, health organisations - if funding can be secured. It was also suggested that the ERSC framework might be developed at some stage to encourage the development of national Charters which might allow for easier access by smaller organisations.

High quality contributions

It was important that the Charter actions were 'as well as' not 'instead of' effective road safety action at EU level and would supplement other key actions in the next road safety action programme. There was discussion about the value of commitments versus signatories and it was concluded that making a formal commitment is likely to lead to more meaningful organisational engagement and discussion than supporting the Charter just as a signatory. The improvement or enlivenment of existing commitments was as important as seeking new commitments. It was important that the EU evaluated the effectiveness of all types of road safety action being carried out within the framework for the Charter.

High-level championing

Participants highlighted the importance of high-level championing in the promotion of road safety. This involved networking, regular contact, and access to 'road safety champions' including celebrities. Commission ownership was as

important for the ERSC as the ERSO and the EU should also seek support for the ERSC in the new Member States. A central office at EU level might be useful in aiding and coordinating external contact.

Recommendations for action:

- *The EU should stimulate specific, effective action for different stakeholder groups within the framework of the Charter e.g. employers, health sector, cities etc.*
- *The EU should evaluate the effectiveness of all types of road safety action being carried out within the framework for the Charter.*
- *The ERSC framework should be developed to encourage the development of national Charters which might allow for easier access by smaller organisations.*
- *The EU should encourage high-level championing of road safety through the Charter and seek support for the ERSC in the new Member States.*

New communication tools

The workshop discussed communication strategies in general and new tools which could be used effectively in road safety communication strategies with the general public and young people, in particular.

Participants highlighted that research shows that publicity combined with high-visibility police enforcement can make a substantial contribution to reducing road casualties. At the same time, and through technological development within the multimedia world, the social media has created new channels of communication. Here the internet represents the most important and most direct channel of communication. Blogs, Facebook and YouTube are typical examples along with mobile phones and GPS. New channels of communication improve the potential to target messages more directly than more traditional forms. Their potential and actual impact on road safety will need to be carefully evaluated.

The importance of communication strategy

It was concluded that any communication directed at improving road safety should be based on a well-defined, carefully prepared and targeted communication strategy, as outlined in the EU CAST project and in combination with other effective actions such as police enforcement. New opportunities exist for more direct targeting of road safety messages but proven best practice methods will continue to play the key role for the foreseeable future, although experimentation with new media is desirable. Peer to peer and face to face contact in promoting road safety amongst young people has been identified as being valuable. The summary conclusion was to use best practice, innovate and evaluate.

Use best practice, innovate and evaluate

Recommendations for action:

- *The EU should actively promote the CAST best practice communication strategy manuals.*
- *The EU should support experimentation and evaluation of new media tools for use in combined online and offline campaigns.*

Please note that further information on this workshop is available in the Workshop Background Paper, Report and Appendices. A summary of recommendations is attached in Appendix 3.6 of this report.

3.3 Results of Internet consultation

3.3.1 The issue

Involvement in a road traffic crash is the leading cause of death and hospital admission for EU citizens under 45 years. Against the background of 39,200 road traffic deaths in 2008 (EU27) and an annual socio-economic cost estimated at €180 billion (based on willingness to pay principle), road safety continues to be a priority area for action of the European Union[53, 54].

In spite of some progress, the objective of halving the number of road fatalities by 2010 will not be achieved; in 2008 as many as 39,200 (provisional number) citizens of EU countries were still killed in traffic.

3.3.2 Why address issue

With the aim of galvanizing concerted and effective action for the next decade, the European Commission has carried out a consultation and data collection exercise to prepare a new European Road Safety Action Programme (RSAP) covering the period 2011-2020. The Internet consultation is divided into three sections:

- General information and subjective perceptions of national safety level
- Scope of the next European road safety action programme:
  - Key problems and issues
  - Most important countermeasures
  - Key problems or issues for institutional management.

- The role of the EU:
  - Integrating road safety into other EU policies.
  - Priority areas for action in next EU programme 2001-2020.
  - New safety technologies.

3.3.3 Aims of Internet consultation

The objective was to engage European citizens, governmental stakeholders at national, regional and local levels, business and professional sectors, in identifying the:

- Key road safety problems to be addressed by the European RSAP for the period 2011 – 2020.
- Priority actions to address the unacceptable and costly levels of road death and serious injury across the EU.

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53 Annual Statistical Report Based on data from CARE/EC, 2008, SafetyNet, ERSO, 2008

54 ETSC (2008) 2nd Road Safety PIN Report. Brussels, Belgium

The results of the Internet consultation provide indications on the opinions of different stakeholders on the main problems and potential measures for the European road safety action programme 2011-2020.

3.3.4 Main conclusions and recommendations

Replies received to the consultation

Responses and type of respondents

By the deadline 20th November 2009 a total of 496 had responded to the questionnaire. Out of these 82% were male and 18% were female. Most (54%) spoke on behalf of an organisation or a public authority while 46% responded as individuals. The summary report from the Internet consultation is included in Appendix 2.

The results of the Internet consultation provide indications on the opinions of different stakeholders on the main problems and potential measures for the European road safety action programme 2011-2020.

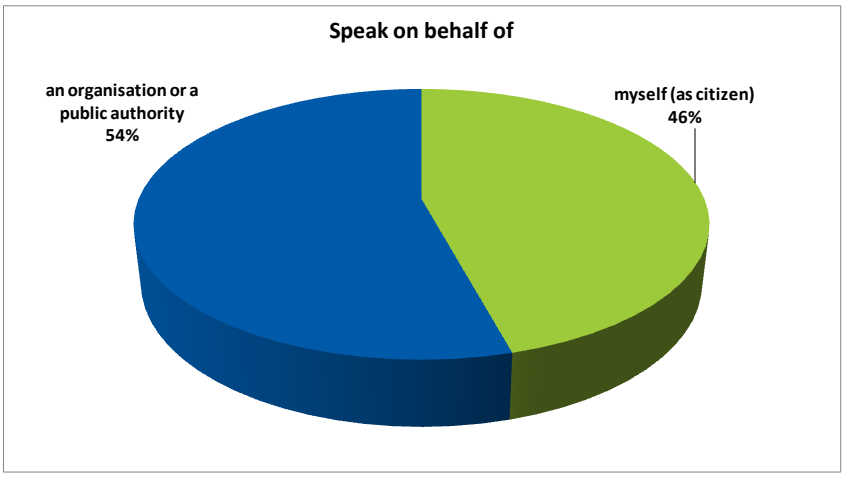

Figure 19 Whom the respondents are speaking on behalf

Type of respondents

The respondents cited cars, bicycles or public transport as their most frequently used mode of transport. Almost 60% of the respondents were users of cars or trucks, more than 20% were vulnerable road users (motorcyclists, pedestrians, cyclists, moped users) and less than 20% used public transport or other means.

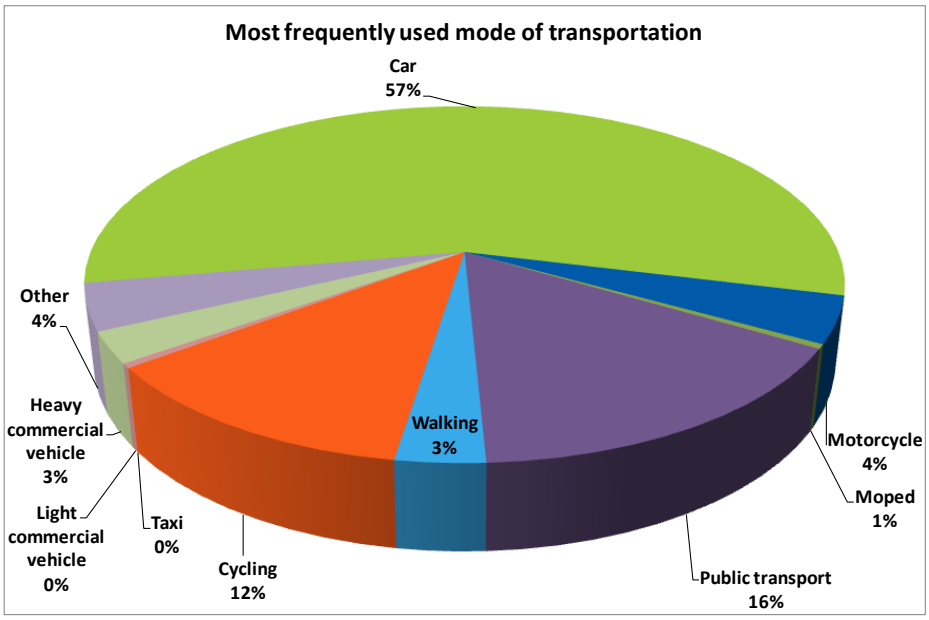

Figure 20 Respondents most frequently used mode of transport

Almost 30% identified themselves as a private individual when asked about organisation type. Thus, some of those when responding as individuals, also belonged to an organisation. Almost 18% of the respondents were from private companies and 25% from associations/NGOs. Almost 14% of respondents were from national, regional and local governments and 10% from academic institutions. The group of "other" (5%) included research institutes, European Commission, police, international organisations, etc.

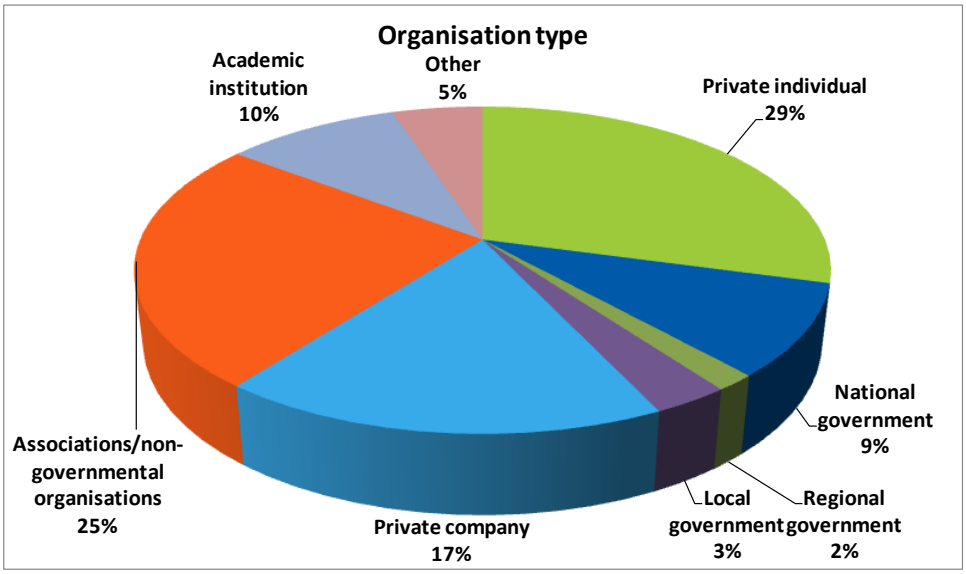

Figure 21 Respondents organisation type

Country responses

More than 92% of the respondents lived in European Union Member States, 3% in Europe outside EU (Switzerland, Norway and Albania) and 5% outside Europe. Out of the respondents from EU 25% were from United Kingdom, 11% from Germany, 10% from Belgium, 7% from France and Italy and 6%

from Austria, Spain and Sweden. There were no respondents from two EU countries - Cyprus and Malta - and three countries (Bulgaria, Estonia, and Lithuania) had only one respondent from each.

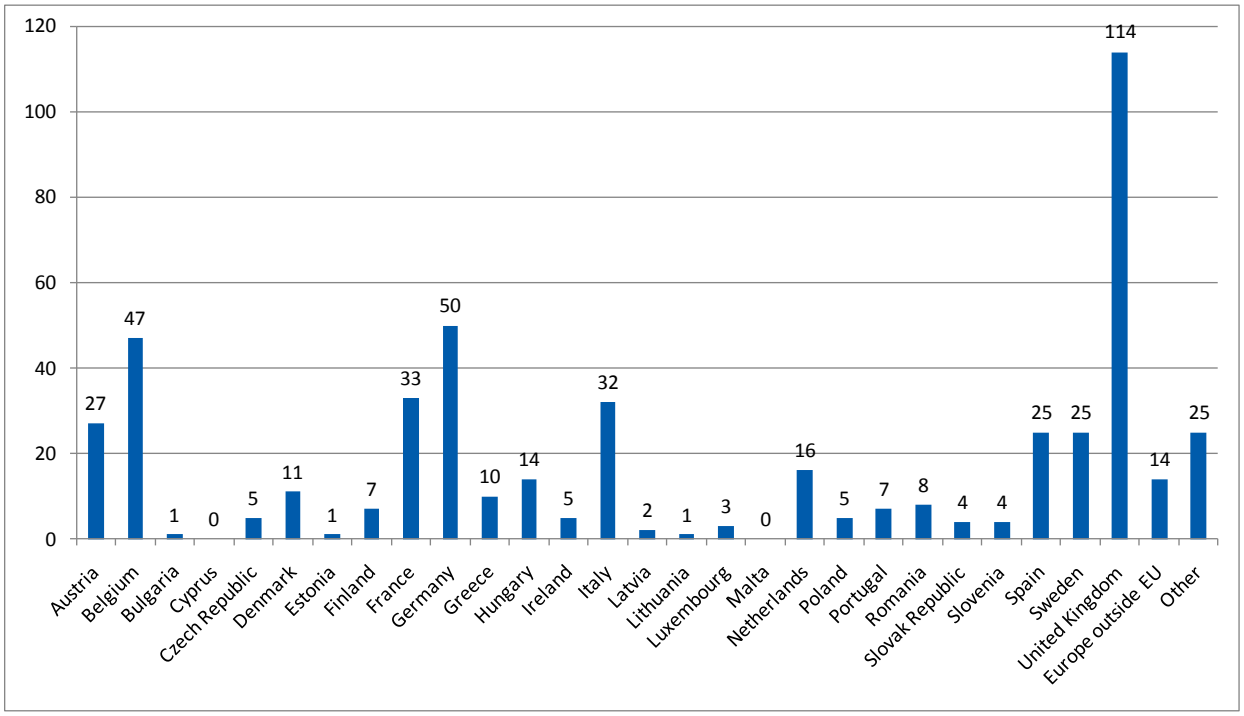

Figure 22 Respondents by EU country

Perception of road safety

In general 76% of respondents perceived that traffic is safer now than 10 years ago and 21% thought the opposite while 3% did not know. Respondents from organisations, car users and from countries with large casualty decreases were generally more positive than the average.

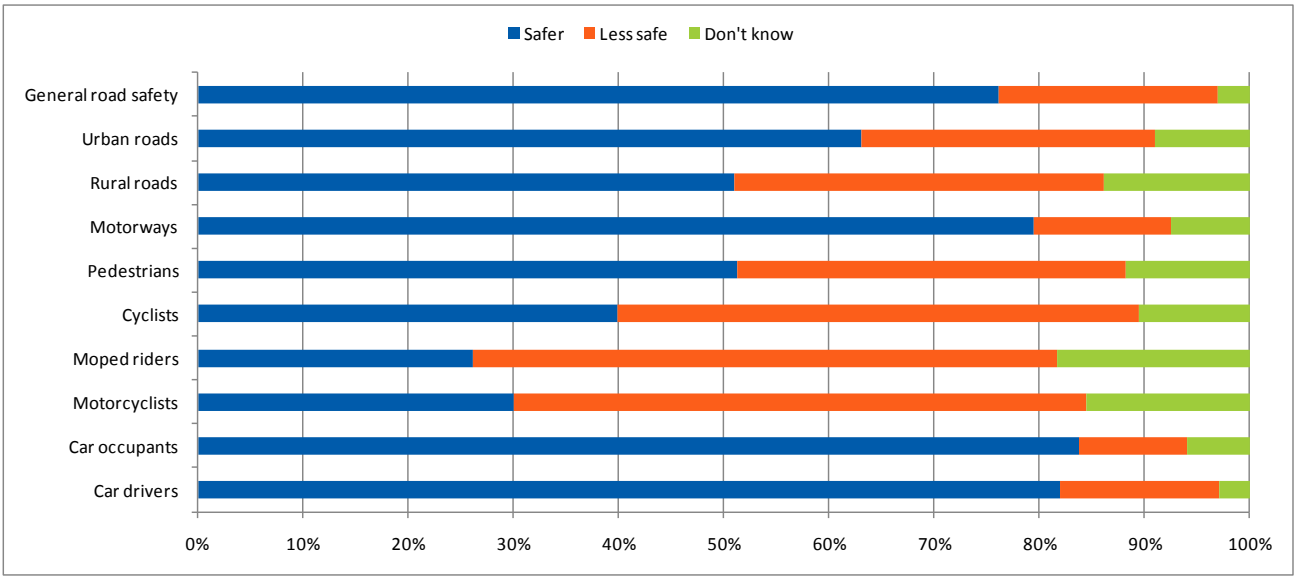

Figure 23 General perception of safety compared to 10 years ago by mode and infrastructure

Opinions were more varied on the safety of the different traffic modes and road types. In general respondents felt that traffic was safer compared to 10 years ago for car drivers and occupants, but motorcyclists, mopeds and cyclist are generally seen as less safe in traffic today. Respondents from organisations and public transport users are the only groups where the majority find safety better for cyclists. Many find pedestrians less safe than 10 years ago but there are differences in the assessment by the different groups.

The different infrastructures (motorways, rural and urban roads) were generally perceived as safer by the respondents, especially motorways.

Scope of the next European road safety action program

What are the most important road safety problems?

Respondents were divided when it came to defining the main road safety issues, however, most (78%) - both in total and by the different respondent groups - identify the numbers of death as the primary issue in road safety. But 47% also consider the level of societal impact of death and long-term injury and 45% the costs to the society as problematic. There were additional comments where many respondents cited the costs of car crashes (2% of GDP) and their impact on society and traffic as being most important.

Recommendation for action at EU and national level:

- *Establish where necessary and update annually estimates of EU and national socio-economic costs of road crashes using best practice methods.*

Road users

Respondents were asked to select road safety problems linked to road users. Young drivers (63%), car drivers (31%) and powered two-wheeler users (39%) were in general identified as the main casualty problems.

Among the group of respondents perceiving the traffic less safe than 10 years ago as described in 0 many also found young drivers (52%) and car drivers (48%) as the main casualty problem, however together with cyclists (26%) and powered two-wheeler users (25%).

In the additional comments, some respondents indicated that all the suggested groups: young (male) drivers and car users are the most numerically important problems, but that powered two-wheeler users, pedestrian, cyclists and children are the most vulnerable groups.

Impact of societal change

Regarding the impact of societal change most identified lifestyle change, as the primary problem in road safety (59%), but change in transport mode (50%) and ageing of society also played an important role (45%).

Countermeasure: user, infrastructure and vehicles

The questionnaire divided countermeasures into four fields: infrastructure, road user measures, road user enforcement measures and vehicle safety. Respondents were asked to choose two measures amongst a number of the given alternatives for each field.

Infrastructure

Among all the respondents the most important countermeasures on infrastructure were assessed to be "road classification - appropriate match between function, speed limit, design, layout" (57%), "facilities for pedestrians and cyclists"

(57%), "speed management in urban areas" (49%) and "implementation of safety audit and safety inspection" (47%). Most groups gave these countermeasures high priority.

"Speed management in rural areas" was found by many groups of respondents (43% of the total) to be an important countermeasure. This includes countries with low fatality rates, respondents who generally found traffic less safe than 10 years ago, vulnerable road users, public transport use and respondents answering as individuals.

Respondents from the group using public transport and from the group of countries with low fatality rates and low reductions also found design of road sides and furniture important countermeasures. Respondents from countries with high fatality rates and vulnerable road users found "safety impact assessment of land use planning and road infrastructure" important.

Additional comments indicated that speed limits should be understandable and some suggested variable speed limits according to time and day. It was suggested that roads should generally be made better and friendlier, rural roads needed to be improved, safer crash barriers for motorcycles were needed as were better traffic markings and better facilities for pedestrians and cyclist.

Recommendations for action at EU level:

- *Support the development of authoritative guidance/best practice guidelines covering a range of safety engineering issues and establish a process of obtaining agreement on EU level guidelines, e.g. land use planning, speed management, self-explaining, crash–protective roads and innovative approaches which contribute to the Safe System approach.*
- *Apply the EU Infrastructure Directive providing for safety impact assessment, safety audit and safety inspection on TEN-T roads to all roads.*
- *Play a role in the harmonisation of technical standards (skid resistance, barriers, markings, proven new technologies etc) to ensure minimum standards;*

At national, regional and local levels:

- *When revising road functional classifications and hierarchies, ensure that an appropriate match between function, speed limit, design and layout is achieved which takes better account of non-motorised as well as motorised users.*

Road users

Among all the respondents the most important countermeasures regarding road users (licensing, testing, training, information) were assessed to be "social marketing/ campaigns/ safety education to encourage compliance with rules on safe behaviour" (65%), "safety quality of driver licensing and testing standards" (60%) and safety quality of driver training (56%). All groups gave these countermeasures high priority.

Additional comments indicated that training drivers/riders should take responsibility for their actions and understand the human body's weakness. There was a need to increase public awareness in general through better training in schools. They also stressed the importance of starting to teach responsibility and good driving and riding behaviours from a very young age in schools. It

was also suggested that re-testing of motorists should be carried out every five or ten years roads, cyclists' behaviour should become a mandatory part of the test for truck drivers and there should be theoretical and practical training for teenagers who want to use a powered two wheeler.

Recommendations for EU level action:

- *Harmonise further licensing, testing and training for all motor vehicle drivers and improve the quality of the whole package based on study of best practice and research.*
- *Harmonise further qualifications of motor vehicle driving examiners and vehicle inspectors.*
- *Introduce graduated licensing for novice drivers and rider including accompanied driving; probationary periods (driving alone at night time, zero blood alcohol content and heavier demerit point system).*

At national level and local levels:

- *Carry out social marketing campaigns and combined enforcement and publicity to encourage compliance with key safety rules.*

Enforcement

Among all the respondents the most important countermeasures on enforcement were assessed to be "combined publicity and police enforcement of important safety rules" (73%), "deterrence of drinking and driving/riding" (60%) and "enforcement of speed limits" (57%). All groups give these countermeasures high priority.

Additional comments indicated that punishment should be more severe, e.g. penalties for causing death by driving in line with other forms of causing death by negligence or manslaughter. It was also suggested that enforcement is improved through reintroducing police patrols, more enforcement of crash helmet usage and of eye sight testing.

Recommendations for EU level action:

- *Introduce the proposed Directive to harmonise cross-border enforcement*
- *Promote owner liability for automated enforcement offences.*

Vehicle safety

Among all the respondents the most important countermeasures on vehicle safety was assessed to be "preventing crashes through better brakes, lighting, intelligent systems" (54%), "preventing injuries through better occupant protection" (47%), "improving the safety quality of vehicle standards and equipment for heavy commercial vehicles (39%) and cars" (40%). Most groups give these countermeasures on vehicle safety high priority.

The need for "improved safety quality of vehicle standards and equipment for powered two wheelers" was seen as important by respondents from countries with large decreases and by users of public transport. "Vehicle inspection" was also seen as important by respondents from the group of countries with small decreases in fatality rates.

Additional comments highlighted that the safety in cars should focus more on increasing safety for other road users, especially pedestrians and powered two wheelers.

Recommendations for action at EU level:

- *Amend current EU legislation on the promotion of clean, safe and energy-efficient road transport vehicles.*
- *Study the road safety value of a system of continuous compliance to be installed and/or a system for providing technical information for every vehicle*
- *Develop and propose standardized test methods for car to car compatibility; truck to car compatibility and improved methods for front, side and rear impacts.*
- *Legislate at EU level for whole vehicle type approval for powered two wheelers such as effective anti-tampering devices, the fitment of front number plates to aid speed enforcement a mandatory ABS for all two wheeled motor vehicles.*
- *Legislate for a PTW roadworthiness test.*
- *Remove the exemption for use of seatbelts by taxi drivers.*
- *Extend current legislation on seat belt reminders to include fitment in rear seats as well as front seats.*

At national and local levels:

- *Engage fully in international legislative development work.*
- *Support and join the European New Car Assessment Programme.*
- *Encourage financial incentives for the use of protective equipment.*
- *Encourage national car industry to fast track key safety measures.*

Institutional management of road safety

The key problem part of the questionnaire is divided in three sub-questions: Institutional leader-ship and coordination, Legislation, funding and resource allocation, promotion and monitoring and evaluation, knowledge transfer, research. The respondents were asked to rate each of the given alternatives for each branch from 1 to 5 (1 the most important).

Institutional leadership and coordination

The rating was as follows: "lack of political willingness to prioritize road safety", "insufficient integration and coordination of activity" and "lack of high-level review of safety management performance" as the key problems in institutional leadership and coordination.

Respondents from countries with large fatality rates and decreases also found the "lack of definition of road safety objectives" to be an important problem.

Respondents believed in additional comments that governments hesitate about safety regulation for fear of unpopularity. Some believed that the EU could coordinate better to encourage countries to adopt regulations.

Recommendation for action at EU and national level:

- *At EU level, set a shared interim target to reduce deaths by a challenging but achievable percentage within the period 2011 – 2020 as the focus for road safety action. Consider existing proposals and related analysis on specific targeted levels of deaths and serious injury and other objectives.*
- *Specify safety criteria in structural funds, public procurement as well as transport and TEN-T projects.*

Legislation, funding and resource allocation, promotion

The respondents generally cited "limited resources dedicated to road safety", "insufficient harmonization of road safety rules and standards" and "insufficient promotion and communication on road safety" as the key problems in legislation, funding and resource allocation and promotion.

Respondents from the car using group, organisations, from countries with high fatality rates and high casualty decreases and countries with low fatality rates also found the "limited resources dedicated to road safety functions in the main governmental sectors with responsibilities" an important problem. "Inefficient funding mechanisms for road safety" were given a high rating by respondents from countries with high fatality rates and low decreases.

Additional comments stated that there was too little funding, or that money should be used better or that there should be more harmonization.

Recommendations for action at EU, national and local levels:

- *Recognise that a legislative framework for road safety continues to be essential.*
- *Expand harmonisation on road safety cover standards/ type approval, inspection, audit in the fields of infrastructure and vehicles as well as improved user standards (e.g. harmonised maximum blood alcohol limits and speed limits) where EU action can add road safety value.*
- *Establish any benefits for road safety on the internalisation of road crash costs and set out an EU route map for the internalisation of external road crash costs.*
- *At EU level, promote best practice in road safety communication policies and proven measures which reduce deaths and serious injuries in the European Road Safety Charter and the European Road Safety Observatory frameworks.*

Monitoring and evaluation, knowledge transfer, research

Respondents rated the "lack of periodic, independent review of road safety performance", "lack of health sector monitoring to establish under-reporting of injuries" and "lack of harmonised definition of serious injury" as the key problems in monitoring and evaluation, knowledge transfer and research.

Respondents from countries with high fatality rates and high casualty decreases and vulnerable road users also found the "lack of data on distance travelled (vehicle kms)" to be an important problem. "Problems with crash injury classification (serious, light injuries)" were given a high rating by respondents from countries with low fatality rates and high casualty decreases.

In additional comments respondents found lack of knowledge and knowledge sharing in general, lack of an international classification of injuries, according to their seriousness, and the lack of use of hospital records problematic.

Recommendations for action at EU level:

- *Monitor the effects of road safety targets, strategies, individual programme measures including European Road Safety Charter inspired measures and establish a high-level review team to report on progress and make further recommendations based on evaluation.*
- *Develop, promote and establish a single EU-reporting system for crash injury, exposure and other data.*
- *Adopt a standard EU definition for 'severe' and 'minor' injury and implement across databases.*
- *Ensure computerized health sector monitoring of death and serious injury in road crashes in every Member State and conduct studies to ascertain levels of under-reporting in CARE system data.*
- *Establish authoritative EU best practice guidelines agreed by Member States for activity across the road safety management system.*
- *Promote the development of more 'best practice' resources/ tools for implementation e.g. road safety management capacity review and target-setting tools.*

At national and local levels

- *Establish capacity in-house and with external partners of road safety research and establish national research strategy.*

The role of the EU

Integration with other policies

Most respondents (66%) believed that the integration of road safety into other areas of EU policy has only been partially effective and 20% thought that that integration was ineffective. In particular, respondents recommended more integration in "education policy", "health policy", "environmental policy" and "research policy". Respondents from many groups also believed integration into "social policy" and "information and communication technology policy" important.

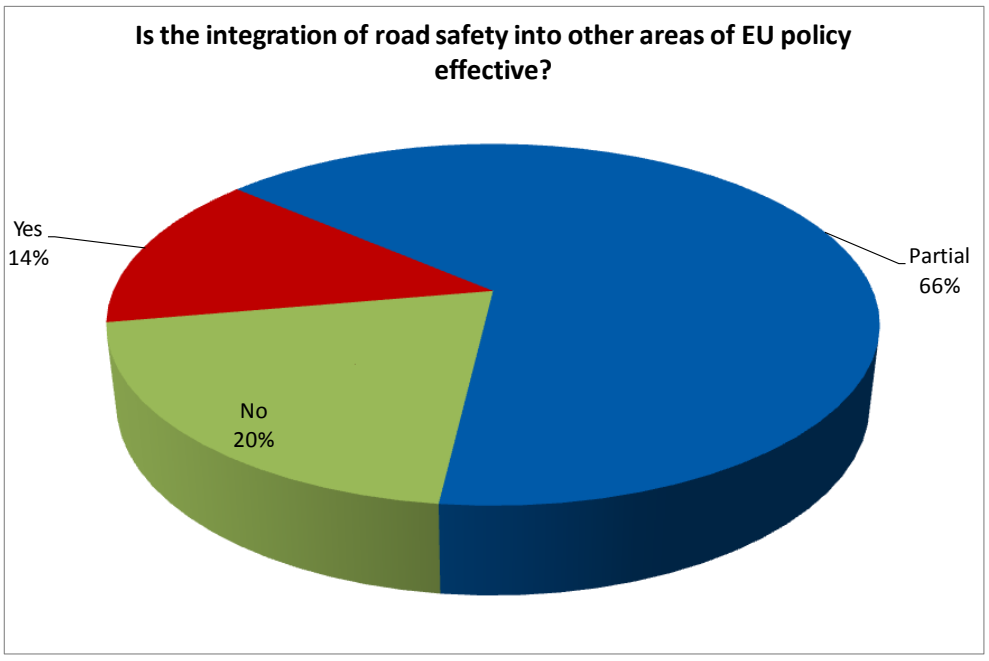

Figure 24 Is the integration of road safety into other areas of EU policy effective.

In additional comments on integration of road safety into other EU policies respondents called for improvement in EU policy. On the other hand, 73% of respondents thought that EU policies did not create obstacles to prevent effective road safety policies at national, regional and local levels.

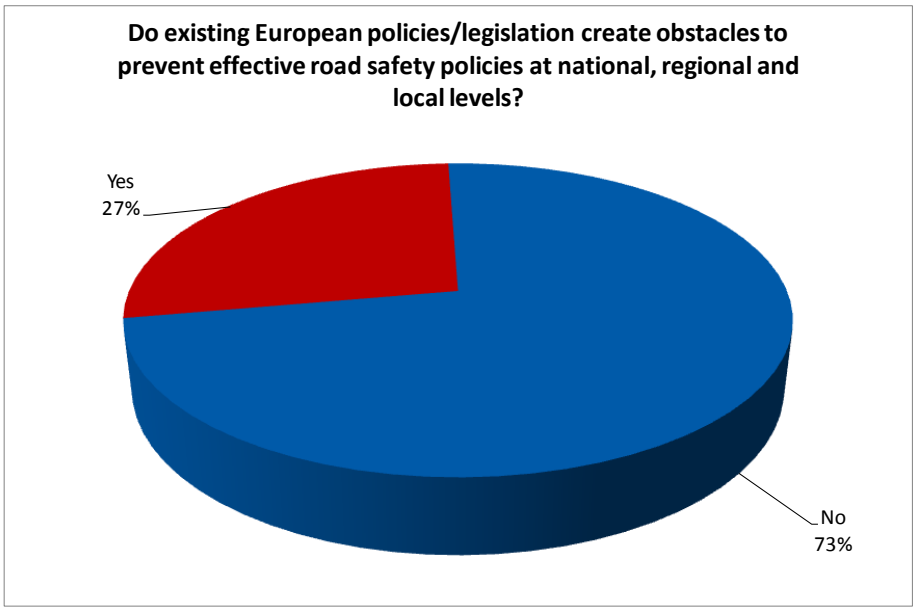

Figure 25 *Do existing European policies/legislation create obstacles to prevent effective road safety policies at national, regional and local levels?*

Respondents believed in their additional comments that EU policies created obstacles for effective road safety policies at national, regional and local levels. These either represented the hope for stronger intervention at EU level with more harmonization of regulation in the EU countries or a belief that the EU should let countries decide autonomously about road safety policy.

Recommendations for action at EU, national and local levels:

- *Review horizontal and vertical coordination arrangements and capacity across government against international best practice. Transport, health, justice and police, work, environment, industry and finance will form the key partnerships which can help to deliver road safety results. Engage business and civil society in the consultative levels of the decision-making hierarchy.*

Priority for actions in the Road Safety Action Programme

Respondents generally indicated that the priority areas of actions should be "funding effective road safety activities", "proposing a European road safety objective to 2020", "supporting road safety research" and "applying road safety standards to all roads". Many respondents also thought "legislation and recommendations where the EU has competence" an important action.

The most common additional response was the need to harmonise regulations. Others suggested setting a goal for the reduction of number of deaths and injuries, etc.

Recommendation for action at EU and national level:

- *At EU level, set a shared interim target to reduce deaths by a challenging but achievable percentage within the period 2011 – 2020 as the focus for road safety action. Consider existing proposals and related analysis on specific targeted levels of deaths and serious injury and other objectives.*
- *Review resource levels needed for new programmes.*
- *Provide financial incentives and premium discounts for the take up of demonstrably effective road safety equipment and promoting clearer incentives for safe driving.*
- *Fund twinning and demonstration projects to develop good practice road safety management capacity and to support effective RSAP measures in EU and neighbouring countries with lower levels of safety performance.*
- *Specify safety criteria in structural funds, public procurement as well as transport and TEN-T projects.*
- *Recognise that a legislative framework for road safety continues to be essential.*
- *Expand harmonisation on road safety cover standards/ type approval, inspection, audit in the fields of infrastructure and vehicles as well as improved user standards (e.g. harmonised maximum blood alcohol limits and speed limits) where EU action can add road safety value.*
- *Support the development of authoritative guidance/best practice guidelines covering a range of safety engineering issues and establish a process of obtaining agreement on EU level guidelines, e.g. land use planning, speed management, self-explaining, crash–protective roads and innovative approaches which contribute to the Safe System approach.*
- *Apply the EU Infrastructure Directive providing for safety impact assessment, safety audit and safety inspection on TEN-T roads to all roads.*
- *Expand Cross Border Green Corridor to Cross Border Green and Safe Corridor to include road safety considerations.*
- *Play a role in the harmonisation of technical standards (skid resistance, barriers, markings, proven new technologies etc) to ensure minimum standards;*

New technologies

Generally all groups of respondents (77%) believed there was a need for EU action to increase the market acceptance of new technologies, innovative and intelligent transport solutions. In particular they saw "establishing the safety effects of new technologies prior to widespread application" and "intelligent speed adaptation / speed adjust / speed alert / speed limiters" as possible fields of action.

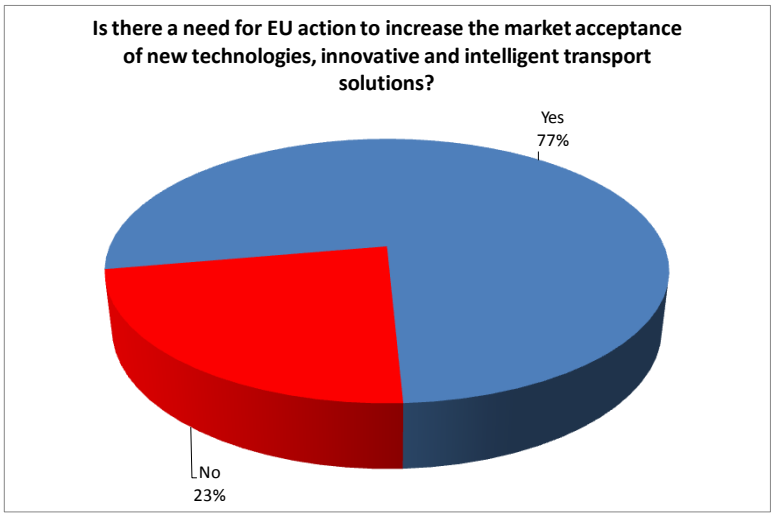

Figure 26 Is there need for EU action to increase market acceptance of new technologies, innovative and intelligent transport solutions.

Many respondents also found "advanced braking and handling systems in all motor vehicles (like ESC/ESP)", "collision avoidance systems", "alcolocks", "dynamic traffic management", "event data recorder", "pedestrian protected car fronts", "supporting mapping of speed limits across Europe" and "eCall" to be important EU actions on new technologies.

Recommendations for action at EU level:

- *Require the fitment of alcolocks in heavy goods vehicles and public transport vehicles and promote their use.*
- *Promote effective technologies such as ISA, alcolocks, seat belt reminders in procurement policies to encourage consumer uptake.*
- *Provide consumer information on the comparative safety of vehicles to encourage rapid changes to vehicle design before 2020.*
- *Provide a route map for the implementation of Intelligent Speed Adaptation and Event Data Recorder systems.*
- *Develop safety assessment procedures for intelligent systems, human machine interface (HMI) evaluations, identification of systems with greatest casualty potential.*
- *Develop and implement a systematic programme of evaluation of EU legislation and vehicle technologies including cost-benefit analyses.*
- *Increase focus on the needs of vulnerable road users in new vehicle safety technologies including pedestrian detection devices, motorcycle design and equipment (e.g. anti-lock braking).*
- *Carry out research into the safety aspects of electric vehicles.*

At national and local levels:

- *Carry out national research and monitoring of vehicle safety measures.*

Additional comments suggested promotion of new technologies and focus on cost effective technologies.

3.3.5 Written contributions

The issue

Involvement in a road traffic crash is the leading cause of death and hospital admission for EU citizens under 45 years. Against the background of 39,200 road traffic deaths in 2008 (EU27) and an annual socio-economic cost estimated at €180 billion (based on willingness to pay principle), road safety continues to be a priority area for action of the European Union[55, 56]

In spite of some progress, the objective of halving the number of road fatalities by 2010 will not be achieved; in 2008 as many as 39,200 (provisional number) citizens of EU countries were still killed in traffic.

Why address issue

The European Commission has carried out a consultation and data collection exercise to prepare a new European Road Safety Action Programme covering the period 2011-2020.

In addition to the Internet questionnaire approximately 50 respondents also submitted written contributions in response to the internet consultation. These comprised contributions from:

- Member States - Contributions were received from governments of seven EU and EEA countries: Belgium, France, Norway, Scotland (UK), Spain, and Sweden and a working group from Germany.
- International organisations - Contributions were received from a broad range of international organisations comprising non-governmental associations representing users, safety-related organisations, professional sectors as well as organisations representing trade and industry interests.
- Companies – These included vehicle manufacturers and safety equipment manufacturers.
- National associations - Written contributions were received from several national associations in France, Italy, Spain, Sweden and the UK.
- Individual expert.

Some contributions were substantial comprising links to additional policy and position papers on a range of road safety management issues and strategies. Others comprised short statements concerning priorities for the next road safety action programme or provided further information and recommendations on specific targets, interventions and institutional arrangements.

Aims of Written Contributions

The objective was to engage European citizens, governmental stakeholders at national, regional and local levels, business and professional sectors, in identi-

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55 Annual Statistical Report Based on data from CARE/EC, 2008, SafetyNet, ERSO, 2008

56 ETSC (2008) 2nd Road Safety PIN Report. Brussels, Belgium

fying the priority actions to address the unacceptable and costly levels of road death and serious injury across the EU.

This section presents an overview of the range of recommendations received for action on road safety management by the EU and Member States.

Main conclusions

What are the key road safety problems?

The written contributions identified problems across the road safety management system: in the results achieved to date; the scope of intervention as well as institutional management problems which determine the level of implementation of countermeasures.

Levels of death, serious injury and socio-economic cost

Several contributions (e.g. Sweden, Scotland, ETSC, EARPA and FEVR) emphasised that death and serious injury is unacceptable and most stakeholders stated that much more needed to be done. EuroRAP noted that health and safety risks have been transformed in all other fields in the last few decades. Yet we face risks on the roads some 10-30 times greater than any other risk in daily life. Sweden, ETSC and FEVR recommended that road traffic deaths and serious injuries should be acknowledged by the health sector (EU and nationally) as a leading public health problem.

Priority casualty groups

In general, the written contributions indicated that the casualty groups which determine the priorities for reductions in total deaths in EU countries are car occupants, powered two-wheeler users (motorcyclist deaths are increasing) and pedestrians with young novice drivers, powered two-wheeler users, pedestrians and cyclists being at highest per capita risk.

The Flemish Ministry indicated that analysis of crash data showed that the risk of a crash for young male drivers is more than four times higher than for male drivers aged 25 to 60 years. The risk of a serious crash for young people is over three times as high as for other age groups. Scotland was concerned about the safety of children, young drivers and casualties on rural roads. France was also concerned about young drivers and motorcyclists and AISCAT was concerned about pedestrians and young novice drivers. ACEM noted that moped and motorcycle riders are 18 - 20 times more likely than car drivers to be seriously injured when on the road. ACEM stated that the great disparity in road safety performance and risk exposure for powered two wheelers (PTW) riders between countries, regions and cities in Europe required urgent strategies, actions and activities and should be considered as one of the main challenges to be met by the next Road Safety Action Programme. Concern for the increasing problem of motorcyclist deaths was shared by several organisations such as ETSC, the FIA Eurocouncil and the Swedish Association of Motorcyclists.

Several contributions e.g. AGE, ETSC, IBSR and FEVR mentioned the problems of an ageing society. In particular, the physical vulnerability of many older road users contributing to severe outcomes in road crashes will be an issue of increasing importance in the design and operation of the road traffic system.

The T&E and ETF highlighted the importance of reducing the severity of crashes involving heavy duty vehicles. While CLECAT and IRU noted that the road crash was usually due to the error of other road users, T&E noted that road crashes involving heavy goods vehicles are more severe, due to the larger size and mass of the vehicles. Heavy trucks are involved in 14% of fatal crashes in Europe, with 92% of the fatalities outside of the truck (i.e. other road users or in the other vehicles), equating to 6,500 lives. On a per-km basis, lorries are twice as dangerous as passenger cars.

While a minor problem for road safety but a major problem for rail safety, the need to include safety on level crossings in the scope of the action programme was also highlighted by the ELCF and the RSSB.

Scope of intervention

System-wide approach

Many contributions acknowledged that serious and fatal injuries in road crashes need to be addressed by system-wide interventions and an integrated approach as well as a data-led, research-based approach (Sweden, Belgium, CEA, CLECAT, ETSC, ERTRAC, IBSR and Mobility for Prosperity in Europe). This was seen generally as comprising the planning, design and operation of the network, improvement in vehicle safety, securing compliance with key road safety rules through education, training and enforcement, as well as improved post impact care (ETSC and FEVR). ERTRAC noted that the challenge for road safety is to continuously improve safety in the road transport sector through an integrated approach covering the study of crash injury causation and epidemiology, preventative and protective safety, cooperative systems, and emergency management.

Addressing human limitations and providing safety for all users

Sweden highlighted that the main problem for road safety is that roads, streets and vehicles as an integrated system are not adapted to human capacity and tolerance. In many additional written contributions the need to better address the safety of pedestrians, cyclists, and powered two wheeler users in road traffic policy, infrastructure management, vehicle design, education and enforcement was commonly cited (e.g. ACEM, Belgium, CTC, ETSC and France). EuroRAP noted that the way risk is managed on the road network is 'unacceptable, unreformed, costly and a quarter of a century out of date'.

Institutional management of road safety

Institutional leadership, coordination and policy integration

The lack of political willingness to prioritize road safety and insufficient integration and coordination of activity were seen as key problem areas by respondents (e.g. ETSC and FEVR). More integration was needed in education policy, health policy (Sweden, ETSC and FEVR) environmental policy (ETSC, Sweden and T&E) research policy (ETSC, and social and work policy (e.g. ETF, ETSC and Sweden).

Recommended actions

Political leadership and institutional management

Sweden noted that a recurring problem for road safety issues at EU and national levels is the lack of institutional responsibility. In their written contributions, ACEM, ETSC and Sweden saw strengthened institutional management capacity in pursuit of a long-term shared vision and interim targets as the major nec-

What results do we want to achieve?

essary step in making a difference to the road safety situation in the next decade in Europe.

A vision for the long term

Several international organisations and companies proposed the adoption of a vision for road safety in the long term in the additional written contributions. These were variously 'Vision Zero' (Sweden, EARPA, FEVR, Swedish Motorcyclists Association), 'Sustainable Safety', known generically as 'Safe System' **(**ACEM, EuroRAP, FEVR) as well as 'Road safety is right and responsibility for all' (ETSC).

Main recommendation for action at EU and national level:

- *Adopt a long-term shared vision for future safety of the road traffic system (Safe System) for the European Road Safety Action Program and national road safety strategies in line with international good practice.*

Interim quantitative targets 2011-2020

Contributions highlighted the importance of combining an EU vision with the setting of a shared realistic, but achievable interim quantitative targets for 2011-2020. Many organisations supported the setting of further measurable EU targets. ETSC noted the value of the EU current target in stimulating new activity and how it was nearly reached by the original group of Member States involved. ETRAC noted that the challenge was to ensure that road safety is not affected negatively by changes following in the transport system as a result of competing pressures on the economy and the environment. The majority view in the additional written contributions across the range of contributors involved e.g. AGE**,** ETSC**,** FIA**,** T&E, Deutsche Post, Volvo, Michelin, FEVR, ACEM**,** Bosch, IBSR and ERTRAC was to target separately the reduction in numbers of deaths and serious injuries. Only CEA advocated a focus on crash prevention. Various suggestions were made. ETSC and the German Working Group, for example, on the basis of analysis of past and future trends recommended that a fatality reduction target of 40% would be challenging but achievable. Sweden proposed 50% and noted that the new Swedish strategy sets targets for a number of important indicators (such as vehicle safety, speed enforcement and seat belt use) which might eventually be considered at European level. The French authorities also supported targeting reductions in speed and drinking and driving. Several organisations thought that specific targets for children, pedestrians, two wheeler users, older road users would be appropriate. The FIA called for a range of targets with a headline target to 2020 aiming for a 40% reduction target for deaths. FIA also recommended bringing the safety level of the TERN roads and 25% of the non-TERN roads (100% by 2050) up to the actual state of the art.

AGE recommended that each member state in the EU and in the EEA should establish national action plans for prevention of injuries for elderly people. The ERF also supported the setting of national targets in the action programme.

Main recommendation for actions at EU and national level:

- *At EU level, set a shared interim target to reduce deaths by a challenging but achievable percentage within the period 2011 – 2020 as the focus for road safety actions. Consider existing proposals and related analysis on specific targeted levels of deaths and serious injuries and other objectives.*

- *At national level, set quantitative targets.*

Reducing socio-economic costs

The need to reduce unacceptable high socio-economic costs associated with road traffic crash injury was also cited as a key objective for the next road safety action programme. While estimates are available, the CEA recommended that further work is carried out to establish the different elements of crash costs at EU level.

Main recommendation for action at EU and national level:

- *Establish where necessary and update annually estimates of EU and national socio-economic costs of road crashes using best practice methods.*

Leadership, integration of policies and coordination arrangements

The ERF, ETF and ETSC highlighted the need for the establishment of a European Road Safety Agency. A case for establishment was also made in a written contribution from an invited expert from Spain to the European Parliament's mini-hearing in road safety: *' Some of the areas where this European road safety organization could play an active role are: the type approval of road vehicles; the interoperability of the road transport system; road signs, road design; future coordination and guidance of infrastructure safety management systems, including safety on the trans-European road network; the European Road Safety Observatory (in charge of collecting accident data & research results); the continuous monitoring of 4th Road Safety Action Programme; the European Road Safety Charter; best practice information collection and monitoring of national policies and casualty reduction; the European Road Safety Day or Conference; cross-border enforcement information systems and the promotion of corporate road safety policies in Europe."*
The ERF emphasised that such an agency would need to be supported by a Committee of Member State representatives on road safety.

Shared action

The need for shared action across sectors was highlighted. Sweden noted that the responsibility for road safety outcomes rests not only on individual institutions, but with a broad group of actors. It was important to ensure that authorities at various levels, organizations, businesses and other stakeholders were involved in work towards improved road safety. A good example of 'shared action' is the European Road Safety Charter. The written contribution from P.A.U. education, the company which is rendering administrative and technical assistance to the Commission in this field, explains clearly the merits of such an approach for involving all stakeholders, including citizens, who want to take initiatives for improving road safety. The important role of business can be illustrated by the fact that approximately half of road transport is conducted by commercial and public passenger transport. Several other organisations pointed to the value of establishing road safety policies at work including ETSC and the National Council of Automobile Professionals (France). T&E, noted that the EU could make a huge contribution to make vehicles, infrastructure and traffic mix safer and cleaner. Urban safety management policies provided a virtuous circle of both safety and the environment. Volvo suggested that the Cross Border Green Corridor might be expanded to include road safety considerations. AGE emphasised the need for health monitoring of road traffic injury and the importance of integrating road safety into health policies (FEVR and ETSC**).**

This entails improvements in coordination of road safety horizontally across government between different sectors with road safety responsibilities as well

as vertically between EU, national, regional and local levels which was highlighted by EUROCITIES.

Main recommendations for action at EU, national and local levels:

- *Review lead agency arrangements and capacity against good practice.*
- *Consider the establishment of a European Road Safety Agency at EU level.*
- *Review horizontal and vertical coordination arrangements and capacity across government against international best practice. Transport, health, justice and police, work, environment, industry and finance will form the key partnerships which can help to deliver road safety results.*
- *Engage business and civil society in the consultative levels of the decision-making hierarchy.*

Legislation and harmonisation

Most organisations in their written contributions confirmed that EU and national legislation to set minimum standards for safety but offering a high level of protection for the road network, vehicles and users continues to be necessary and appropriate. Specific examples highlighted in the written contributions were the need to harmonise key traffic regulations e.g. speed limits and blood alcohol limits (0.5 g/l for drivers in general and 0.2.g/l for commercial, public transport and novice drivers was recommended).

A view expressed by several organisations (e.g. ETSC, CEA and IRU) was that interventions needed to be underpinned by research and development, systematic monitoring and evaluation, cost-benefit assessment and large-scale demonstration in the case of new technologies. Specific recommendations for the range of interventions with potential for legislative action are set out in the next section.

Main recommendations for action at EU, national and local levels:

- *Recognise that a legislative framework for road safety continues to be essential.*
- *Expand harmonisation on road safety cover standards/ type approval, inspection, audit in the fields of infrastructure and vehicles as well as improved user standards (e.g. harmonised maximum blood alcohol limits and speed limits) where EU action can add road safety value.*
- *Carry out cost-benefit analyses of proposed legislative measures to ensure that the Commission's requirement of achieving a positive impact on road safety and public health while also improving mobility, energy, the environment and the economy.*

Funding and resource allocation

Many stakeholders urged EU to fund effective road safety activity, particularly in countries of the last EU enlargement and in neighbouring countries. This included twinning and networking activity and support for the NGO sector across Europe (ETSC). The EU, Member States and the insurance industry were also urged to provide financial incentives and premium discounts for the take up of demonstrably effective road safety equipment and promoting clearer incentives to safe driving, pay-as-you drive schemes.

Main recommendations for action at EU and national levels

- *Review resource levels needed for new programmes.*
- *Provide financial incentives and premium discounts for the take up of demonstrably effective road safety equipment and promoting clearer incentives for safe driving.*
- *Fund twinning and demonstration projects to develop good practice road safety management capacity and to support effective RSAP measures in EU and neighbouring countries with lower levels of safety performance.*
- *Specify safety criteria in structural funds, public procurement as well as transport and TEN-T projects.*
- *Support road safety research as well as demonstration projects.*
- *Support EU umbrella NGOs and the extension of networks of NGOs active in the field of road safety.*
- *Promote cost-benefit analysis in resource allocation.*

Promotion

The additional written contributions from several stakeholders emphasised that road safety requires promotion at a high-level both inside and outside government, need to be based on good practice and that a shared vision of the future safety of the traffic system assists in promoting road safety.

Sweden pointed to the crucial role of the EU in promoting the emergence of innovative in-vehicle technical solutions to tackle serious road safety problems and several other organisations urged the Commission to promote road safety equipment in procurement policies. One vehicle for this is to amend current EU legislation on the promotion of safe, clean and energy-efficient road transport vehicles and to stimulate the demand for safety equipment by using in-house travel policies.

Main recommendations for action at EU level, national and local levels:

- *Promote a shared EU road safety vision and EU and national targets at the highest levels of Government, business and civil society.*
- *Show organisational leadership in public and private sectors by introducing in-house safe travel policies.*
- *Amend EU legislation on the promotion of clean, safe and energy-efficient road transport vehicles.*

Monitoring and evaluation

The written contributions highlighted the importance of improving data for exposure, final and intermediate outcomes at national and EU levels, particularly for vulnerable road users such as pedestrians, cyclists and older road users across the EU. More information needs to be collected on levels of speed, drinking and driving, occupant restraint use, crash helmet use, safety quality of infrastructure and vehicles and the response of the emergency medical system. The need for harmonised definitions for data systems and definitions of 'serious' injury was highlighted by organisations such as AGE, EUROCITIES, ECF, ERF, ETSC, Mobility for Prosperity in Europe, Deutsche Post, The German Working Group, Volvo, AISCAT and FIA. The T&E highlighted the importance of collating information on vehicle specifications. AGE and FEVR highlighted the importance of health sector monitoring of road traffic injury. The FIAB proposed compulsory risk analysis to assess road risks. The importance of monitoring EU legislation and agreements was also underlined by e.g. by ETSC and Swedish Motorcyclists Association (daytime running lights).

Main recommendations for action at EU level:

- *Monitor the effects of road safety targets, strategies, individual programme measures.*
- *Develop, promote and establish a single EU-reporting system for crash injury, exposure and other data.*
- *Adopt a standard EU definition for 'severe' and 'minor' injury and implement across databases.*
- *Ensure computerized health sector monitoring of death and serious injury in road crashes in every Member State and conduct studies to ascertain levels of under-reporting in CARE system data.*
- *Stimulate detailed in-depth investigations based on established protocols.*
- *Establish regular public opinion surveys on road safety.*

At national and local levels

- *Establish/improve quality of crash injury databases and data sharing arrangements between police, roads and health authorities and establish levels of under-reporting.*
- *Carry out annual surveys and analysis to collect key exposure data and safety performance data and establish national databases on intermediate outcome data (e.g. speed, seat belt use in normal traffic) and institutional output data (e.g. numbers of breath tests, speed checks etc.) in line with best practice to inform national strategies on speed management, increasing seat belt use, reducing drinking and driving and improving roads and vehicle fleet quality.*
- *Review road safety policies, strategies and their implementation.*

Research, development and knowledge transfer

Many written contributions highlighted stakeholder support for continuing research and knowledge transfer which is seen as key to past successes in reducing casualties, a pre-requisite for further improvement and a means by which the Europe can contribute to be the global leader in road safety. EARPA, for example, noted that past EU support for R&D (research and development) had resulted in the European industry playing a leading role in automotive safety and outlined priority areas as intelligent safety and new safety technologies; structures and materials; human aspects and assessment methods for crash test tools. AGE highlighted the importance of research on injuries to elderly people. Volvo recommended large scale demonstration projects. ERF believed that further research is needed to improve understanding about the challenges posed to urban infrastructure by an ageing population and other vulnerable users.

The Spanish Ministry of Science and Innovation highlighted, in particular, a range of research and development needs for electric vehicle technology and its deployment in the fields of heavy duty vehicles; electrification of urban and road transport; logistics and co-modality and the safety aspects of electric vehicles including promising technologies such as ADAS; vulnerable road user safety; the functional reliability if components and systems and safety-related issues related to new electrical components and high voltage. The Institution of Engineering and Technology (UK) commented in-depth on the safety implications of the extensive use of electric vehicles and intelligent transport systems and believed it to be essential for EU countries to maintain an ongoing research programme.

There was also wide support for the establishing of best practice guidelines as articulated by ETSC, Mobility for Prosperity in Europe, EUROCITIES, P.A.U.

education and ECF. Sweden noted that it is developing a *Vision Zero Academy* to build knowledge on how innovation and penetration can be more effective, and transfer knowledge and best practices to all relevant stakeholders openly and inclusively. The ACEM and ETSC highlighted the need for facilitating networking and twinning to strengthen institutional management across Europe.

Main recommendations for action at EU level:

- *Carry out a range of research to build new knowledge about road safety.*
- *Establish authoritative EU best practice guidelines agreed by Member States for activity across the road safety management system and promote the development of more 'best practice' resources/ tools for implementation e.g. road safety management capacity review and target-setting tools.*
- *Support capacity building demonstration projects in countries with lower safety performance.*

At national and local level:

- *Establish capacity (in-house and with external partners) of road safety research and establish national research strategy.*
- *Develop and promote best practice guidelines particularly in the enforcement and engineering fields.*
- *Embark on 'peer to peer' twinning activity and professional training at decision-making and practitioner levels for knowledge transfer on effective and innovative activity.*

Road infrastructure

The scope of the intervention/ countermeasure set

Principally, the problems identified by respondents centred on the need for the safety of all road users – both motorised and non-motorised – to be taken into account in road infrastructure planning and design; the need to separate dangerous mixed road use; the need for improved speed management; the setting and enforcement of appropriate speed limits and provision of crash protective roadsides which take better account of human tolerance limits.

Several organisations recommended the adoption of a Safe System (self-explaining roads, more safety-sensitive road hierarchies, forgiving roadsides) e.g. ETSC, FIA, EuroRAP, IBSR and the Spanish Road Association. EuroRAP recommended that minimum standards based on 4 star EuroRAP levels for the TEN-T; the establishment of more appropriate road hierarchies also highlighted by the Flemish Ministry, risk mapping and performance rating and more investment for safe road design were also proposed. The ERF and the Spanish Road Association proposed that harmonised standards for road restraint systems (RRS) on EU roads should be examined and common guidelines for the installation and maintenance produced. Other organisations also supported harmonised technical specifications for road safety engineering. EUROCITIES proposed mandatory safety audit for all EU-funded schemes and Deutsche Post called for regulations and guidelines focused on the safety design, inspection and maintenance of road infrastructure. The Swedish Motorcyclists Association called for more bus lanes to be opened for motorcycles to reduce accidents in congestion and queues. Volvo suggested that the Cross Border Green Corridor might be expanded to include road safety considerations. The Spanish Road

Association called for the creation of road safety units by providers and operators of the road network.

TYROSAFE called for improved action to optimise skid resistance and Sicurezza e Ambienta spa, proposed that the EU should require Member States through a harmonized standard to restore roads after road crashes by removing toxic materials and solid waste scattered by a road crash.

ACEM, ERF, ETSC, the German Working Group and Spanish Road Association believed that the safety engineering elements of the TEN-T infrastructure Directive 2008/96.EC should be taken up widely on all the road network.

In written contributions various Member States governments (Belgium, French authorities and Sweden) as well as international organisations highlighted the value of median barriers and rumble strips, roundabouts, as well as speed management in residential areas.

Many organisations e.g. ETSC, Mobility for Prosperity in Europe, EUROCITIES, ECF, P.A.U education and the Spanish Road Association highlighted the importance of exchanging best practice and providing guidelines on road safety engineering e.g. urban safety management. The need for EU, national and local action on speed management (both for engineering e.g. 30km/h zones and police and automated enforcement), bearing in mind the low human tolerance thresholds of pedestrians, children, older users and two wheeler users was highlighted by several respondents such as the Flemish Ministry, Sweden, T&E, ETSC, and EUROCITIES. The FIA and the Spanish Road Association supported action and best practice guidelines on self-explaining roads and forgiving roadsides.

Main recommendations for action at EU level:

- *Support the development of authoritative guidance/best practice guidelines covering a range of safety engineering issues and establish a process of obtaining agreement on EU level guidelines, e.g. land use planning, speed management, self-explaining, crash–protective roads and innovative approaches which contribute to the Safe System approach.*
- *Apply the EU Infrastructure Directive providing for safety impact assessment, safety audit and safety inspection on TEN-T roads to all roads.*
- *Expand Cross Border Green Corridor to Cross Border Green and Safe Corridor including road safety considerations.*
- *Set minimum standards based on 4 star EuroRAP levels for the TEN-T.*
- *Establish road safety engineering criteria for inclusion in EU project investment.*
- *Play a role in the harmonisation of technical standards (skid resistance, barriers, markings, proven new technologies etc) to ensure minimum standards.*
- *Promote, standardise and provide for deployment of ISA (Intelligent Speed Adaptation) and other demonstrably effective technologies.*
- *Promote consumer information on the risk of specific roads particularly in countries of the last EU enlargement and in neighbouring countries.*
- *Promote better crash injury and survey data on road network risks.*

- *Fund demonstration projects and research evaluation for innovative safety engineering, promising new technologies as well as co-operative efforts between vehicle and infrastructure providers to achieve safe travel on the network.*

At national, regional and local levels:

- *When revising road functional classifications and hierarchies, ensure that an appropriate match between function, speed limit, design and layout is achieved which takes better account of non-motorised as well as motorised users.*
- *Adopt Safe System approaches to road safety engineering and periodically review of national standards, guidelines and processes against international good practice.*
- *Implement 30km/h zones in residential areas to improve vulnerable road user safety.*
- *Support and join EuroRAP/iRAP.*
- *Conduct EuroRAP/iRAP risk mapping and protection scores to help assess the safety quality of roads.*
- *Apply safety impact assessment, audit and inspection procedures to new road and improvement projects.*

Road users (licensing, testing, training, information)

In the additional written contributions, the need for harmonised improvements in awareness-raising, education and training was cited by several organisations such as the FIA, IBSR, Spanish Road Association, the Swedish Motorcyclists Association , ADAC, AISCAT and AGE, which suggested the establishment of a European Road Safety Day, the Flemish Ministry, FIA, EUROCITIES and Norauto.

Driver training was highlighted by several organisations and CLECAT, IRU, the German Working Group and Deutsche Post wanted to see action directed at improving road user behaviours in general. E.g. the German Working Group advocated for the introduction of accompanied driving from the age of 17 for driving licences. ACEM and FIA advocated the EU harmonisation of mandatory training to improve PTW safety. Honda highlighted the value of PTW training which enhances hazard perception skills. Norway provided a contribution promoting the GADGET model for driver training and the need for an integrated approach to powered two wheeler safety. This involves cooperation between all stakeholders; placing motorcycling in overall transport policy and infrastructure management (also supported by the Swedish Motorcyclists Association) and the introduction and evaluation of evidence-based countermeasures founded on scientific research. The European trade associations (EUROM-CONTACT, EFLIN, EUROM I, ECOO, JOCEU) noted that the consultation did not include all fitness to drive issues and recommended further EU action on eyesight testing.

IRU noted that adequate financing of infrastructure development is a prerequisite to achieve road safety. Benchmarked to national/local accident statistics, the IRU recommends that a percentage of this financing should be dedicated to driver training.

Main recommendations for EU level action:

- *Harmonise further licensing, testing and training for all motor vehicle drivers and improve the quality of the whole package based on study of best practice and research.*

- *Review age of access to different motor vehicles based on international best safety practice.*
- *Harmonise further qualifications of motor vehicle driving examiners and vehicle inspectors.*
- *Introduce graduated licensing for novice drivers and rider including accompanied driving; probationary periods (driving alone at night time, zero blood alcohol content, and a stricter demerit point system).*

At national level and local levels:

- *Carry out social marketing campaigns and combined enforcement and publicity to encourage compliance with key safety rules.*

Road users (police enforcement)

This section relates to police enforcement as opposed to in-vehicle enforcement measures which are covered in the vehicles section.

The priorities for enforcement were assessed to be combined publicity and police enforcement of important safety rules, deterrence of drinking and driving/riding and enforcement of speed limits, seat belt and crash helmet use and cross-border enforcement (e.g. Flemish Ministry, French authorities, ETSC and the Spanish Road Association. A range of recommendations were made in relation to improve compliance with key safety rules. The need for police enforcement on speed and drink and drug driving and lack of seat belt use in particular was highlighted by many organisations e.g. ETSC, AISCAT and ADAC. The role of the vehicle in helping to achieve compliance through seat belt reminders, ISA, alcolocks etc. was also acknowledged.

Sweden highlighted the fact that drivers under the influence of alcohol cause the deaths of at least 10,000 people on EU roads every year. Sweden works both to stimulate the market for the voluntary introduction of alcolocks, to develop the alcolock technology itself and to change the rules so that convicted drink-drivers can only hold a driving license if they use an alcolock. Swedish companies have already developed a second generation of alcolocks that does not involve blowing into a special device. Sweden would like to work within the EU towards the voluntary introduction of alcolocks in commercial traffic. The Swedish Transport Minister has proposed to the Commission that a strategy be established in the road safety action programme for the introduction of technologies that prevent drink-driving. Such a strategy should contain a recommendation to use alcolocks to prevent drink-drivers from re-offending and objectives for the introduction of preventive use of alcolocks in commercial traffic. It should also include objectives for developing and introducing new technologies that discover and warn if a driver is under the influence of alcohol or drugs or suffering from tiredness or illness in all vehicles.

Additional comments called for penalties to be more severe, e.g. penalties for causing death by driving in line with other forms of causing death by negligence or manslaughter. It was also suggested that enforcement is improved through reintroducing police patrols, more enforcement of crash helmet usage (although the ECF did not support mandatory cycle helmet wearing) and of eyesight testing. The Swedish Motorcyclists Association believed that tradi-

tional police speed control methods are the best means of improving motorcyclist compliance with speed limits and also advocated the fitment of alcolocks.

In the additional written contributions there was a lot of support for an agreed EU Directive action on cross-border enforcement e.g. from the French authorities, Mobility for Prosperity in Europe, FEVR, ETSC, Volvo, CLECAT and EUROCITIES.

Main recommendations for EU level action:

- *Introduce the proposed Directive to harmonise cross-border enforcement.*
- *Promote owner liability for automated enforcement offences.*
- *Introduce rehabilitation programs for offenders.*

Vehicle safety

The additional written contributions recommended a combination of legislative standards, safety ratings, incorporation of vehicle safety into public procurement policies underpinned by research and development and systematic monitoring and evaluation. There were many specific suggestions for action which are summarised in the recommendations section.

Many additional comments highlighted that importance of safe car design for other road users, especially pedestrians and powered two wheelers. Vehicle inspection was also seen as important by respondents (Spanish Road Association, the German Working Group, DEKRA and VdTÜV). Several respondents (e.g. DEKRA, CLECAT and T&E) advocated the need for a system of continuous compliance to be installed and/or a system for providing technical information for every vehicle.

The Flemish Ministry, the German Working Group and Sweden highlighted the importance of harmonised action on vehicle safety, particularly in implementing new technologies such as ISA, ICC, EDRS, CAS and SBRs. EU action to improve the take up of new safety technologies and equipment in vehicles was highlighted by many organisations. Several organisations wanted the EU and Member States to provide clear incentives for safety equipment in public procurement e.g. Sweden, CLECAT, FIA, EUROCITIES, ETSC, Volvo and Deutsche Post.

ETSC, FIA and ADAC recommended the establishment of type approval regulations for a range of crash avoidance, crash protection technologies, both current and new. FIA advocated the establishment of whole vehicle type approval for powered two wheelers and the French Police highlighted the need for mandatory fitment measures such as effective anti-tampering devices; front number plates, mandatory ABS for all two wheeled motor vehicles (as did ADAC) and a PTW roadworthiness test. The Swedish Motorcyclists Association called for anti-locking braking systems to be fitted as standard on all motorcycles, for the coating on all new tyres to be removed before delivery, for crash bars should be offered as an after-market extra and for the development of new safety technologies for motorcycles. It did not support front number plate fitment. The IRU supported the compulsory wearing of safety belts by all taxi occupants, including taxi drivers.

The IRU also made some recommendations for harmonised requirements for buses and coaches. For buses, these comprised for buses improvements in fire prevention and protection of vehicle risk zones against fire, vehicle evacuation, providing emergency lights over emergency exits, safer cruise control, improved road adherence and mandatory ESP technology for Class II and Class III vehicles. For coaches recommendations included standardized and fitment of ergonometric dashboards and instrument panels, improvements in driver's vision, reverse assist systems, seat design, activate stop lights when using a 'retarder' and optimization of the location and fixing of equipment/accessories. The FIA and ADAC recommended that Directive 2006/20/EC on rear under run protection should be amended e.g. to raise the static test loads for the type approval of under run protection systems; to reduce the ground clearance and to mount the protection as closely as possible to the back of the trailer. The ADAC also recommended improving HGV visibility at night by using retro-reflective stickers or suitable lighting. Improved under run protection, (including front and side under run protection) was also recommended by the ETSC, T&E and ECF. Norauto stated that vehicle design and equipment (and their repair) for cars and PTWs was the areas in which the highest potential for improving road safety can be found. DEKRA and VdTÜV proposed that vehicle inspection standards are updated to take account of new safety design and equipment. CLECAT urged the EU to work further on improving vehicle safety standards in general; ensure maintenance for the lifetime of vehicles and establish cost benefits for some safety technology applications to heavy duty vehicles.

FEVR proposed a harmonised specification to address the excessive power of cars. The ECF and T&E wanted to see speed limitation in cars and vans.

Honda outlined various advances in braking technologies and PTW frontal airbags and supported a variety of systems such as ADAS, LKAS, ADC, ACC and INVS. IRU recommended a range of vehicle improvements for bus and coach safety and the removal of exemption for taxi drivers to wear seat belts.

The VERONICA projects recommended that a road map for the mandatory implementation of EDR technology into vehicles be included in the next road safety action programme. Volvo recommended the establishment of one ITS platform for Europe to enable pan-European services and cooperative systems.

Main recommendations for action at EU level:

- *Amend current EU legislation on the promotion of clean, safe and energy-efficient road transport vehicles.*
- *Study the road safety value of a system of continuous compliance to be installed and/or a system for providing technical information for every vehicle.*
- *Develop and propose standardized test methods for car to car compatibility; truck to car compatibility and improved methods for front, side and rear impacts.*
- *Legislate at EU level for whole vehicle type approval for powered two wheelers such as effective anti-tampering devices, the fitment of front number plates to aid speed enforcement a mandatory ABS for all two wheeled motor vehicles.*
- *Legislate for a PTW roadworthiness test.*
- *Remove the exemption for use of seatbelts by taxi drivers.*

- *Extend current legislation on seat belt reminders to include fitment in rear seats as well as front seats.*
- *Require the fitment of alcolocks in professional transport vehicles and promote their use.*
- *Promote effective technologies such as ISA, alcolocks, seat belt reminders in procurement policies to encourage consumer uptake.*
- *Provide consumer information on the comparative safety of vehicles to encourage rapid changes to vehicle design before 2020.*
- *Provide a route map for the implementation of Intelligent Speed Adaptation and Event Data Recorder systems.*
- *Develop safety assessment procedures for intelligent systems, human machine interface (HMI) evaluations, identification of systems with greatest casualty potential.*
- *Develop and implement a systematic programme of evaluation of EU legislation and vehicle technologies including cost-benefit analyses.*
- *Increase focus on the needs of vulnerable road users in new vehicle safety technologies including pedestrian detection devices, motorcycle design and equipment (e.g. anti-lock braking).*
- *Carry out research into the safety aspects of electric vehicles.*

At national and local levels:

- *Engage fully in international legislative development work.*
- *Carry out national research and monitoring of vehicle safety measures.*
- *Support and join the European New Car Assessment Programme.*
- *Encourage financial incentives for the use of protective equipment.*
- *Encourage national car industry to fast track key safety measures.*

Post-impact care

The additional written contributions from ETSC and FEVR also highlighted the need to include post-impact care as a key road safety strategy to be included in the road safety action programme in line with good international practice.

The quality of the emergency medical system can have an important bearing on the survivability of crashes and the prevention of disability and this was mentioned in the written contributions. Several organisations e.g. ETSC and ADAC supported further action on eCall.

Main recommendations for EU, national and local level actions:

- *Acknowledge that the quality of the emergency medical system is a key to achieving a safe traffic system.*
- *Review the potential contribution of improved emergency medical response to targets and strategies.*
- *Measure emergency medical response times between the crash scene and arrival at a medical centre against international best practice.*
- *Promote first responder schemes and in-service training for professional and commercial drivers.*
- *Promote and adopt eCall.*

AGE highlighted the need to include public transport in the road safety action programme, as a key mode for an ageing society.

Please note that further information on the additional written contributions is available in the Internet Consultation Report & Appendix 2 and Appendices 2a of this report.

3.4 Results of stakeholder conference

The issue

Involvement in a road traffic crash is the leading cause of death and hospital admission for EU citizens under 45 years. Against the background of 39,200 road traffic deaths in 2008 (EU27) and an annual socio-economic cost estimated at €180 billion (based on willingness to pay principle), road safety continues to be a priority area for action of the European Union[57, 58].

In spite of some progress, the objective of halving the number of road fatalities by 2010 will not be achieved; in 2008 as many as 39,200 (provisional number) citizens of EU countries were still killed in traffic.

Why address issue

The European Commission has carried out a consultation and data collection exercise to prepare a new European Road Safety Action Programme covering the period 2011-2020. Therefore around 500 stakeholders were invited to discuss the results of the public consultation and possible actions to be included in the next Road Safety Action Programme 2011-2020. The themes of the stakeholder conference included:

- Introduction to the stakeholder conference
- Problems and state of play
- Safety of vehicles and of infrastructure
- Internet EUROPA Website
- European Road Safety Charter Price
- The European Citizen, Actor of Road Safety.

Aims of stakeholder conference

The conference presented the results of the public consultation process aimed at generating input for the preparation of the next European Road Safety Action Programme for the period 2011-2020.

Following the welcome and introduction to the stakeholder conference existing problems and state of play was presented. This session contained presentations from DG-TREN on results of the current European Road Safety Action Plan and results of the public consultation. The summary report from the stakeholder conference is included in Appendix 4.

Road safety website

[57] Annual Statistical Report Based on data from CARE/EC, 2008, SafetyNet, ERSO, 2008

[58] ETSC (2008) 2nd Road Safety PIN Report. Brussels, Belgium

DG-TREN launched the new Internet EUROPA website on road safety and explained the main features of the website. The website is found on the following address: http://ec.europa.eu/transport/road_safety/index_en.htm. The new homepage should provide access to relevant road safety areas for the general public, decision makers and specialists. Thus there will both be a public layer and a specialist layer, which are connected by links.

Road Safety Awards 2009

The receivers of the Excellence in Road Safety Awards 2009 were presented. All the signatories of the Charter were thanked and the Awards for Excellence in road safety were given to those who have demonstrated the best road safety actions and initiatives undertaken within the framework of the European Road Safety Charter in 2009.

Main conclusions and recommendations

Suggestions for actions

From the panel sessions and discussions the suggestions for actions to be included in the next European Road Safety Action Programme for the period 2011-2020 include the following:

Vision and targets

- There should be a common long term vision such as vision zero approach,
- Ambitious quantitative targets should be identified both at EU level but also by member state - there should be common EU standards by 2020
- Targets for serious injured or maybe victims (killed and injured) should be identified
- Quantitative targets should be identified for vulnerable groups.

Accident data

- Establish common definition for injuries
- Improve accident databases to better allow analysis for urban areas EU to establish a framework within Member States may act.

EU support, funding and pressure

- EU should support and provide more pressure on Member States to improve road safety
- An EU Road Safety Fund should be established
- Link EU funding to road safety aspects, e.g. road safety audits should be in place before funding.

Evaluate efforts

- Evaluate previous efforts - what works what doesn't
- Ensure results of research are used including both past, existing and future research.

Accident costing and CBA

- Calculate costs of accidents, injuries and fatalities
- Promote importance and usage of cost-benefit analysis to find right solutions and priorities.

Safe infrastructure

- Extend directive on road safety (infrastructure management) to all roads (local and inter-urban) including road safety audits, road safety inspections, network management and impact assessment
- Support safe system approach or sustainable safety approach
- Support that minimum standards should be ensured for infrastructure
- Ensure infrastructure and road standards take all users in to account (e.g. safety barriers, road markings, sign posting etc.)

	• Design streets for all road users - also disabled • More safe rest places should be established along the road network • Continue and develop harmonisation of standards.
Vehicle technologies and technologies	• Crash worthiness tests of vehicles should also include how vehicles protect other users • Establish a star rating system for motorcycles • More focus on tyres both in directive and though tyre pressure measuring system, tyre stations and during enforcement • New technologies should be introduced faster and a framework should be established by EU within which Member States may act • Focus should be on preventing accidents e.g. through ITS by more use of sensors, etc. • Collect evidence on the effectiveness of e.g. ITS through research, etc. • More research on motorcycle accidents.
Legislation, enforcement and sanctions	• Harmonise legislation and policies, e.g. Highway Code, traffic regulation, penalty code, driver licences etc. • Support continued enforcement • Ensure cross border enforcement and sanctions • Focus on four killers in enforcement (speed, drunk driving, seat belts and helmets).
Best practices	• Continue and develop sharing of best practices.
Drivers, fitness and training	• More training of all drivers • Indentify fitness to participate criteria for assessment of capability to drive for all • Develop tools and formalise the legal framework for medical doctors role.
Safety at work	• Encourage employers to do a risk assessment • Encourage private and public entities to purchase safe vehicles and to only buy transport from companies using speed limiters etc.
Concluding remarks on panel debates	The panel debates were concluded emphasising a number of initiatives: • Benchmarking, we must learn from successes and failures to help to understand how to reach the objectives. • Behaviour: a number of balanced policies, e.g. controls, sanctions, training, including cross border enforcement and sanctions. • Dialogue that is free flowing is the course for the future. • Be innovative and to do more and better with the resources available. • Roads and streets in the cities should be able to handle different transport modes with different systems • Rural areas, we must understand driving in rural areas. • Driving is increasingly specialised, urban, long distance, rural and this requires different skills from the driver.

Finally EU should make a conference like this to an annual tradition under the new European Road Safety Action Program and to look at progress every year, good practises and country differences.

Closing remarks

The next steps towards a better Road Safety in Europe was summed up and the conference was closed.

The importance of cross border enforcement was highlighted and that voluntary initiatives are important, but that a directive is important for changing user behaviour. A threat of sanctions even if crossing a border is important.

Another key element is having a cross cutting approach, including Road Safety in other policy areas. This is seen before by DG EMPL, ENV and RESEARCH, and similar policy integration can be done for Road Safety.

Concrete actions must be drawn up. It is important to have knowledge on figures hereunder external costs related to accidents. Accidents are expensive and constitute a large cost for the economy.

Another idea is applying Road Safety Audits also to secondary roads. DG TREN was invited to work on the area of Vulnerable Road Users, notably Motor Cycles as casualties are increasing whereas casualties numbers are decreasing in other areas. EU had a goal of halving deaths in last programme. We have no figures for serious injuries. Sweden has programmes for reducing serious injuries and we could learn from this in the next programme. We must bring down numbers as far as possible!

The following key points summing up:

- A code for Road Safety at European level – not necessarily a highway code – as there could be subsidiary problem
- European Road Safety Agency to be set up – an agency has served import for aviation, maritime affairs and railways.
- An annual conference like today is an excellent idea to monitor progress and objectives set
- Electric vehicles are part of the future. 97% of transport is based on fossil fuels and this cannot continue. Use of electric vehicles must be promoted. Japan is a frontrunner here and concerning the problems of silent nature of these vehicles we must look ahead but investigate carefully.

4 Problem analysis and preliminary proposals for solutions

4.1 Introduction

The consultation (the six thematic workshops (July-October 2009), the internet consultation, the additional written contributions received (Sept-November 2009) and the stakeholder workshop (December 2009) highlighted problems and a range of solutions at EU, national, regional and local levels. Based on these, conclusions and recommendations for key problems to be addressed and preliminary proposals for the next road safety action programme are presented, as foreseen in the preliminary work document.

Expert judgement has been used when framing recommendations bearing in mind the Commission's requirement that priority action need to achieve a positive impact on road safety and public health while also improving mobility, energy, the environment and the economy. However, cost-benefit analyses for key actions will be needed to assess their justification for the action programme.

In drawing up its report for this section the consultancy team has incorporated various background materials and reference used in the consultation process in support of recommendations.

4.2 What are the key road safety problems?

The consultation recognised that road safety problems occur across the road safety management system - whether in the level of road safety *results* achieved (the levels of deaths, serious injuries, costs, levels of drinking and driving, speeding, seat belt use etc), in the scope of the *intervention* set (improving the safety quality of infrastructure, vehicles, user behaviour, and the emergency medical response) or in the quality of *institutional management arrangements* (target-setting, coordination, legislation, funding, promoting, monitoring and evaluation, R&D and knowledge transfer) which provide the foundation for producing improved road safety.

4.2.1 Results

Levels of death, serious injury and socio-economic cost

Progress against EU targets

The current European Road Safety Action Programme[59], adopted for the period 2003-2010, aims at an ambitious target of halving the number of road deaths in the EU by 2010 (EU15) which was adopted originally by the Commission in 2003[60] and endorsed by the Parliament and Council. After enlargement in 2004, the target to halve the number of fatalities in the European Union by 2010 applied to the combined road safety efforts of all 27 Member States which have large variations in safety performance. In spite of significant progress inspired by this target, this objective is unlikely to be achieved.

Involvement in a road traffic crash is the leading cause of death and hospital admission for citizens of the European Union (EU) under 45 years. In 2008, there were 39,000 road traffic deaths and around 300,000 seriously injured casualties. For every death, there are an estimated 4 permanently disabling injuries such as to the brain or spinal cord, 10 serious injuries and 40 minor injuries.[61] The estimated socio-economic costs are around €180 billion comprising 2% of GDP.[62]

The consultation identified current levels of road death, serious injury and socio-economic cost as the overarching problems for road safety in EU countries. Around two thirds of serious and fatal injuries occur outside urban areas, while most injuries to vulnerable road users such as pedestrians and children take place in urban areas. The vast majority of respondents to the internet consultation questionnaire (78%) identified the number of deaths as the most important problem and many individual stakeholder contributions highlighted the importance of addressing serious and long-term injury.

Priority casualty groups

In general, respondents indicated that all the suggested groups: young (male) drivers and car users are the most numerically important problems, but that powered two-wheeler users, pedestrians, cyclists and children are the most vulnerable groups. The intervention package of the next road safety action programme thus needs to address both total numbers of deaths as well as reducing deaths and serious injuries in high-risk groups to ensure road safety progress for all users. Improving road safety in both built-up and non built-up areas needs to be addressed. Given that a large proportion of work-related deaths oc-

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59 European road safety action programme – Halving the number of road accident victims in the European Union by 2010: a shared responsibility [COM(2003) 311 final, 2 June 2003].

60 European transport policy for 2010: time to decide [COM(2001) 370 final, 12 September 2001]

61 Mackay M, Quirks of Mass Accident Data Bases, Journal of Traffic Injury Prevention 6:4 ,Dec.2005

62 Public consultation on European Road Safety Action Programme 2011-2020, Oct-Nov2009

cur on the road (around 25-33%[63]), the action programme should also include road safety at work.

Number of deaths: The casualty groups which determine the priorities for reductions in total deaths in EU countries are car occupants who comprise 50% of total deaths, powered two-wheeler users and pedestrians who comprise 18% and 20% of deaths respectively[64]. Road assessment data indicates that in middle-income countries the key target for action is the national road network and in high-income countries the target for action is the busy regional road network. For the EU as a whole, around two-thirds of pedestrian deaths occurred in built-up areas.

Risk of death: The casualty groups which determine the priorities for reductions in reductions in numbers of deaths and serious injuries amongst highest risk groups (number of deaths per 100,000 of population) in EU countries are *young novice drivers, powered two-wheeler users, pedestrians and cyclists.* The consultation highlighted the problems of an ageing society. In particular, the physical vulnerability of older road users contributing to severe outcomes in road crashes will be an issue of increasing importance in the design and operation of the road traffic system. A further emerging problem is the problem of motorised scooter casualties.

4.2.2 Scope of intervention

Problems in the intervention set relate to insufficient scope of intervention in road safety strategies and insufficient attention to the evidence base.

Systematic, holistic approach

Stakeholders acknowledged that serious and fatal injuries in road crashes are preventable and need to be addressed by system-wide intervention which provides for the safety of all users and which comprises the planning, design, layout and operation of the network, improvement in vehicle safety, improved post-impact care as well as securing compliance with important road safety rules through education, licensing, testing, training and enforcement.

EU, national and local policies should focus on the implementation of evidence-based approaches to address key problems to reduce exposure to the risk of death and serious injury; the prevention of death and serious injury; mitigating the severity of injury when a crash occurs and reducing the consequences of injury.

Addressing human limitations and human error to improve safety for all users

In their contributions, the Swedish Presidency and the OECD saw the main problem for road safety as that roads, streets and vehicles are not adapted as an integrated system to human capacity and tolerance. Many stakeholders pointed

63 Work–related road safety, ERSO, 2009
64 CARE, 2009

to the need to ensure that the common errors made by users should not lead to death and serious injury. The need to better address the vulnerability of road users and pedestrians, cyclists, powered two wheeler and older users in road traffic policy was commonly cited in most of the workshops and in many of the additional written contributions.

The particular importance of addressing safety problems at EU, national and local levels such as excess and inappropriate speed, reducing impaired driving, insufficient seat belt and crash helmet use, high novice driver and rider risks; improving the safety quality of vehicles and road infrastructure for all users were commonly cited (*See ERSO texts and COWI background documents for detailed exposition of the problems*).

EuroRAP noted that the way risk is managed on the road network is 'unacceptable, unreformed, costly and a quarter of a century out of date'. Several stakeholders highlighted, on the one hand, the good progress made in vehicle safety for car occupants following a combination of EU legislation, EuroNCAP and national attempts to 'fast-track' the fitment of safety equipment. Crash data has confirmed that a 50% reduction in the risk of serious car occupant injury has been achieved in new car models in Europe over the last decade[65].

On the other, the large scope for further improvement in vehicle crash avoidance and crash protection construction and use which would benefit all users was emphasised for all types of vehicle. For example, ten years after the introduction of the Euro NCAP pedestrian protection rating, sonly 21% of the new cars sold in the EU were assessed as having 3-star performance , 42% were 2-star and 29% only 1-star cars. Graduated access to driving and riding was also highlighted as a key strategy to reduce exposure to high risk incorporating specified periods of accompanied driving and restrictions such as zero alcohol limits. The road safety value of combined publicity police enforcement and efficient procedures for automated enforcement (e.g. speed cameras, seat belt reminders, alcolocks) was much emphasised.

4.2.3 Institutional management of road safety

Results focus: Institutional leadership, visions, targets and strategies

In responses to the internet consultation, the lack of political willingness to prioritize road safety, insufficient integration and coordination of activity and lack of high-level review of safety management performance were rated as the key problems in institutional leadership and coordination in EU countries.

The consultation process and, in particular, the thematic workshop on vulnerable and unprotected road users and the stakeholder conference, highlighted the importance of having both a long-term shared vision of the safety of the road traffic system which can help shape the scope of intervention. Such visions have been adopted in several Member States e.g. Sweden, Netherlands and in

[65] SARAC(II) EC Project.

Norway but not in the majority of EU countries. These need to be accompanied by quantitative interim targets at EU and national levels which are challenging but achievable to underpin and provide focus for effective road safety activity. Few countries have both at present.

Coordination and policy integration

The consultation recognized that road safety work is a multi-disciplinary activity carried out by a range of sectors requiring a 'whole of government' approach and engagement with a range of governmental partners, the business sector and civil society. The need for better coordination of policy both horizontally and vertically at EU, national and local levels was underlined in the thematic workshops and in the internet consultation responses.

Most respondents to the internet consultation believed that the integration of road safety into other areas of EU policy has only been partially effective and 20% thought that that integration was ineffective. In particular, respondents recommended more integration in education policy, health policy and environmental policy. Respondents from many groups also believed further integration into research, economic (financial incentives) and health and safety policy (in the workplace) important too and these themes were also picked up in the thematic workshops and in additional written contributions from a range of stakeholder organisations. While a minor problem for road safety but a major problem for rail safety, the need to include safety on level crossings in the action programme was highlighted by the ELCF and the RSSB.

Legislation and harmonisation

The consultation, in general, acknowledged the continuing importance of a legislative framework for road safety at EU and national levels, supported and enhanced by market forces and mechanisms. Stakeholders in general believed that insufficient harmonization of road safety rules and standards and mechanisms for their compliance, where the EU has competence, was taking place. There was a need for a range of legislative requirements to improve road safety which, most stakeholders agreed, should be underpinned by research and development, cost-benefit analysis and systematic monitoring and evaluation.

Funding and resource allocation

Problems of obtaining resource commensurate with the size of the road traffic injury problem are perennial for road safety and are identified as a key obstacle by stakeholders in the internet consultation and thematic workshops. This was at odds with the fact that many demonstrably effective road safety measures yield higher benefits than costs, particularly in road and vehicle engineering and combined publicity and enforcement fields. The importance of cost-benefit analysis using willingness to pay methods and updated values in making a successful safety investment case in resource allocation was also emphasised.

Promotion

Insufficient promotion and communication on road safety were perceived as key problems in the internet consultation responses and these were addressed further in the thematic workshop on road safety communication. The need for high-level championing of road safety at EU and national level to ensure it

competes appropriately with environmental and economic issues was referred to in several of the thematic workshops.

Monitoring and evaluation
Respondents to the internet consultation rated the lack of periodic, independent review of road safety performance, the lack of health sector monitoring to establish under-reporting of injuries and the lack of harmonised definition of serious injury as the key problems in monitoring and evaluation. Again, these problems, alongside the need to improve exposure data through travel surveys, were highlighted further in the thematic and stakeholder workshops.

Research and development and knowledge transfer
A key problem for road safety highlighted in the consultation is the need to continue to apply research-based measures at EU, national and local levels to achieve results in the interim and to identify future solutions. Improving performance of all EU countries relied upon more effective knowledge transfer.

4.3 Conclusions and recommendations for action

4.3.1 Political leadership and institutional management

The consultation underlined the common perception of the need for political leadership for road safety at EU, national and local levels. Stakeholders saw this as being translated into setting and agreeing goals and targets across the partnership, more efficient coordination horizontally and vertically between levels of government and with the business sector and civil society; providing adequate funding for effective activity, particularly in Member States and neighbouring countries with lower safety performance; championing road safety at a high level; creating data classifications and systems to allow transparent monitoring and evaluation and peer review; and continuing research and development to allow Europe to be a global leader in road safety, products and services.

One of the key conclusions of the consultation, therefore, is the concern of stakeholders about the need to improve the processes and accountabilities which influence road safety, as much as the specific countermeasures needed to address the main problems. In their written contributions, ACEM and ETSC spoke for many in seeing strengthened institutional management capacity to address the problems highlighted above as the major necessary step in making a difference to the road safety situation in the next decade in Europe.

What results should the EU and Member States seek to achieve?
A shared vision for the long-term
The subject of a long-term vision or goal for the future safety of the road traffic system was promoted by several stakeholders in the additional written contributions, thematic workshops and in the stakeholder workshop. This view is supported by research and experience which show that a long-term vision of the future of the road traffic system and associated quantitative targets can cut

through complacency, help integration of road safety across sectors, stimulate effective action as well as provide leverage for additional resource. If promoted well and at a high-level, a vision can help to create a sympathetic climate for the introduction of interventions and help develop and explain the road safety strategy.

The recommended visions for the EU and Member States during the consultation were variously '*Road safety is a right and responsibility for all'* (ETSC), '*Vision Zero*' (e.g. stakeholder workshop, EARPA, FEVR) '*Sustainable Safety'*, and the generic term for these, '*Safe System'* (e.g. thematic workshops on vulnerable and unprotected road users, vehicle safety, road infrastructure, ACEM, FEVR). '*Safe System'* is identified as international good practice and is recommended for adoption as a long-term goal and strategy accompanied by interim quantitative targets by the ITF/OECD[66] and World Bank[67] for all countries, irrespective of their socio-economic status. (See Appendix 5)

Recommendation for action at EU and national level:
- *Adopt a long term shared vision across the road safety partnership for the future safety of the road traffic system (Safe System) for the ERSAP, the European Road Safety Charter and national road safety strategies in line with internationally recommended good practice.*

Interim quantitative targets 2011-2020

Research confirms that jurisdictions which have targets have better road safety results than those which do not[68]. Typically, targets aim to reduce total numbers, rather than rates. Death and injury rates are also targeted in some countries but in good practice, only in addition to numbers of deaths and serious injuries. Moreover, best practice in target-setting indicates that interim targets need to be challenging but achievable involving highly analytical activity based on a range of inputs[69].

The consultation process at all stages highlighted the value of the current EU target and the importance of continuing to adopt further quantitative interim targets for 2011-2020 both at EU and national levels. In the internet consultation, proposing a road safety objective to 2020 was identified as the highest priority action which could be taken by the EU in support of national, regional and local activity.

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66 ITF/OECD (2008) Towards Zero: Ambitious road safety targets and the safe system approach, Paris

67 Bliss T and Breen J, (2009) *Country Guidelines for the Conduct of Road Safety Management Capacity Reviews and the Specification of Lead Agency Reforms, Investment Strategies and Safe System Projects*, Global Road Safety Facility, World Bank, Washington.

68 ITF/OECD (2008*) Towards Zero: Ambitious road safety targets and the safe system approach*, Paris

69 *Quantitative targets*, ERSO, 2009

The majority view in the additional written contributions across the range of contributors from safety, user, business organisation and research groups was to target the reduction of death and serious injury. Various proposals were made.

ETSC recommended that the Road Safety Action Programme should include the following quantified targets for the EU27 as a whole:

- reducing the annual number of road deaths by at least 40 per cent between 2010 and 2020;
- reducing the annual number of people seriously injured on the roads by at least 40 per cent between 2010 and 2020 with progress towards the target measured at first by each Member State continuing to use its own definition, while concurrently a workable common definition of and procedure for recording serious injury is developed and brought to implementation across the EU;
- reducing the annual number of child deaths on the roads by at least 60 per cent between 2010 and 2020;

and that the Programme should encourage each Member State to set counterpart targets of its own.

This proposal deserves close consideration based as it is on:

- Reviews by working parties of ETSC experts from 17 countries reporting in 2003 and 2006 respectively on Assessing risk and setting targets in transport safety programmes and A methodological approach to national road safety policies;
- The OECD/International Transport Forum report in 2008 by experts from 21 countries on *ambitious road safety targets and the safe system approach*;
- Statistical estimation that points to challenging but achievable quantified targets for reducing road deaths across the EU27 between 2010 and 2020;
- Statistical evidence of the similarity of the rates of reduction of annual numbers of deaths and of people seriously injured across a range of EU countries since 2001;
- Statistical analyses of the effects of setting national targets upon the national rates of reduction in annual numbers of deaths in the countries concerned; and
- Expert assessment of the importance of quantified targets for EU27 as a whole as a challenging context for target setting by each Member State.

Several organisations recommended specific EU targets for children, pedestrians, two wheeler users, and older road users. The stakeholder workshop also concluded that quantitative targets should also be identified for vulnerable groups.

Recommendation for action at EU and national levels:
- *At EU level, identify and adopt a shared interim target to reduce the number of deaths by a challenging but achievable percentage within the period 2011 – 2020 as the focus for road safety action. Set up small sub-group of experts and officials to consider existing proposals and related analysis carried out by ETSC on specific targeted levels of deaths.*
- *Identify and adopt a separate shared interim target to reduce the number of serious injuries in EU countries based on Member States definitions of serious injury.*
- *Consider the adoption of quantitative targets to reduce the risk of death for key vulnerable and unprotected road user groups e.g. for children.*
- *Ensure visions, targets and strategies are adopted as a condition of new EU membership.*
- *At national level, also target intermediate outcomes (e.g. levels of seat belt use, reductions in mean speeds) and institutional outputs (e.g. numbers of breath tests, % of vehicle fleet with 4*+) in new road safety strategies.*

Reducing socio-economic costs

The need to reduce unacceptable high socio-economic costs associated with road traffic crash injury was also cited as a key objective for the next road safety action programme. While estimates are available, the road safety economics and stakeholder workshops, supported by the insurance industry, recommended that further work is carried out to establish/update the different elements of crash costs at EU level.

Recommendation for action at EU and national levels:
- *Establish where necessary and update annually estimates of EU and national socio-economic costs of road crashes using best practice methods.*

Leadership organisation

Road safety takes place in a complex multi-sectoral context and delivery of shared responsibility to achieve results requires strong and careful leadership and coordination between government, the business sector and civil society. Effective lead agencies can take many forms and, in good practice, carry out a range of functions[70]. Several organisations highlighted the need for the establishment of a European Road Safety Agency. A rationale for establishment was also made in a written contribution from an invited expert from Spain to the European Parliament's mini-hearing in road safety.

> *"Despite of representing 95% of all transport casualties, road is nowadays the only transport mode without a European Safety Agency and as more and more initiatives and fields of actions are brought into the European road safety arena, the concept of a "ad-hoc" supporting organization may acquire more consistency. Some of the areas where this European road safety organization could play an active role are: the type approval of road vehicles; the interoperability of the road transport system: road signs, road design; future coordination and guidance of infrastructure safety management systems, in-*

[70] Bliss T and Breen J, (2009) *Country Guidelines for the Conduct of Road Safety Management Capacity Reviews and the Specification of Lead Agency Reforms, Investment Strategies and Safe System Projects,* Global Road Safety Facility, World Bank, Washington.

cluding safety on the trans-European road network; the European Road Safety Observatory (in charge of collecting accident data & research results); the continuous monitoring of 4th Road Safety Action Programme; the European Road Safety Charter; best practice information collection and monitoring of national policies and casualty reduction; the European Road Safety Day or Conference; cross-border enforcement information systems and the promotion of corporate road safety policies in Europe."

Recommendations for action at EU, national and local levels:
- *Review governmental lead agency arrangements, capacity and support for developing, agreeing and implementing new road safety visions, targets, and strategy.*
- *Consider the establishment of a European Road Safety Agency at EU level.*

Integration of policies and coordination arrangements

The need for shared action across sectors was highlighted to achieve results. It was noted that the EU could make a huge contribution to make vehicles, infrastructure and traffic mix safer and cleaner. Urban safety and speed management policies provided a virtuous circle for safety, public health and the environment. It was suggested that integration between safety and environmental objectives could be served by expanding the Cross Border Green Corridor might be expanded to include road safety considerations. Several organisations emphasised the need for health monitoring of road traffic injury and the importance of integrating road safety into health policies. Several organisations pointed to the value of engaging the occupational sector by establishing effective safety policies at work.

The need for improvements in coordination of road safety horizontally across government between different sectors with road safety responsibilities as well as vertically between EU, national, regional and local levels was a general observation in the public consultation.

Recommendations for action at EU national and local levels:
- *Review horizontal and vertical coordination arrangements across government at EU and national levels against international best practice for the establishment and implementation of the action programme to achieve results. Transport, health, justice and police, work, environment industry, finance and municipalities will form the key partnerships which can help to deliver results. Engage Parliament business and civil society in the consultative levels of the decision-making hierarchy.*

Legislation and harmonisation

Most stakeholders believed that EU and national legislation to set minimum standards of safety but offering a high level of protection for the road network, vehicles and users continues to be necessary and appropriate. Examples highlighted in the consultation were:

- the need to address the gaps in the EU Whole Vehicle Type Approval framework to include light goods vehicles and powered two wheelers and other new vehicle measures identified by research and development;

- upgrade key vehicle and TEN-T standards to technical progress in safety engineering;
- upgrade the driver/rider licensing, training and testing regime in line with best practice rules;
- play a role in the harmonisation of road standards; harmonise key traffic regulations e.g. speed limits and blood alcohol limits (0.5 g/l for drivers in general and 0.2.g/l for commercial, public transport and novice drivers were recommended);
- implementing a cross border enforcement directive;
- extending the infrastructure safety directive beyond TEN-T roads; and
- amending public procurement legislation to include the promotion of safety.

A view expressed by several organisations was that harmonisation to produce road safety results needs to be underpinned by research and development, systematic monitoring and evaluation, cost-benefit assessment and large-scale demonstration in the case of new technologies. Specific recommendations for the range of interventions for road infrastructure, vehicles and users with potential for legislative action are set out in the next section.

Recommendations for action at EU, national and local levels:

- *Recognise that a legislative framework for road safety management and intervention at EU and national levels continues to be essential.*
- *Expand harmonisation on road safety where EU action can add road safety value to cover standards/ type approval, inspection, audit in the fields of infrastructure and vehicles as well as improved user standards (e.g. harmonised maximum blood alcohol limits and speed limits); cross border enforcement; public procurement policy etc.*
- *Carry out cost-benefit analyses of proposed legislative measures to ensure that the Commission's requirement of achieving a positive impact on road safety and public health while also improving mobility, energy, the environment and the economy is met.*

Funding and resource allocation

In the road safety economic and stakeholder workshop the EU was urged to support and provide more pressure on Member States to improve road safety. One recommendation from the stakeholder workshop was for an EU Road Safety Fund to be established and funding linked and allocated to activity on the basis of audited good practice. The EU was urged by several stakeholders to fund effective road safety activity, particularly in countries of the last EU enlargement and in neighbouring countries.

Several workshops as well as the stakeholder conference highlighted the need for EU action to promote importance and use of cost-benefit analysis to find the right solutions and priorities. In addition, the workshop on road safety economics concluded that the EU should set out a route map for the internalisation of external road crash costs but concluded that other financial mechanisms were more likely to benefit road safety. The specification of safety requirements in public procurement and 'pay as you drive' schemes were cited as two examples.

Recommendations for action at EU and national levels

- *Review resource levels needed for the implementation of the new programme.*
- *Establish an EU Road Safety Fund.*
- *Provide financial incentives and premium discounts for the take up of demonstrably effective road safety equipment and promote clear incentives for safe driving.*
- *Fund twinning and demonstration projects to develop good practice road safety management capacity and to support effective RSAP measures in EU and neighbouring countries with lower levels of safety performance.*
- *Specify safety criteria in structural funds, public procurement as well as transport and TEN-T projects.*
- *Support road safety research as well as demonstration projects*
- *Support EU umbrella NGOs and the extension of networks of NGOs active in the field of road safety.*
- *Establish any benefits for road safety on the internalisation of road crash costs and set out an EU route map for the internalisation of external road crash costs.*
- *Promote cost-benefit analysis in resource allocation, the use of 'willingness to pay' and update values.*

Promotion

The thematic workshops on vulnerable road users and communication and other contributions emphasised that road safety requires promotion at a high-level both inside and outside government and that a shared vision of the future safety of the traffic system assists in promoting road safety. In addition, road safety communication strategies need to be based on good practice, as highlighted in the EU CAST project. New opportunities exist for more direct targeting of road safety messages but proven best practice methods will continue to play the key role for the foreseeable future, although experimentation with new media is desirable. The European Road Safety Charter is seen as a useful mechanism for the promotion of effective road safety activity with a range of sectors, including the health, education sectors and employers, and its activities need to be scientifically monitored. The European Commission, Member States and employers can show leadership in road safety by adopting in-house safe travel policies and public procurement policies which can also help to stimulate demand for safety equipment.

In its written contribution, Swedish Presidency and several other stakeholders pointed to the crucial role of the EU and Member States in promoting the emergence of innovative in-vehicle technical solutions to tackle serious road safety problems. The Commission was urged to promote road safety equipment in procurement policies and to amend current EU legislation to include the promotion of clean, safe and energy-efficient road transport vehicles.

Recommendations for action at EU level, national and local levels:

- *Promote a shared EU road safety vision and EU and national targets at the highest levels of Government, business and civil society in communications policies, through the European Road Safety Charter and European Road Safety Observatory as well as in the action programme.*
- *Show organisational leadership at EU, national and local levels in public and private sectors by introducing in-house safe travel policies.*
- *Amend EU legislation to include the promotion of clean, safe and energy-efficient road transport vehicle in public procurements.*
- *Promote best practice in road safety communication policies and proven measures which reduce deaths and serious injuries in the European Road Safety Charter, the European Road Safety Observatory as well as in national and local frameworks*.

Monitoring and evaluation

The need for EU and national action to improve monitoring and evaluation came out strongly from the consultation.

The written contributions highlighted the importance of improving data for exposure, final and intermediate outcomes at national and EU levels, particularly for vulnerable road users such as pedestrian, cyclists, older road users across the EU.

Recommendations for action at EU level:

- *Monitor the effects of road safety targets, strategies, individual programme measures including European Road Safety Charter inspired measures and establish a high-level review team to report on progress and make further recommendations based on evaluation.*
- *Develop, promote and establish a single EU-reporting system for crash injury, exposure and other data.*
- *Adopt a standard EU definition for 'severe' and 'minor' injury and implement across databases.*
- *Ensure computerized health sector monitoring of death and serious injury in road crashes in every Member State and conduct studies to ascertain levels of under-reporting in CARE system data.*
- *Stimulate detailed in-depth investigations based on established protocols.*
- *Promote and support independent review of road safety management across the EU and elsewhere.*
- *Establish regular public opinion surveys on road safety.*

At national and local levels

- *Establish/improve quality of crash injury databases and data sharing arrangements between police, roads and health authorities and establish levels of under-reporting.*
- *Carry out annual surveys and analysis to collect key exposure data and safety performance data and establish national databases on intermediate outcome data (.e.g. speed, seat belt use (in normal traffic as opposed to crashes)) and institutional output data (e.g. numbers of breath tests, speed checks etc.) in line with best practice to inform national strategies on speed management, increasing seat belt use, reducing drinking and driving and improving roads and vehicle fleet quality*.
- *Commission independent peer review of national road safety performance in line with ITF/OECD recommendations.*

The need for harmonised definitions for serious and minor injury was highlighted by several international organisations and countries. Other identified needs included health sector monitoring of road traffic injury; the collation of information on vehicle specifications; more systematic information on levels of speed, drinking and driving, occupant restraint use, crash helmet use, safety quality of infrastructure and vehicles and the response of the emergency medical system to provide a comprehensive view of the safety quality of the road traffic system.

The need for periodic independent evaluation of road safety management and results achieved was also highlighted as a need in the internet consultation.

Research and development and knowledge transfer

Many respondents and written contributions highlighted stakeholder support for continuing research and knowledge transfer which is seen as key to past successes in reducing casualties, a pre-requisite for further improvement and a means by which Europe can contribute to be the global leader in road safety. One research organisation, for example, noted that past EU support for research and development had resulted in the European industry playing a leading role in automotive safety and outlined priority areas as intelligent safety and new safety technologies; structures and materials; human aspects and assessment methods for crash test tools. The importance of large scale demonstration projects was highlighted as was the need for research on injury to older users.

There was also wide support for the establishing best practice guidelines at EU and national levels. In the thematic workshops, stakeholders highlighted the value of the European Road Safety Observatory as a source of information and knowledge for decision-makers, practitioners and researchers. At national level, Sweden noted that it is developing a *Vision Zero Academy* to build knowledge on how innovation and penetration can be more effective, and transfer knowledge and best practices to all relevant stakeholders openly and inclusively.

Recommendations for action at EU level:

- *Establish the European Road Safety Observatory as a permanent EU-funded structure as a source of information and knowledge for all with appropriate human and financial resource, preserving and strengthening the original aims of ERSO as an established and valuable source of knowledge and data for safety decision-making.*
- *Establish authoritative EU best practice guidelines agreed by Member States for activity across the road safety management system.*
- *Promote the development of more 'best practice' resources/ tools for implementation e.g. road safety management capacity review and target-setting tools.*
- *Support capacity building demonstration projects in countries with poor safety results.*

At national and local level:

- *Establish capacity in-house and with external partners of road safety research and establish national research strategy.*
- *Build and transfer knowledge on Safe System approaches.*
- *Develop and promote best practice guidelines particularly in the enforcement and engineering fields.*
- *Embark on 'peer to peer' twinning activity and professional training at decision-making and practitioner levels for knowledge transfer on effective and innovative activity.*

4.3.2 The scope of the intervention/countermeasure set

Planning, design and operation of road infrastructure

The thematic workshop on the safety of non-urban, non-motorway roads in Europe concluded that road safety engineering should be actively promoted at EU, national and local levels. Safety engineering measures represent a sound investment and a higher benefit/cost ratio, in general, than for other road engineering measures. Action was needed to improve road safety on non-urban, non-motorway roads as they account for around 60% of deaths, nearly 50% of cyclist deaths and around 30 % pedestrians. The workshop on vulnerable and unprotected roads also highlighted the importance of urban safety management and lowering urban speeds bearing in mind the lower human tolerance thresholds of pedestrians, children, older users and two wheeler users.

Key road safety engineering strategies

The main road safety engineering strategies identified by the internet consultation, the additional stakeholder contributions and the thematic workshops centred on the need for a *Safe System* approach which:

- takes account of the safety of all road users (both protected and vulnerable) in road infrastructure planning and design;
- achieves an appropriate match in road classification between road function, speed limit, design, layout (rated highest in the internet consultation response);
- separates dangerous mixed road use wherever possible e.g. ,motorised traffic with a flow or distribution function must be segregated from non-motorised transport.
- provides facilities and routes especially for pedestrians and cyclists;
- improves speed management on both the urban and rural networks e.g. the maximum speed of motorised traffic should be limited on roads where it mixes with non-motorised traffic to take better account of road user vulnerabilities.
- provides crash protective roadsides which take better account of human tolerance limits.

In written contributions various Member States governments as well as international organisations highlighted the value of median barriers and rumble strips (which can reduce fatality risk by around 80%), roundabouts, as well as speed management in residential areas which can reduce crashes by between 15 to 65%. The value of safety impact assessment, safety audit and safety inspection (e.g. using iRAP and EuroRAP) was also highlighted.

The consultation indicated that most stakeholders wanted to see strong EU action on road infrastructure safety as well as action at national and EU levels. Priorities actions were identified as follows:

Further harmonisation

The infrastructure workshop back up by additional contributions from several organisations called for the extension of the TEN-T infrastructure Safety Directive (2008/96) which includes provision for safety impact assessment, safety audit, safety inspection to apply to all roads. Minimum standards based on 4

	star EuroRAP levels were advocated for the TERN. The expansion of the Cross Border Green Corridor concept to Cross Border Green and Safe Corridor to include road safety criteria was proposed. An EU role in the harmonisation of technical standards such as guard-rails, skid-resistance etc. was also proposed as was the need for common EU standards on effective ITS applications.
Promoting and funding safety engineering	An overarching recommendation of the consultation was the need to ensure that safety is a core value in the planning, design and operation of the road network at EU, national and local levels. More investment for safe road design was proposed, especially for countries performing less well. Safety criteria needed to be established for all EU-funded infrastructure projects. These would need to include the application of the four instruments of the infrastructure safety directive in the use of funds on all types of roads in the EU and in projects it supports in low and middle income countries. This would be achieved via e.g. internal guidelines of institutions/ banks providing funds and with reference to best practice guidelines. The EU needed to promote and fund the development of technologies with the greatest life-saving potential e.g. ISA.
Best practice guidelines	The workshops supported by a range of organisations highlighted the importance of exchanging best practice and providing authoritative guidelines covering a range of safety engineering issues including land use planning, speed management, self-explaining, crash–protective roads and innovative approaches. An EU process for obtaining agreement on EU level guidelines would also need to be established.
Better data	The need for better data to identify the safety performance of the networking was identified including the need for traffic counts, travel surveys, speed surveys, risk mapping, performance rating etc. The EU should support information on the risk of specific roads particularly in countries of the last EU enlargement and in neighbouring countries
Research and development	Demonstration projects for innovative safety engineering should be funded. A framework at EU level needed to be established for safety and economic evaluation for promising ITS technologies. Work to achieve better system integration between car and road infrastructure to achieve safe travel on the whole network was also required.

Recommendations for action at EU level:

–Apply the EU Infrastructure Safety Directive providing for safety impact assessment, safety audit and safety inspection on TEN-T roads to all roads.

–Develop authoritative EU guidance/best practice guidelines covering a range of safety engineering issues and establish a process of obtaining agreement on EU level guidelines, e.g. land use planning, speed management, self-explaining, crash–protective roads and innovative approaches which contribute to the Safe System approach.

–Expand the Cross Border Green Corridor concept to Cross Border Green and Safe Corridor to include road safety criteria.

–Set minimum standards based on 4 star EuroRAP levels for the TERN.

–Establish road safety engineering criteria for inclusion in EU project investment.

–Play a role in the harmonisation of technical standards (skid resistance, barriers, markings, proven new technologies etc) to ensure minimum standards;

–Promote, standardise and provide for deployment of ISA (Intelligent Speed Adaptation) and other demonstrably effective technologies.

–Promote consumer information on the risk of specific roads particularly in countries of the last EU enlargement and in neighbouring countries.

–Promote better crash injury and survey data on road network risks.

–Fund demonstration projects and research evaluation for innovative safety engineering, promising new technologies as well as co-operative efforts between vehicle and infrastructure providers to achieve safe travel on the network.

At national, regional and local levels:

–When revising road functional classifications and hierarchies, ensure that an appropriate match between function, speed limit, design and layout is achieved which takes better account of non-motorised as well as motorised users.

–Adopt Safe System approaches to road safety engineering and periodically review national standards, guidelines and processes against international good practice.

–Implement 30km/h zones in residential areas to improve vulnerable road user safety.

–Support and join EuroRAP/iRAP and conduct EuroRAP/iRAP risk mapping and protection scores to help assess the safety quality of roads.

–Apply safety impact assessment, audit, inspection and network management procedures to new road and improvement projects.

See also COWI Safety of Rural Roads and Vulnerable and Unprotected Road users Background Papers for further information.

Vehicle safety

The consultation process demonstrated that the potential substantial opportunities for further casualty reduction resulting from improved vehicle safety and new technologies are well-appreciated. The key casualty reduction issues were seen as the need to provide vehicles with facilities to simplify the driving task and to ensure their design and equipment protects the vulnerable human being as effectively as possible, both inside and outside the vehicle.

The vehicle safety workshop reached a high degree of consensus amongst a wide range of stakeholders. It concluded that vehicle safety is integral to a *Safe System* approach and an integrated approach to vehicle safety, linking preventative, active and passive safety; cooperative systems for motor vehicle occupants and vulnerable road users are necessary. It was concluded that priority actions for secondary safety (crash protection) identified by research are: standardized test methods for car to car compatibility; truck to car compatibility and improved methods for front, side and rear impacts. The internet consultation also highlighted the need to prevent injury through better crash protection e.g. seat

belts, airbags and vehicle design and better protection of vulnerable road users. The importance of vehicle measures in assisting safe driving behaviour was also underlined in the stakeholder consultation in increasing seat belt use (seat belt reminders), reducing drinking and driving (alcolocks) and compliance with speed limits (intelligent speed adaptation, ISA).

The consultation process noted the importance of EU action on vehicle safety, in particular, and recommended a range of action to promote the use of vehicle safety rating and fast-tracking of provision of proven safety equipment through safety ratings and public procurement; further harmonisation of vehicle standards and a range of research and development needs.

Promoting effective new technologies

EU action to improve the take up of new safety technologies and equipment in vehicles (e.g. ISA, seat belt reminders, alcolocks) was highlighted by many organisations during the consultation process. Several organisations wanted the EU and Member States to provide clear incentives for safety equipment in public procurement.

Further harmonisation

Priority actions for secondary safety identified by research were a standardized test method for car to car compatibility; truck to car compatibility and improved methods for front, side and rear impacts. Priority actions for primary safety identified by research were implementation of Intelligent Speed Adaptation systems, development of assessment procedures for intelligent systems, Human Machine Interface (HMI) evaluations and identification of systems with greatest casualty savings.

Several stakeholders recommended the establishment of type approval regulations for a range of crash avoidance, crash protection technologies, both current and new. The establishment of whole vehicle type approval for powered two wheelers and lighter trucks was specifically highlighted. Many contributions pointed to the need for safe car design for other road users, especially pedestrians and powered two wheelers (PTWs). Measures for PTWs included mandatory fitment measures such as effective anti-tampering devices; front number plates, ABS for all two wheeled motor vehicles and a PTW roadworthiness test.

Vehicle inspection, in general, was also seen as important by some respondents, although little information on effects on casualty reduction is available as yet to indicate a case for implementation.

Several respondents and the vehicle safety workshop advocated the need for an EU system of continuous compliance to be installed and/or a system for providing technical information for every vehicle as the need for updated vehicle inspection standards to take account of new safety design and equipment. Based on such an information system, it was suggested that an EU wide platform on vehicle information linking type-approval vehicle registration and vehicle roadworthiness inspection would provide the basis for a European single market for vehicles guaranteeing a high level of safety of vehicles throughout their use.

Research and development

There was much input on research needs from the vehicle safety thematic workshop and in the additional contributions. Priority recommendations included the need to develop safety assessment procedures for intelligent systems, human machine interface (HMI) evaluations and identification of systems with greatest casualty potential. Furthermore, there was a need to develop and implement a systematic programme of evaluation of EU legislation and vehicle technologies including cost-benefit analyses as well as carrying out research into the safety aspects of electric vehicles.

Recommendations for action at EU level:

- *Amend current EU legislation to include the promotion of clean, safe and energy-efficient road transport vehicles in public procurement.*
- *Promote effective technologies such as ISA, alcolocks, seat belt reminders in procurement policies to encourage consumer uptake.*
- *Promote consumer information on the comparative safety of vehicles to encourage rapid changes to vehicle design before 2020.*
- *Provide a route map for the implementation of Intelligent Speed Adaptation and Event Data Recorder systems*
- *Extend current legislation on seat belt reminders to include fitment in rear seats as well as front seats.*
- *Remove the exemption for use of seat belts by taxi drivers.*
- *Develop and propose standardized test methods for car to car compatibility; truck to car compatibility and improved methods for front, side and rear impacts.*
- *Legislate at EU level for whole vehicle type approval for powered two wheelers such as effective anti-tampering devices, the fitment of front number plates to aid speed enforcement, a mandatory ABS for all two wheeled motor vehicles.*
- *Increase focus on the needs of vulnerable road users in new vehicle safety technologies including pedestrian detection and collision avoidance devices, motorcycle design and equipment.*
- *Legislate at EU level for the construction and use of vans and small lorries (< 3.5 ton) as for heavy good vehicles.*
- *Require the fitment of alcolocks in heavy goods vehicles and public transport vehicles and promote their use.*
- *Study the road safety value of a system of continuous compliance to be installed and/or a system for providing technical information for every vehicle*
- *Study the road safety value of a PTW roadworthiness test*.
- *Implement an EC task force to focus Commission work on new vehicle safety technologies in order to identify the systems with expected most effective casualty reduction.*
- *Develop safety assessment procedures for intelligent systems, human machine interface (HMI) evaluations, identification of systems with greatest casualty potential.*
- *Develop and implement a systematic programme of evaluation of EU legislation and vehicle technologies including cost-benefit analyses.*
- *Carry out research into the safety aspects of electric vehicles.*

At national and local levels:

- *Engage fully in international legislative development work.*
- *Carry out national research and monitoring of vehicle safety measures.*
- *Support and join the European New Car Assessment Programme.*
- *Encourage financial incentives for the use of protective equipment.*
- *Encourage national car industry to fast track key safety measures through in-house travel policies and public procurement.*

See also COWI Vehicle Safety Technology and Management Background Paper for further information.

Road users - Licensing, testing, training, information and enforcement

The main road user strategy indicated from the consultation was to aim for users who are adequately educated and informed about key safety behaviours and their fitness to use the roads; restricted against action which may lead to death and serious injury through a variety of means (including self-enforcing vehicle and road engineering measures) and deterred through police and automatic enforcement.

A range of recommendations were made during the consultation in relation to licensing, testing, training and improving compliance with key safety rules through enforcement. The most important countermeasures relating to enforcement were assessed to be combined publicity and high visibility police enforcement of important safety rules, deterrence of drinking and driving/ riding, enforcement of speed limits, seat belt and crash helmet use. The role of the vehicle in helping to achieve compliance through seat belt reminders, ISA, alcolocks etc. was acknowledged. Additional contribution called for stricter penalties e.g. penalties for causing death by driving in line with other forms of causing death by negligence or manslaughter.

Further harmonisation

The thematic workshops on safer driving in Europe and vulnerable and unprotected road users emphasised the need for a package of further harmonisation of licensing, testing and training at EU level, notably as regards unprotected road users such as novice drivers and motorcyclists. Further harmonised action was also recommended relating to the training and qualification of driving instructors and examiners.

It was noted during one of the workshops that the evidence-base for a relationship between mandatory training and road casualty reduction was lacking to date for the general driving population. However, research indicates that graduated driver and rider licensing can lead to a marked reduction of road casualties. Restrictions to reduce exposure to risk such as zero blood alcohol limits, specified periods of accompanied driving (research from Sweden and Norway has concluded that between 5,000 and 7,000 km or around 120 hours of on-road practice can substantially reduce the crash risk of novice drivers[71],[72]) and a stricter demerit point system have all been employed with success and these are recommended as priority actions. The age of access to motor vehicle riding and driving has also been identified as a key factor for road safety which deserves EU level review.

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[71] Gregersen, N.P., Berg, H-Y., Dahlstedt, S., Engström, I., Nolén, S., Nyberg, A., Nygaard, B. & RimP.A. (2000) Sixteen years age limit for learner drivers in Sweden - an evaluation of safety. In: Accident Analysis and Prevention, vol. 32, nr. 1, p. 25-35

[72] Sagberg, F. (2002). 'Driver education from the age of 16: potential of an extended learning period and increased driving experience to reduce the crash of novice drivers. Experiences in Norway', in: BASt (ed.), Zweite internationale Konferenz 'Junge Fahrer und Fahrerinnen. Berichte der Bundesanstalt für Straßenwesen. Mensch und Sicherheit. Heft M 143, Bremerhaven: Wirtschaftsverlag.

In the additional written contributions and in the workshop on Training, Education and Enforcement there was a lot of support for an EU Directive on cross-border enforcement which aims to facilitate the enforcement of financial penalties against drivers who commit an offence in another Member State than the one where the vehicle concerned is registered.

Information

Social marketing campaigns and safety education and combined enforcement and publicity to encourage compliance (especially deterrence of drinking, driving and riding and speeding) were deemed important in the internet consultation, but not necessarily to be carried out at EU level. In the additional written contributions, the need for improvements in awareness-raising, education and training was cited by several organisations, although combined information and enforcement is needed to deliver casualty savings.

Recommendations for EU level action:

- *Harmonise further licensing, testing and training for all motor vehicle drivers and improve the safety quality of the whole package based on evidence and best practice.*
- *Introduce graduated licensing for novice drivers and riders including accompanied driving; probationary periods (driving alone at night time, zero blood alcohol content, and stricter demerit point system).*
- *Introduce a Directive to harmonise cross-border enforcement*
- *Review age of access to riding/driving different motor vehicles based on international best safety practice.*
- *Harmonise further qualifications of motor vehicle driving examiners and vehicle inspectors.*
- *Develop authoritative best practice guideline/protocols in support of key areas of enforcement.*

At national level and local levels:

- *Carry out social marketing campaigns and combined enforcement and publicity to encourage compliance with key safety rules.*
- *Introduce owner liability for automated enforcement offences.*
- *Introduce rehabilitation programs for offenders.*

See also COWI Safer Driving in the EU through Training, Education and Enforcement Background Paper for further information.

Post-impact care

While the consultation process did not expressly seek opinions concerning problems and priorities, the quality of the emergency medical system can have an important bearing on the survivability of crashes and the prevention of disability and this was mentioned in the thematic workshops and written contributions.

Recommendations for EU, national and local level actions:

- *Acknowledge that the quality of the emergency medical system is key to achieving a safe traffic system.*
- *Review the potential contribution of improved emergency medical response to targets and strategies.*
- *Measure emergency medical response times between the crash scene and arrival at a medical centre against international best practice.*
- *Promote first responder schemes and in-service training for professional and commercial drivers.*
- *Promote eCall.*

Appendix 1 Data collected

Appendix 1.1 Road safety evolution in EU

Road safety evolution in EU

December 2009

Fatalities

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2007	2008 - 2007
Belgique/België	1.873	1.671	1.660	1.892	1.449	1.356	1.364	1.500	1.397	1.470	1.486	1.306	1.214	1.162	1089	1069	1071	944	-12%
България (Bulgaria)	1.114	1.299	1.307	1.390	1.264	1.014	915	1.003	1.047	1.012	1.011	959	960	943	957	1043	1006	1061	5%
Česká republika	1.331	1.571	1.524	1.637	1.588	1.562	1.597	1.360	1.455	1.486	1.334	1.431	1.447	1.382	1286	1063	1221	1076	-12%
Danmark	606	577	559	546	582	514	489	499	514	498	431	463	432	369	331	306	406	406	0%
Deutschland	11.300	10.631	9.949	9.814	9.454	8.758	8.549	7.792	7.772	7.503	6.977	6.842	6.613	5.842	5361	5091	5056	4477	-11%
Eesti	490	287	321	364	332	213	280	284	232	204	199	223	164	170	170	204	196	132	-33%
Ireland	445	415	431	404	437	453	473	458	414	418	412	376	337	377	400	365	338	279	-17%
Ελλάδα (Elláda)	2.112	2.158	2.160	2.253	2.412	2.157	2.105	2.182	2.116	2.037	1.880	1.634	1.605	1.670	1658	1657	1612	1555	-4%
España	8.837	7.818	6.375	5.612	5.749	5.482	5.604	5.956	5.738	5.777	5.517	5.347	5.400	4.749	4442	4104	3823	3100	-19%
France	10.483	9.902	9.865	9.019	8.892	8.540	8.445	8.920	8.486	8.079	8.162	7.655	6.058	5.530	5318	4709	4620	4275	-7%
Italia	8.109	8.053	7.187	7.091	7.020	6.676	6.714	6.313	6.688	7.061	7.096	6.980	6.563	6.122	5818	5669	5131	4731	-8%
Κύπρος (Kypros)/Kibris	103	132	115	133	118	128	115	111	113	111	98	94	97	117	102	86	89	82	-8%
Latvija	997	787	724	774	660	594	567	677	652	635	558	599	532	516	442	407	419	316	-25%
Lietuva	1.093	779	958	765	672	667	752	829	748	641	706	697	709	752	773	760	739	498	-33%
Luxembourg	83	69	78	65	70	71	60	57	58	76	70	62	53	50	47	36	43	35	-19%
Magyarország	2.120	2.101	1.678	1.862	1.589	1.370	1.391	1.371	1.306	1.200	1.239	1.429	1.326	1.296	1278	1303	1232	996	-19%
Malta	16	11	14	6	14	19	18	17	4	15	16	16	16	13	17	11	12	15	25%
Nederland	1.281	1.253	1.235	1.298	1.334	1.180	1.163	1.066	1.090	1.082	993	987	1.028	804	750	730	709	677	-5%
Österreich	1.551	1.403	1.283	1.338	1.210	1.027	1.105	963	1.079	976	958	956	931	878	768	730	691	679	-2%
Polska	7.901	6.946	6.341	6.744	6.900	6.359	7.310	7.080	6.730	6.294	5.534	5.827	5.640	5.712	5444	5243	5583	5437	-3%
Portugal	3.217	3.086	2.701	2.505	2.711	2.730	2.521	2.126	2.028	1.877	1.670	1.655	1.542	1.294	1247	969	974	885	-9%
România	3.078	2.816	2.826	2.877	2.845	2.845	2.863	2.778	2.505	2.499	2.450	2.411	2.229	2.442	2629	2587	2800	3061	9%
Slovenija	462	493	493	505	415	389	357	309	334	313	278	269	242	274	258	262	293	214	-27%
Slovensko	614	677	584	633	660	616	788	819	647	628	614	610	645	603	560	579	627	558	-11%
Suomi/Finland	632	601	484	480	441	404	438	400	431	396	433	415	379	375	379	336	380	344	-9%
Sverige	745	759	632	589	572	537	541	531	580	591	583	560	529	480	440	445	471	397	-16%
United Kingdom	4.753	4.379	3.957	3.807	3.765	3.740	3.743	3.581	3.564	3.580	3.598	3.581	3.658	3.368	3336	3298	3059	2645	-14%
	75.346	70.674	65.441	63.903	63.155	59.401	60.267	58.982	57.728	56.459	54.303	53.344	50.349	47.290	45.300	43.062	42.601	38.875	-9%

Source : CARE (EU road accidents database) or national publications

European Commission / Directorate General Energy and Transport

Road safety evolution in EU

December 2009

Accidents

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2008 - 2007
Belgique/België	58.223	55.438	54.933	53.018	50.744	48.750	50.078	51.167	51.601	49.065	47.444	47.444	50.479	48.670	49.307	49.171	43.239	42.115	-3%
България (Bulgaria)	4.875	7.206	7.355	7.288	7.435	6.351	6.018	6.905	7.586	6.886	6.709	6.769	6.997	7.612	8.224	8.222	8.010	8.045	0%
Česká republika	21.460	24.936	25.147	27.590	28.746	29.340	28.376	27.207	26.918	25.445	26.027	26.586	27.320	26.516	25.239	22.115	23.060	22.481	-3%
Danmark	8.757	8.965	8.513	8.279	8.373	8.080	8.004	7.556	7.605	7.346	6.856	7.121	6.749	6.209	5.413	5.403	5.549	5.020	-10%
Deutschland	385.147	395.462	385.384	392.754	388.003	373.082	380.835	377.257	395.689	382.949	375.345	362.054	354.534	339.308	336.618	327.984	335.845	320.614	-5%
Eesti	1.923	1.167	1.317	1.584	1.644	1.318	1.491	1.612	1.472	1.504	1.888	2.164	1.931	2.244	2.341	2.585	2.449	1.857	-24%
Ireland	6.493	6.677	6.376	6.610	8.117	8.686	8.495	8.239	7.806	7.749	6.909	6.625	5.984	5.780	6.533	6.018	5.544		
Ελλάδα (Elláda)	20.764	22.006	22.165	22.222	22.798	23.775	24.295	24.819	24.231	23.001	19.671	16.809	15.751	15.514	16.914	16.190	15.499	15.983	3%
España	98.128	87.293	79.925	78.474	83.586	85.588	86.062	97.570	97.811	101.729	100.393	98.433	99.987	94.009	91.187	99.779	100.508	93.161	-7%
France	148.886	143.361	137.500	132.726	132.949	125.406	125.202	124.387	124.524	121.223	116.745	105.470	90.220	85.390	84.525	80.309	81.272	74.487	-8%
Italia	170.702	170.814	153.393	170.679	182.761	190.068	190.031	204.615	225.646	229.034	263.100	239.354	252.271	243.490	240.011	238.124	230.871	218.963	-5%
Κύπρος (Kypros)/Kibris					3.052		3.021	2.641	2.500	2.397	2.393	2.389	2.358	1.880	1.382	1.558	1.468	1.392	-5%
Latvija	4.271	3.474	3.389	3.814	4.056	3.711	3.925	4.540	4.442	4.482	4.766	5.083	5.379	5.081	4.466	4.301	4.780	4.184	-12%
Lietuva	6.067	4.049	4.319	3.902	4.144	4.579	5.319	6.445	6.356	5.807	5.972	6.091	5.695	6.357	6.772	6.589	6.448	4.897	-24%
Luxembourg	1.126	1.139	1.184	1.133	1.145	1.050	1.016	1.058	1.076	899	772	769	720	716	775	805	937	757	-19%
Magyarország	24.589	24.623	19.527	20.722	19.817	18.393	19.097	20.147	18.923	17.493	18.505	19.686	19.976	20.957	20.777	20.977	20.634	19.174	-7%
Malta			756	845	969						1.231	1.312	1.188	1.281	846	894	942	2.700	187%
Nederland	40.703	41.021	40.204	41.391	42.641	41.041	41.036	41.299	42.271	42.271	35.313	33.538	31.635	27.758	27.007	24.527	25.819	21.832	-15%
Österreich	44.730	44.730	41.791	42.015	38.956	38.253	39.695	39.225	42.348	42.126	43.073	43.175	43.423	42.657	40.895	39.884	41.096	39.173	-5%
Polska	54.038	50.989	48.901	53.647	56.904	57.911	66.586	61.855	55.106	57.331	53.799	53.559	51.078	51.069	48.100	46.876	49.536	49.054	-1%
Portugal	48.953	50.851	48.645	45.830	48.339	49.265	49.417	49.357	48.508	44.463	42.521	42.219	41.495	38.930	37.065	35.680	35.311	33.613	-5%
România	8.948	8.181	8.972	9.381	9.119	8.931	8.801	8.457	7.950	7.555	7.528	7.453	6.942	7.335	19.819	21.905	24.861	29.307	19%
Slovenija	5.479	5.781	6.290	6.552	6.567	6.273	6.973	5.874	7.009	8.584	9.595	10.541	11.910	12.890	10.509	11.620	11.640	9.165	-21%
Slovensko					8.713		9.489	9.704	8.578	7.884	8.181	7.866	8.551	8.443	7.895	7.987	8.500	8.245	-3%
Suomi/Finland	9.374	7.882	6.147	6.245	7.812	7.274	6.980	6.902	6.997	6.633	6.451	6.196	6.907	6.767	7.020	6.740	6.657	6.881	3%
Sverige	16.003	15.599	14.959	15.888	15.626	15.321	15.752	15.514	15.834	15.770	15.796	16.947	18.365	18.029	18.094	18.213	18.548	18.309	-1%
United Kingdom	242.060	239.754	235.492	241.037	237.336	243.286	247.479	246.410	242.610	242.117	236.461	234.247	220.079	213.043	203.712	194.789	188.105	176.801	-6%
	1.444.623	1.434.795	1.374.434	1.405.067	1.420.352	1.408.916	1.435.023	1.451.802	1.482.628	1.462.996	1.463.444	1.409.880	1.387.924	1.337.935	1.321.450	1.299.245	1.296.928	1.233.754	-5%

Source : CARE (EU road accidents database) or national publications

European Commission / Directorate General Energy and Transport

Road safety evolution in EU

December 2009

Injured

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007		2006 - 2007
Belgique/België	82.646	79.101	78.008	75.332	72.300	68.899	71.540	72.758	73.145	69.961	65.294	59.548	57.326	56.814	53.610	*54.615*	57200	55643	-3%
България (Bulgaria)	5.168	8.254	8.548	8.441	8.717	7.325	7.007	7.980	9.098	8.030	7.984	8.100	8.488	9.308	10.112	10.215	9827	9956	1%
Česká republika	27.502	32.000	32.277	35.667	36.967	37.743	36.608	35.227	34.710	32.439	33.676	34.389	35.438	34.254	32.211	*28.114*	29191	28501	-2%
Danmark	10.265	10.514	9.930	9.757	9.991	9.810	9.617	9.175	9.393	9.093	8.465	8.791	8.412	7.546	6.589	*6.515*	6657	5923	-11%
Deutschland	505.535	516.797	505.591	516.415	512.141	493.158	501.094	497.319	521.127	504.074	494.775	476.404	462.170	440.109	433.430	*422.322*	431419	409047	-5%
Eesti	2.131	1.289	1.502	1.832	1.897	1.547	1.837	1.989	1.690	1.843	2.443	2.868	2.539	2.875	3.023	*3.509*	3270	2398	-27%
Ireland	9.877	10.189	9.833	10.231	12.679	13.495	13.298	12.955	12.510	12.224	10.405	9.206	8.430	7.953	*9.477*	*8.532*	7806		0%
Ελλάδα (Elláda)	28.949	30.284	29.910	30.297	31.180	32.755	33.464	33.721	32.706	30.763	26.336	22.459	20.737	20.179	22.048	*20.675*	19766	19010	-4%
España	148.450	129.949	118.065	114.525	122.277	124.955	126.152	142.302	143.741	150.526	149.600	146.917	150.634	138.383	132.809	*143.450*	142522	130947	-8%
France	205.968	198.103	189.020	180.832	181.403	170.117	169.578	168.535	167.572	162.117	153.505	137.426	115.602	108.429	108.076	*102.125*	103201	93798	-9%
Italia	240.714	241.106	216.111	239.184	259.571	272.115	270.966	293.842	322.999	380.013	373.286	378.492	356.475	343.179	334.858	*332.955*	325850	310739	-5%
Κύπρος (Kypros)/Kibris	4.164	4.731	4.196	4.374	4.519	4.516	4.490	3.916	3.712	3.586	3.528	3.526	3.411	3.176	2.296	*2.589*	2155	1963	-9%
Latvija	4.543	3.786	3.721	4.380	4.903	4.324	4.674	5.414	5.244	5.449	5.852	6.300	6.639	6.416	5.600	*5.400*	6085	5408	-11%
Lietuva	6.638	4.251	4.555	4.146	4.508	5.223	6.198	7.667	7.696	6.960	7.103	7.428	7.266	7.862	8.467	*8.254*	8042	5940	-26%
Luxembourg	1.639	1.656	1.642	1.575	1.660	1.538	1.498	1.500	1.500	1.255	1.176	1.728	1.052	989	1.043	*1.081*	1294	1139	-12%
Magyarország	32.676	32.577	25.430	26.961	25.886	23.939	24.757	26.392	24.670	22.698	24.149	25.978	26.627	28.054	27.505	*27.977*	27452	25369	-8%
Malta	596	698	644	777	666	741	772	853	1.146	1.184	1.231	1.312	1.188	1.281	1.143	*1.181*	1195	1172	-2%
Nederland	47.278	48.069	47.728	49.215	50.711	48.983	49.116	49.543	51.097	45.084	42.810	40.682	37.976	33.302	31.828	*28.559*	30350	27525	-9%
Österreich	49.721	49.721	46.416	46.570	44.405	43.507	45.497	45.168	48.565	48.484	56.265	56.684	56.878	55.857	53.234	*51.930*	53211	50521	-5%
Polska	65.242	61.047	58.812	64.573	70.226	71.419	83.169	77.560	68.449	71.638	68.194	67.498	63.900	64.661	61.195	*59.123*	63224	62097	-2%
Portugal	68.793	70.274	66.087	61.585	65.202	65.997	65.934	66.342	65.082	59.696	56.839	56.379	55.068	51.850	49.096	*47.018*	46198	43933	-5%
România	7.789	6.960	8.302	8.198	7.716	7.504	7.451	7.221	6.768	6.315	21.620	21.276	19.670	21.550	23.200	*26.128*	29604	36177	22%
Slovenija	6.938	7.394	7.762	7.921	7.976	7.798	8.669	7.318	8.980	11.574	13.222	14.404	17.007	18.944	14.783	*16.607*	16404	12742	-22%
Slovensko	9.706	11.500	11.418	10.994	11.573	11.648	12.573	12.902	11.466	10.094	10.839	10.263	11.321	11.190	10.490	*10.692*	11310	11040	-2%
Suomi/Finland	11.547	9.899	7.806	8.080	10.191	9.299	8.957	9.097	9.052	8.508	8.411	8.156	9.088	8.791	8.983	*8.580*	8446	8513	1%
Sverige	21.057	20.727	19.741	21.083	21.173	20.810	21.280	21.356	21.964	22.032	22.330	24.747	27.103	26.582	26.459	*26.636*	26749	26248	-2%
United Kingdom	316.929	317.638	313.278	323.646	318.647	329.413	336.758	321.791	316.887	316.874	317.306	305.958	297.274	286.979	275.840	*264.288*	254160	237790	-6%
	1.907.125	1.894.423	1.811.261	1.861.362	1.894.225	1.885.557	1.920.045	1.937.278	1.978.197	1.945.284	1.986.644	1.936.919	1.867.719	1.796.513	1.747.406	*1.719.070*	1.722.588	1.631.345	-5%

Source : CARE (EU road accidents database) or national publications

European Commission / Directorate General Energy and Transport

Road safety evolution in EU

December 2009

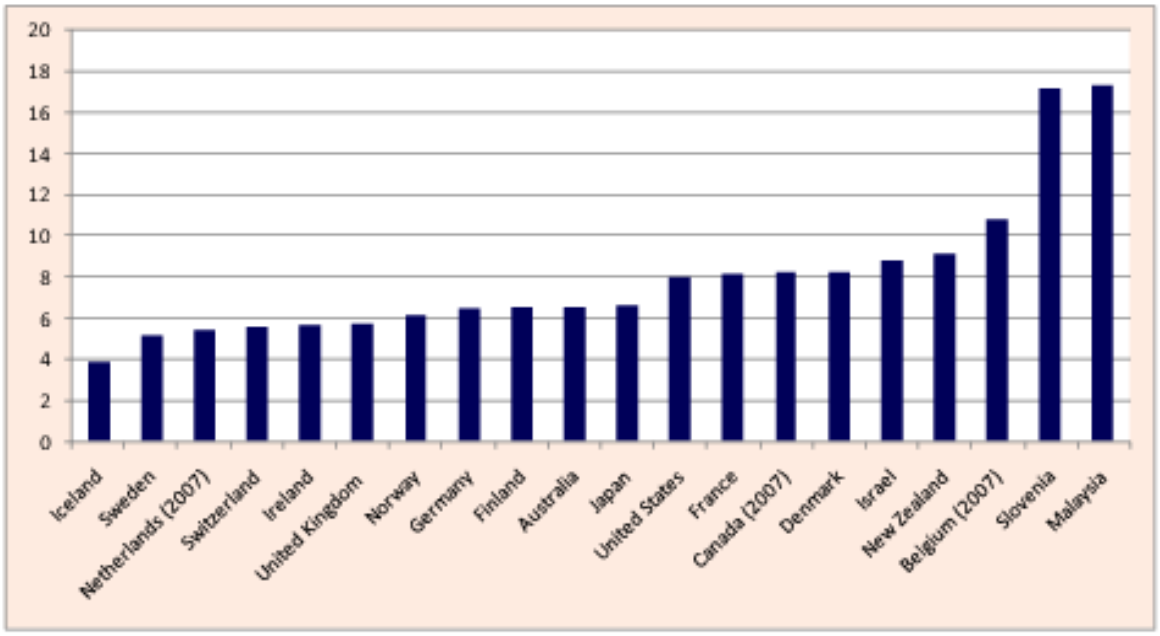
Fatalities by population

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Belgique/België	188	167	165	168	143	134	134	147	137	144	145	127	117	112	104	102	101	88
България (Bulgaria)	129	152	154	165	150	121	110	121	128	126	128	122	123	121	123	135	131	139
Česká republika	129	152	148	158	154	151	155	132	141	145	130	140	142	135	126	104	119	104
Danmark	118	112	108	105	112	98	93	94	97	93	81	86	80	68	61	56	75	74
Deutschland	142	132	123	121	116	107	104	95	95	91	85	83	80	71	65	62	61	54
Eesti	313	185	212	246	229	149	199	204	168	149	146	164	121	126	126	152	146	98
Ireland	126	117	121	113	121	125	129	124	111	111	107	96	85	94	97	87	78	63
Ελλάδα (Elláda)	207	209	207	214	228	202	196	202	195	187	172	149	146	151	150	149	144	139
España	227	200	163	143	146	139	142	150	144	144	136	131	130	112	103	94	86	68
France	184	173	172	157	154	147	145	153	145	137	138	129	101	92	85	75	73	67
Italia	143	142	126	125	123	117	118	111	118	124	125	122	114	106	100	96	87	79
Κύπρος (Kypros)/Kibris	175	219	186	210	183	195	173	164	165	161	140	133	136	160	136	112	114	103
Latvija	375	298	280	305	264	241	232	280	272	267	236	238	228	222	192	177	184	139
Lietuva	295	210	259	208	184	184	210	233	212	183	202	201	205	218	226	223	218	148
Luxembourg	216	177	198	162	173	172	144	135	136	175	159	140	118	111	103	77	90	72
Magyarország	204	203	162	151	154	133	135	133	127	117	121	140	131	128	127	129	122	99
Malta	45	31	39	16	38	51	48	45	11	39	41	41	40	33	42	27	29	37
Nederland	85	83	81	85	86	76	75	68	69	68	62	61	63	49	46	45	43	41
Österreich	201	180	163	169	152	129	139	121	135	122	119	119	115	108	94	88	83	81
Polska	207	181	165	175	179	165	189	183	174	163	145	152	148	150	143	137	146	143
Portugal	323	310	271	251	271	272	250	210	200	184	163	160	148	124	118	92	92	83
România	135	126	127	130	128	129	130	126	114	114	112	111	103	113	121	120	130	142
Slovenija	231	247	247	254	209	195	180	156	169	157	140	135	121	137	129	131	146	106
Slovensko	116	128	110	119	123	115	146	152	120	116	114	113	120	112	104	107	116	103
Suomi/Finland	126	120	96	95	86	79	85	78	84	77	84	80	73	72	72	64	72	65
Sverige	87	88	73	67	65	61	61	60	66	67	66	63	59	53	49	49	52	43
United Kingdom	83	76	69	66	65	64	64	61	61	61	61	60	62	56	56	55	50	43
	160	**150**	**138**	**134**	**133**	**124**	**126**	**123**	**120**	**118**	**113**	**111**	**104**	**97**	**92**	**87**	**86**	**78**

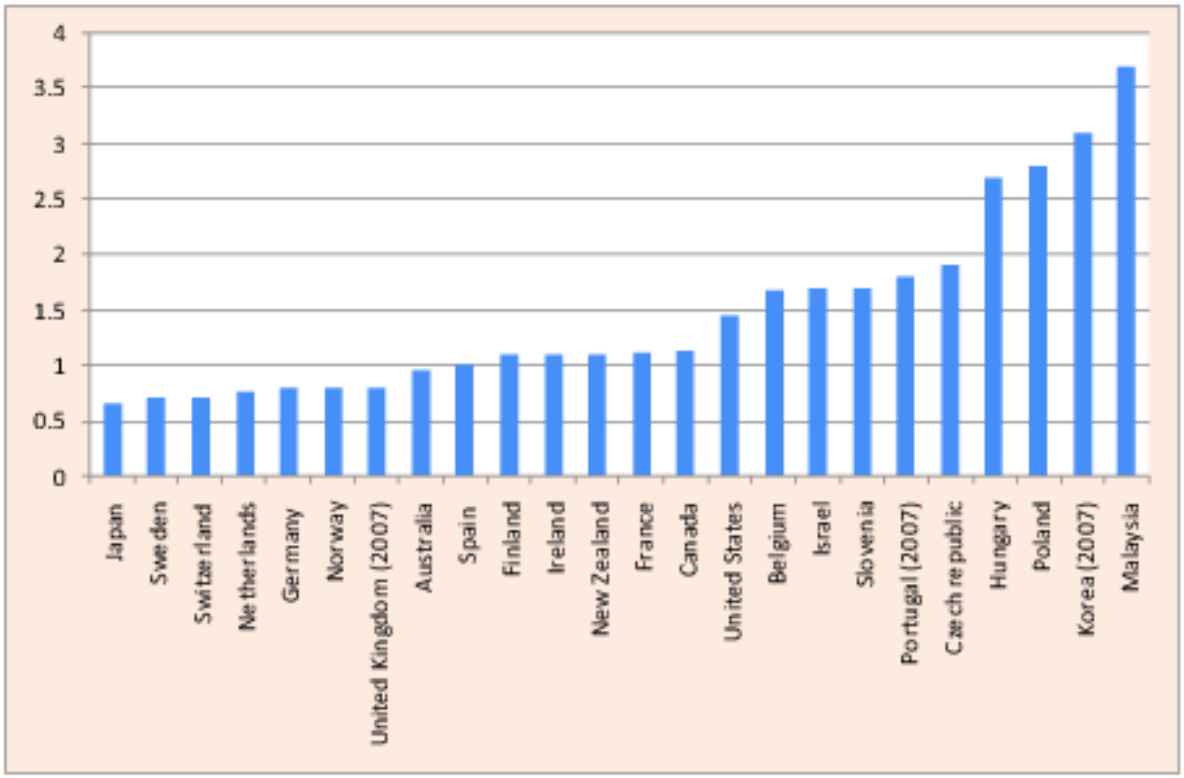
Source : CARE (EU road accidents database) or national publications

European Commission / Directorate General Energy and Transport

Appendix 1.2 Fatalities by vehicle km and by vehicles

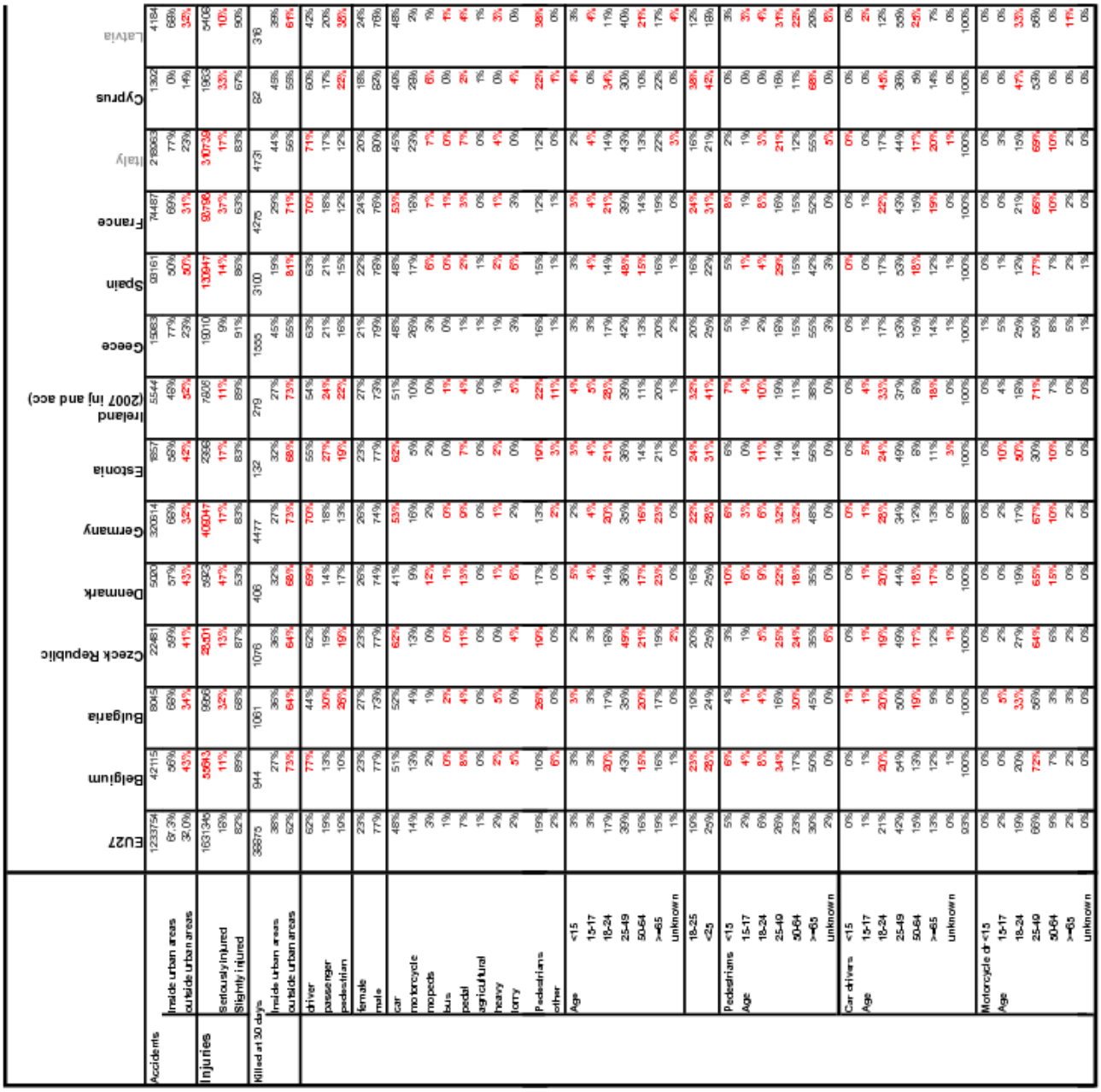


Fatalities per billion vehicle km in 2008 or 2007 where indicated (IRTAD Annual Report 2009, International Traffic Safety Data and Analysis Group, www.irtad.net).



Fatalities per 10,000 vehicle in 2008 or 2007 where indicated (IRTAD Annual Report 2009, International Traffic Safety Data and Analysis Group, www.irtad.net).

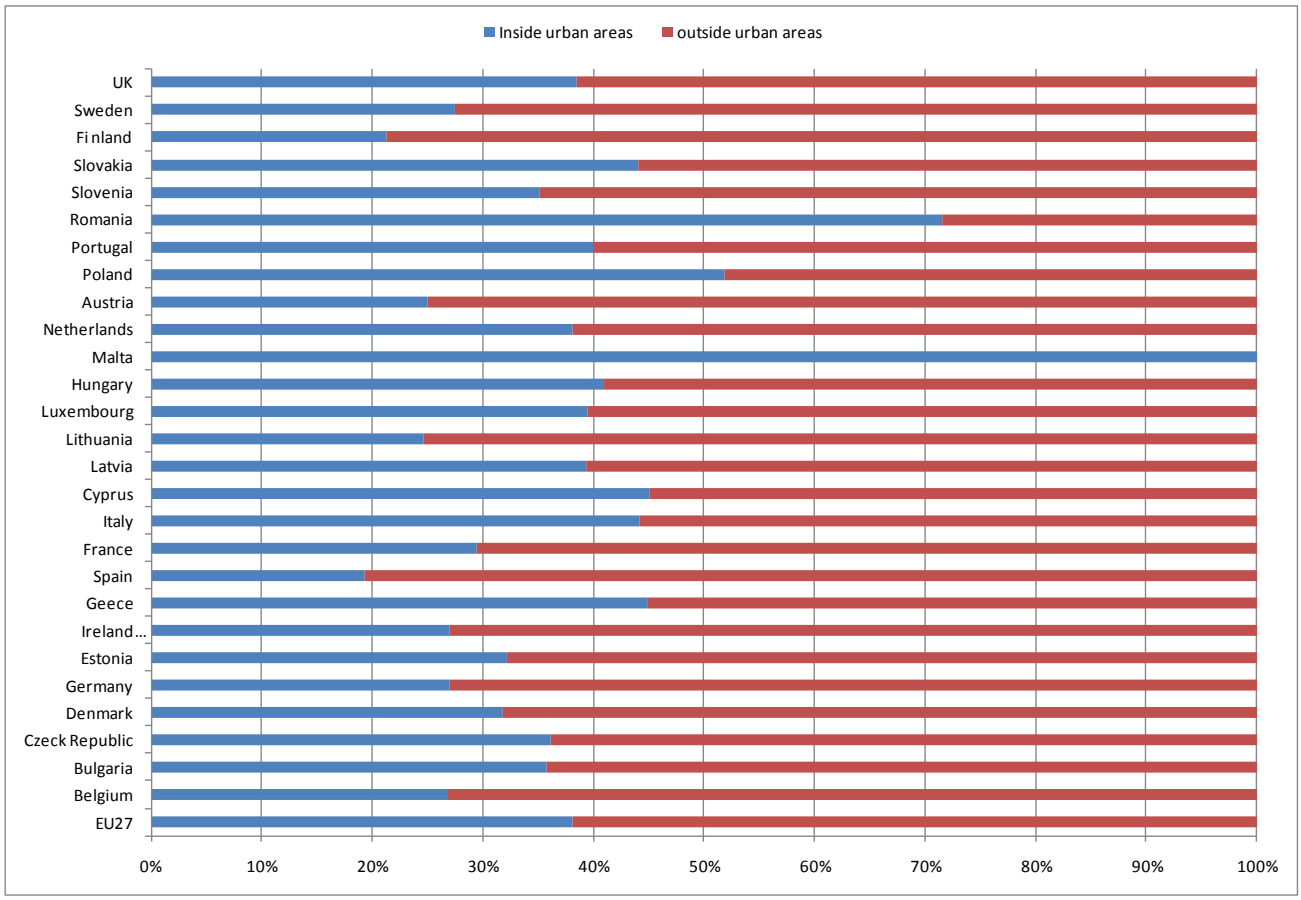
Appendix 1.3 Data with share by country of mode, age, etc.



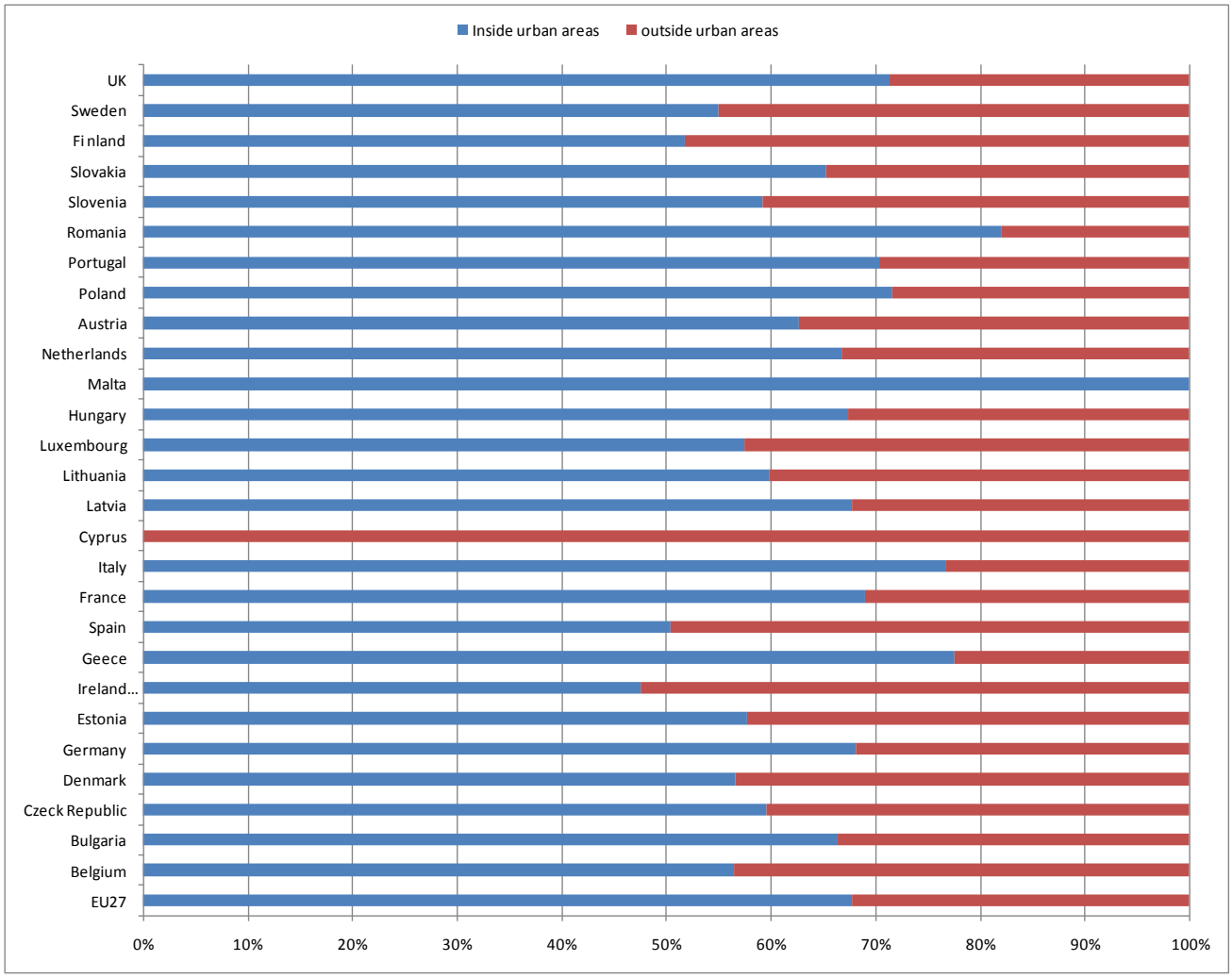
		EU27	Belgium	Bulgaria	Czech Republic	Denmark	Germany	Estonia	Ireland (2007 inj and acc)	Greece	Spain	France	Italy	Cyprus	Latvia
Accidents		1233754	42115	8045	22481	5000	320614	1657	5544	15883	93161	74487	218063	1302	4184
	Inside urban areas	67.3%	56%	68%	59%	57%	68%	56%	48%	77%	50%	69%	77%	0%	68%
	outside urban areas	32.0%	43%	34%	41%	43%	32%	42%	52%	23%	50%	31%	23%	14%	32%
Injuries		1631340	55643	9866	28501	6923	400047	2366	7600	19010	130947	89798	310739	1963	5408
	Seriously injured	18%	11%	32%	13%	47%	17%	17%	11%	9%	14%	37%	17%	33%	10%
	Slightly injured	82%	89%	68%	87%	53%	83%	83%	89%	91%	86%	63%	83%	67%	90%
Killed et 30 days		38875	944	1061	1076	406	4477	132	279	1555	3100	4275	4731	82	316
	Inside urban areas	38%	27%	36%	36%	32%	27%	32%	27%	45%	19%	29%	44%	43%	39%
	outside urban areas	62%	73%	64%	64%	68%	73%	68%	73%	55%	81%	71%	56%	58%	61%
	driver	62%	77%	44%	62%	69%	70%	55%	54%	63%	63%	70%	71%	60%	42%
	passenger	19%	13%	30%	19%	14%	18%	27%	24%	21%	21%	18%	17%	17%	20%
	pedestrian	19%	10%	26%	19%	13%	13%	19%	22%	16%	15%	12%	12%	22%	38%
	female	23%	23%	27%	23%	26%	26%	23%	27%	21%	22%	24%	20%	18%	24%
	male	77%	77%	73%	77%	74%	74%	77%	73%	79%	78%	76%	80%	82%	76%
	car	48%	51%	52%	62%	41%	53%	62%	51%	48%	48%	53%	45%	40%	48%
	motorcycle	14%	13%	4%	13%	9%	16%	5%	10%	26%	17%	18%	23%	28%	2%
	mopeds	3%	2%	1%	0%	12%	2%	2%	0%	3%	6%	7%	7%	6%	1%
	bus	1%	0%	2%	0%	1%	0%	0%	1%	0%	0%	1%	0%	0%	1%
	pedal	7%	8%	4%	11%	13%	9%	7%	4%	1%	2%	3%	7%	2%	4%
	agricultural	1%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	1%	1%
	heavy	2%	2%	5%	0%	1%	1%	2%	1%	1%	2%	1%	4%	0%	3%
	lorry	2%	5%	0%	4%	6%	2%	0%	5%	3%	6%	3%	0%	4%	0%
	Pedestrians	19%	10%	26%	19%	17%	13%	19%	22%	16%	15%	12%	12%	22%	38%
	other	2%	2%	0%	0%	0%	2%	3%	1%	1%	1%	0%	0%	1%	0%
	Age <15	3%	3%	3%	2%	5%	2%	3%	4%	3%	3%	3%	2%	4%	3%
	15-17	3%	3%	3%	3%	4%	4%	4%	5%	3%	4%	4%	4%	0%	4%
	18-24	17%	20%	17%	18%	14%	20%	21%	28%	17%	14%	21%	14%	34%	11%
	25-49	39%	43%	39%	49%	39%	39%	39%	39%	42%	48%	39%	43%	30%	40%
	50-64	16%	15%	20%	21%	17%	16%	14%	11%	13%	15%	14%	13%	10%	21%
	>=65	19%	16%	17%	19%	23%	23%	21%	20%	20%	16%	19%	13%	22%	17%
	Unknown	1%	1%	0%	2%	0%	0%	0%	1%	2%	2%	0%	0%	0%	4%
	18-25	10%	23%	10%	20%	16%	22%	24%	32%	20%	16%	24%	16%	38%	12%
	<25	29%	38%	24%	29%	29%	28%	31%	41%	29%	22%	31%	21%	42%	18%
Pedestrians	<15	5%	6%	4%	3%	10%	6%	6%	7%	5%	5%	8%	2%	0%	3%
Age	15-17	2%	4%	1%	1%	6%	3%	0%	4%	1%	1%	1%	1%	0%	3%
	18-24	6%	8%	4%	5%	9%	6%	11%	10%	2%	4%	8%	3%	0%	4%
	25-49	26%	34%	16%	25%	22%	32%	14%	16%	16%	29%	16%	21%	16%	31%
	50-64	23%	17%	30%	24%	18%	32%	14%	11%	15%	15%	15%	12%	11%	22%
	>=65	30%	50%	45%	35%	35%	48%	56%	38%	55%	42%	52%	55%	68%	29%
	Unknown	2%	0%	0%	6%	0%	0%	0%	0%	3%	3%	0%	5%	0%	8%
Car drivers	<15	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Age	15-17	1%	1%	1%	1%	1%	1%	1%	4%	1%	0%	1%	1%	0%	2%
	18-24	21%	20%	20%	19%	20%	28%	24%	33%	17%	17%	22%	17%	45%	12%
	25-49	42%	54%	50%	46%	44%	34%	49%	37%	53%	53%	43%	44%	36%	55%
	50-64	15%	13%	19%	17%	18%	12%	8%	8%	15%	18%	15%	17%	5%	25%
	>=65	13%	12%	9%	12%	17%	13%	11%	18%	14%	12%	15%	20%	14%	7%
	Unknown	0%	1%	0%	1%	0%	0%	3%	0%	1%	1%	0%	1%	0%	0%
		93%	100%	100%	100%	100%	88%	100%	100%	100%	100%	100%	100%	100%	100%
Motorcycle dr	<15	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Age	15-17	2%	0%	5%	2%	0%	2%	10%	4%	5%	1%	0%	3%	0%	0%
	18-24	19%	20%	33%	27%	19%	17%	30%	18%	25%	12%	21%	15%	47%	33%
	25-49	66%	72%	56%	64%	65%	67%	30%	71%	59%	77%	66%	69%	53%	66%
	50-64	9%	7%	3%	6%	15%	10%	10%	7%	8%	8%	10%	10%	0%	0%
	>=65	2%	2%	3%	2%	0%	2%	0%	0%	5%	2%	2%	2%	0%	11%
	Unknown	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%

		Lithuania	Luxembourg	Hungary	Malta	Netherlands	Austria	Poland	Portugal	Romania	Slovenia	Slovakia	Finland	Sweden	UK
Accidents		4807	757	19174	2700	21832	30173	40054	33613	20907	9165	8245	6881	18300	178801
	Inside urban areas	60%	40%	67%	100%	67%	63%	69%	70%	82%	42%	69%	52%	55%	71%
	outside urban areas	40%	30%	33%	0%	33%	37%	27%	30%	18%	29%	33%	48%	45%	29%
Injuries		5940	1139	25369	1172	27525	50521	64097	43833	35177	12742	11040	8513	26348	237790
	Seriously injured	21%	22%	30%	21%	49%	24%	26%	6%	21%	8%	19%	21%	14%	11%
	Slightly injured	79%	78%	70%	79%	51%	76%	74%	94%	79%	92%	81%	79%	86%	89%
Killed at 30 days		498	35	996	15	677	679	5437	685	3061	214	556	344	397	2645
	Inside urban areas	25%	40%	41%	100%	38%	25%	52%	40%	72%	35%	44%	21%	27%	39%
	outside urban areas	75%	60%	59%	0%	62%	75%	48%	60%	28%	65%	56%	79%	73%	61%
	driver	34%	27%	21%	8%	15%	16%	22%	22%	3%	22%	23%	18%	19%	19%
	passenger	34%	27%	23%	25%	12%	16%	33%	16%	30%	11%	34%	13%	12%	22%
	pedestrian	32%	12%	23%	25%	12%	16%	33%	16%	30%	11%	34%	13%	12%	22%
	female	23%	22%	26%	8%	27%	23%	23%	19%	23%	16%	22%	27%	27%	25%
	male	77%	78%	74%	92%	73%	77%	77%	81%	77%	84%	78%	73%	73%	75%
	car	50%	57%	45%	33%	42%	55%	43%	43%	41%	62%	44%	63%	59%	40%
	motorcycle	4%	10%	9%	33%	9%	14%	3%	15%	2%	14%	5%	8%	13%	19%
	mopeds	1%	4%	3%	0%	8%	3%	1%	7%	0%	4%	0%	3%	3%	1%
	bus	3%	0%	1%	0%	0%	1%	1%	2%	0%	0%	1%	0%	1%	0%
	pedal	10%	2%	13%	0%	21%	5%	6%	3%	8%	6%	7%	6%	7%	5%
	agricultural	0%	0%	0%	0%	0%	1%	1%	3%	0%	2%	1%	1%	0%	0%
	heavy	1%	0%	1%	0%	1%	2%	4%	3%	0%	0%	3%	2%	1%	2%
	lorry	0%	0%	4%	0%	5%	2%	0%	7%	0%	0%	0%	3%	2%	2%
	Pedestrians	32%	12%	23%	25%	12%	16%	33%	16%	30%	11%	34%	13%	12%	22%
	other	-1%	0%	1%	8%	1%	1%	0%	1%	1%	3%	1%	1%	1%	1%
	Age <15	2%	4%	3%	0%	5%	2%	3%	3%	5%	3%	1%	4%	2%	3%
	15-17	4%	4%	2%	0%	5%	5%	3%	1%	2%	11%	1%	5%	5%	6%
	18-24	16%	16%	11%	33%	19%	20%	16%	15%	9%	3%	15%	20%	18%	21%
	25-49	32%	49%	44%	42%	31%	37%	37%	40%	37%	18%	40%	31%	37%	37%
	50-64	32%	6%	21%	0%	15%	16%	17%	18%	18%	39%	20%	20%	21%	13%
	>=65	15%	14%	17%	25%	26%	21%	16%	23%	15%	14%	15%	21%	22%	19%
	unknown	4%	8%	1%	0%	0%	0%	3%	1%	0%	0%	0%	0%	0%	0%
	18-25	18%	13%	13%	38%	21%	22%	18%	17%	10%	4%	17%	22%	21%	24%
	<25	29%	29%	18%	38%	31%	28%	23%	21%	17%	18%	19%	31%	27%	33%
Pedestrians	<15	3%	0%	4%	0%	0%	3%	3%	5%	7%	6%	8%	10%	7%	7%
Age	15-17	2%	0%	1%	0%	3%	3%	2%	0%	1%	0%	1%	2%	1%	6%
	18-24	9%	33%	4%	0%	10%	9%	6%	1%	6%	0%	8%	4%	9%	11%
	25-49	27%	33%	27%	67%	19%	18%	28%	27%	27%	22%	39%	8%	17%	24%
	50-64	27%	0%	32%	33%	26%	19%	30%	15%	27%	25%	19%	29%	18%	13%
	>=65	30%	33%	30%	33%	33%	40%	26%	51%	31%	56%	24%	46%	45%	40%
	unknown	0%	0%	3%	0%	0%	0%	5%	1%	0%	0%	3%	0%	0%	1%
Car drivers	<15	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	#DIV/0!	0%
Age	15-17	1%	1%	1%	0%	0%	2%	1%	0%	0%	13%	1%	1%	#DIV/0!	3%
	18-24	23%	22%	16%	75%	24%	29%	26%	21%	8%	4%	23%	26%	#DIV/0!	28%
	25-49	51%	54%	57%	25%	43%	37%	51%	43%	19%	21%	51%	39%	#DIV/0!	39%
	50-64	15%	4%	16%	0%	17%	17%	15%	19%	6%	44%	15%	21%	#DIV/0!	15%
	>=65	8%	18%	5%	0%	16%	14%	7%	16%	3%	16%	8%	17%	#DIV/0!	18%
	unknown	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	#DIV/0!	0%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	#DIV/0!	100%
Motorcycle dr	<15	0%	0%	3%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	3%
Age	15-17	5%	0%	16%	25%	0%	0%	5%	2%	1%	5%	5%	13%	#DIV/0!	3%
	18-24	40%	0%	16%	25%	21%	13%	42%	26%	10%	40%	40%	13%	#DIV/0!	16%
	25-49	77%	90%	75%	75%	62%	64%	46%	68%	19%	77%	77%	63%	#DIV/0!	65%
	50-64	7%	10%	5%	0%	16%	19%	6%	2%	2%	7%	7%	7%	#DIV/0!	13%
	>=65	2%	0%	1%	0%	2%	5%	1%	2%	0%	2%	2%	0%	#DIV/0!	3%
	unknown	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	#DIV/0!	0%

Appendix 1.4 Share inside and outside built-up areas by country

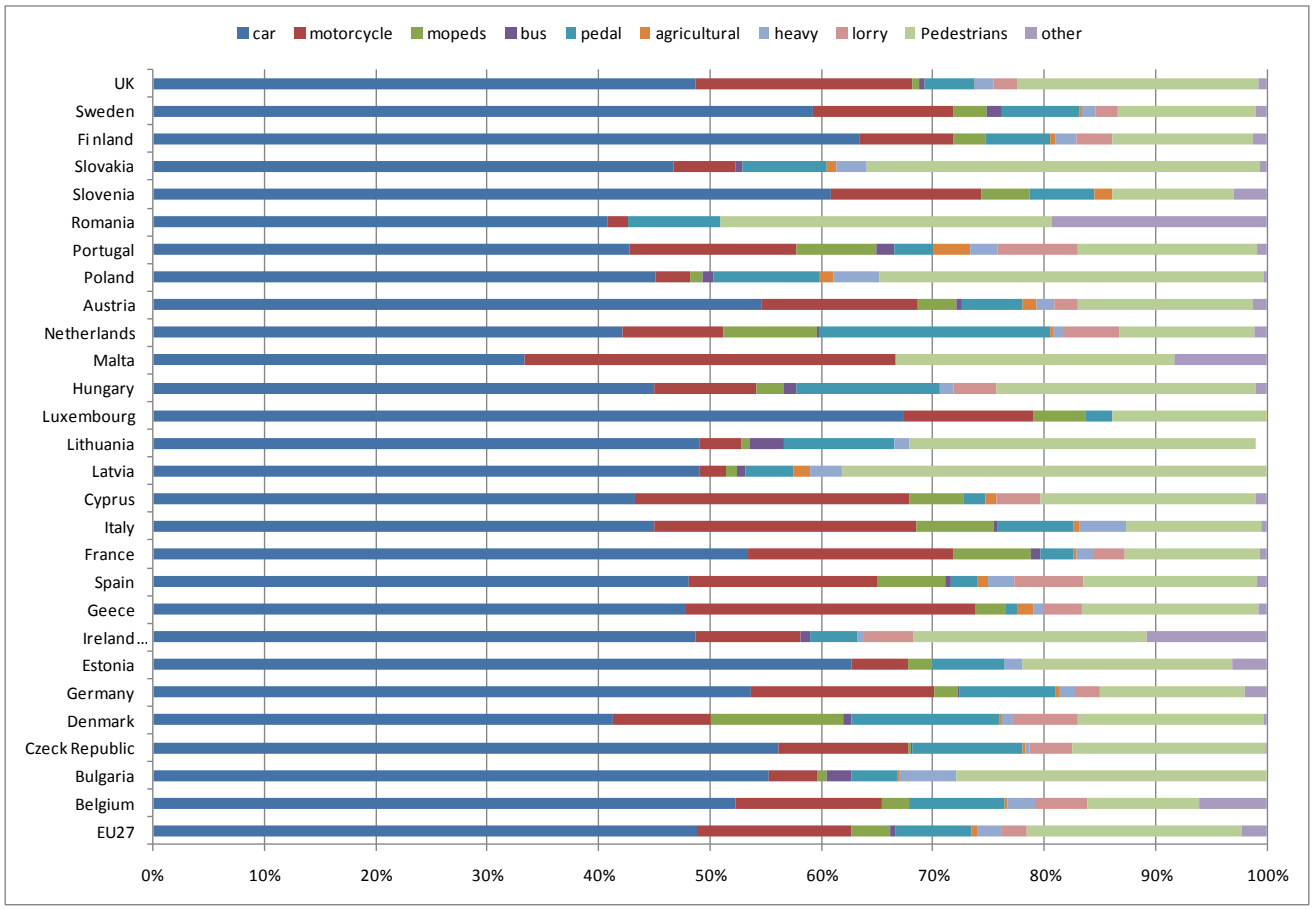


Share of fatalities inside and outside built-up areas (Source CARE database)



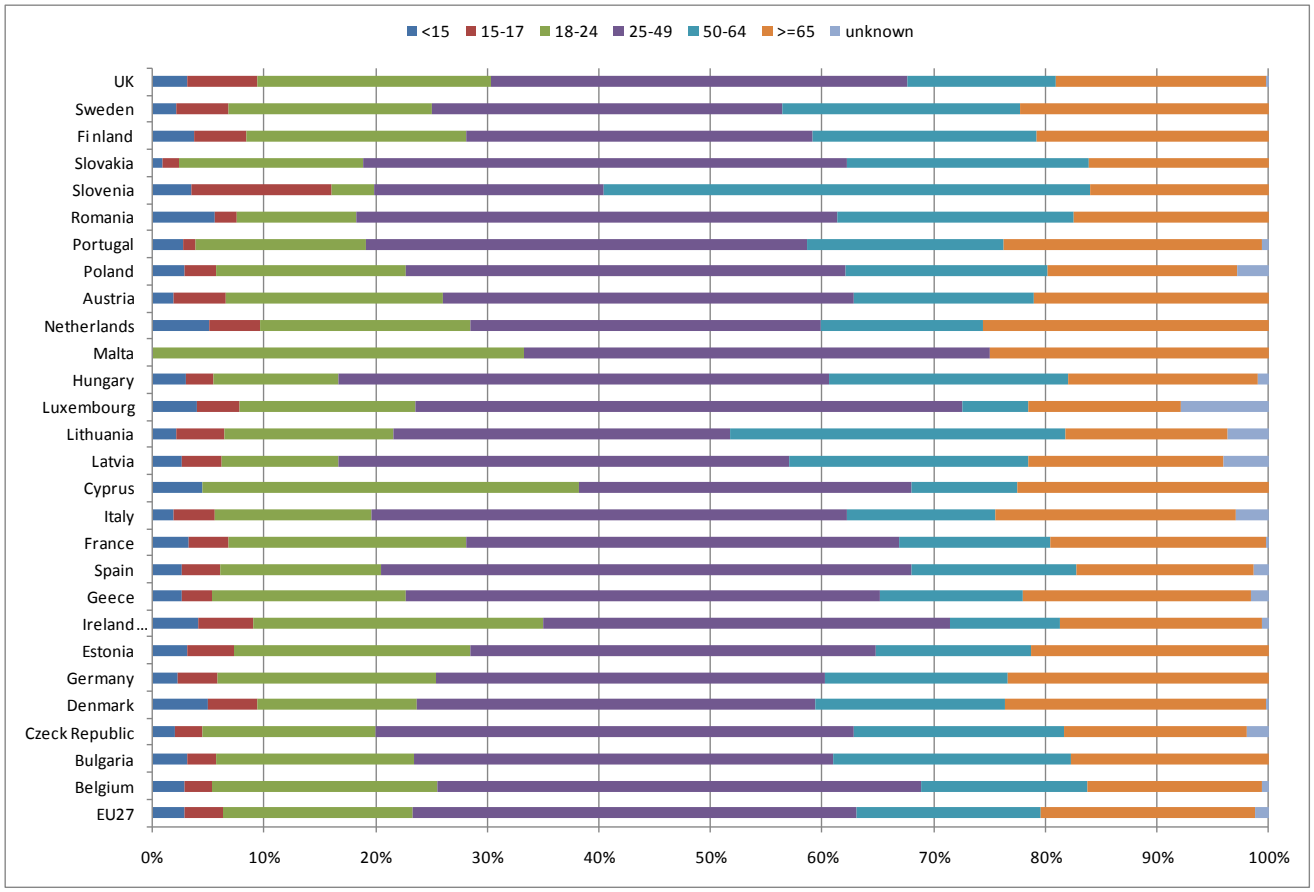
Share of accidents inside and outside built-up areas (Source CARE database)

Appendix 1.5 Share of fatalities by transport mode and country



(Source CARE database)

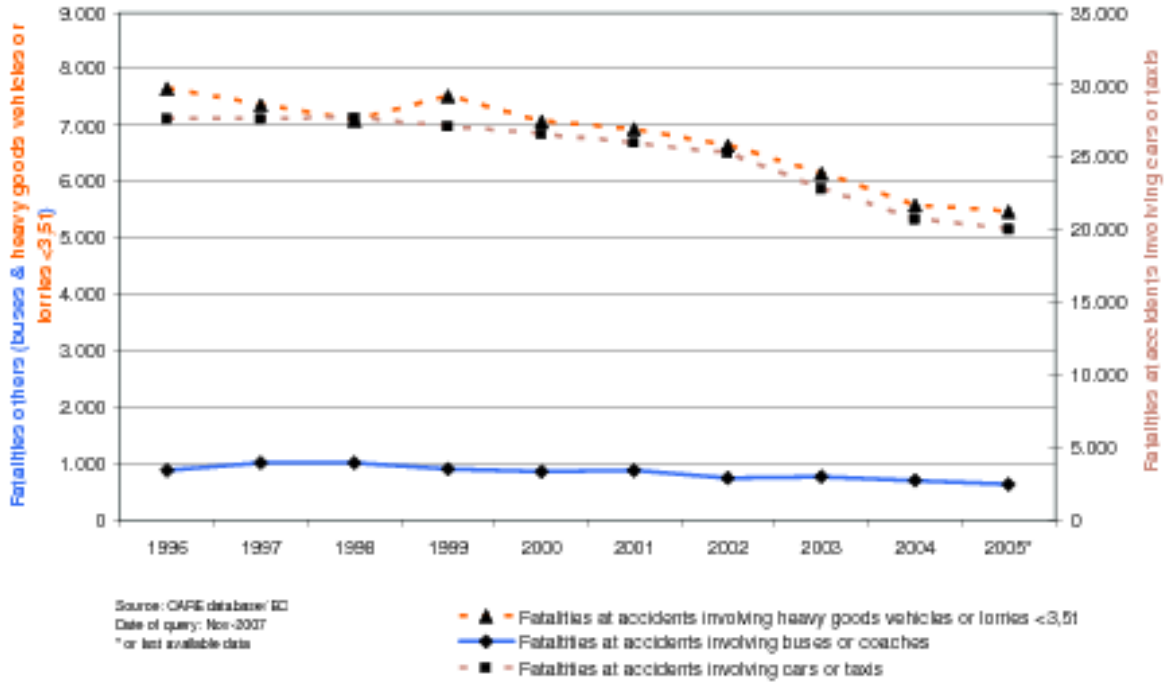
Appendix 1.6 Share of road fatalities by age and country



(Source CARE database)

Appendix 1.7 Trend in annual number of fatalities according to transport mode

Figure 15: Annual number of fatalities involving different modes of transport, EU-14 (Attention: fatalities in specific mode of transport plus all opponents fatalities), 1996-2005



Source: *Annual Statistical Report 2007, Based on data from CARE / EC, SafetyNet, Building the European Road Safety Observatory Work package 1 – Task 3, Deliverable No: D 1.16*

Appendix 1.8 Share of car driver fatalities in EU countries by age

(Source CARE database)

Appendix 1.9 Data on safer cars

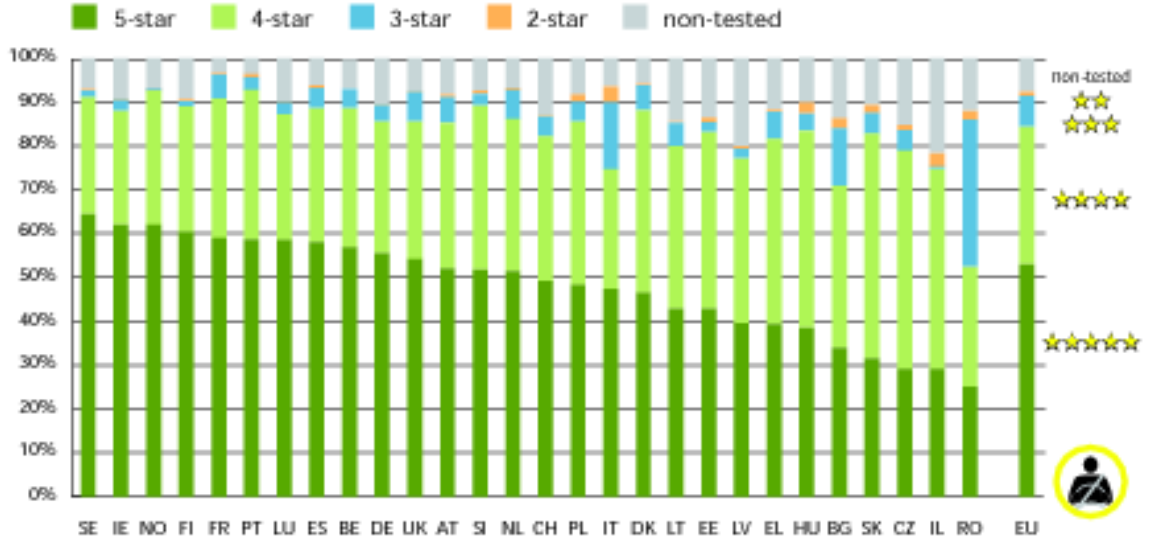


Fig 7: Occupant protection of new passenger cars sold in 2008

Proportion of cars awarded 5, 4, 3 and 2 stars and proportion of non-tested passenger cars, ranked by the number of cars awarded 5 stars. None of the cars tested in 2008 were awarded 1 star only.
Note: Cyprus and Malta are excluded from Fig. 7 as the proportion of non-tested cars represented more than 50% of the new car sold in 2008.

Occupant protection of new passenger cars sold in EU in 2008
(Source: 2010 on the Horizon, 3rd Road Safety PIN Report, ETSC, June 2009)

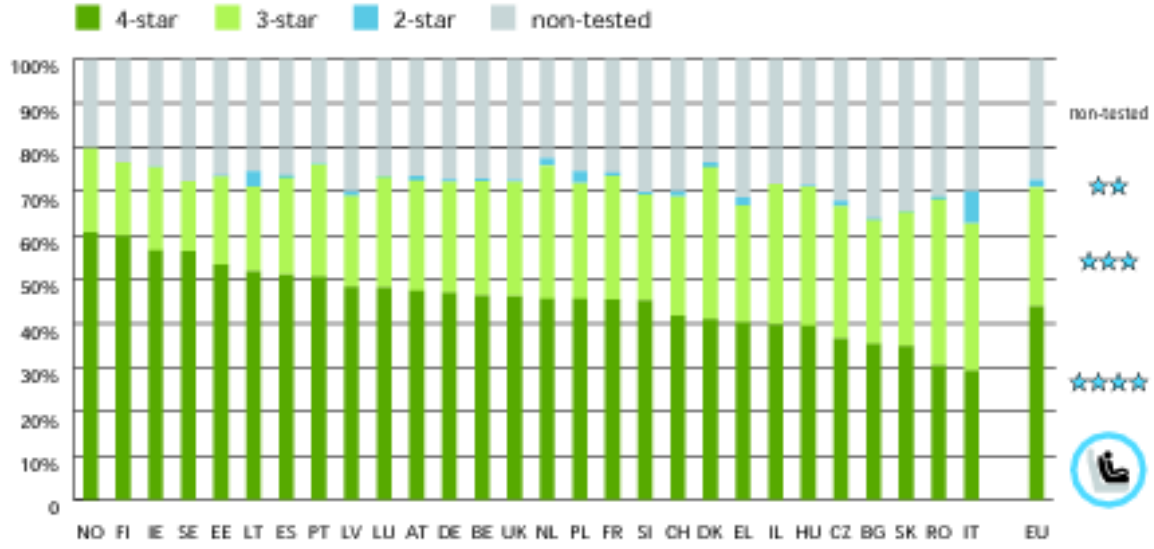


Fig. 11: Child protection of new passenger cars sold in 2008.

Proportion of cars awarded 4, 3 and 2 stars and proportion of non-tested passenger cars, ranked by the number of cars awarded 4 stars. None of the cars tested in 2008 was awarded 1 star only.
Note: Child protection scores are not available for 27% of new cars sold. Differences in this percentage between countries can influence the ranking.

Child protection of new passenger cars sold in EU in 2008
(Source: 2010 on the Horizon, 3rd Road Safety PIN Report, ETSC, June 2009)

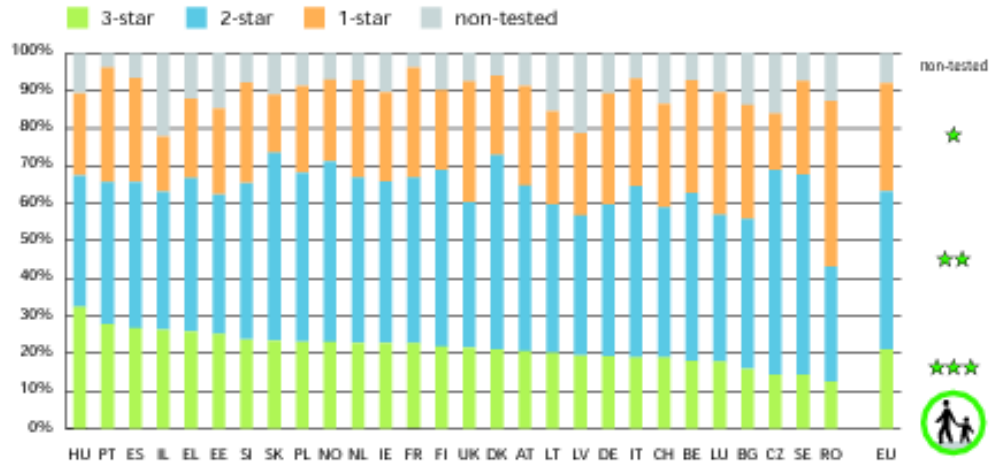


Fig. 9: Pedestrian protection of new passenger cars sold in 2008.

Proportion of cars awarded 3, 2 and 1 star and proportion of non-tested passenger cars, ranked by the number of cars awarded 3 stars.

Note: Cyprus and Malta excluded because of their high proportions of non-tested new cars.

Pedestrian protection of new passenger cars sold in EU in 2008
(Source: 2010 on the Horizon, 3rd Road Safety PIN Report, ETSC, June 2009)

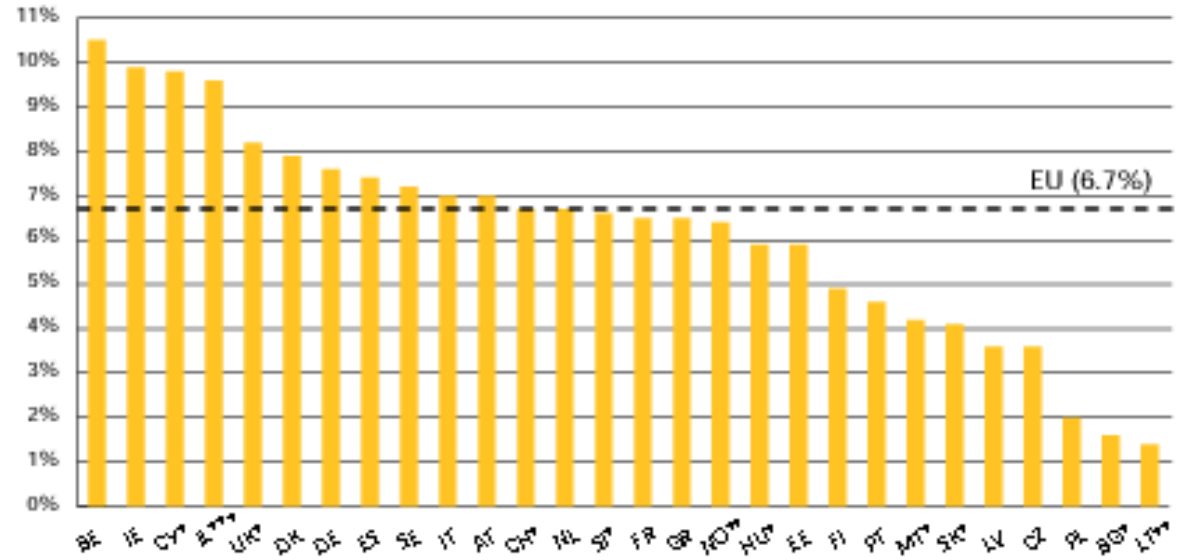


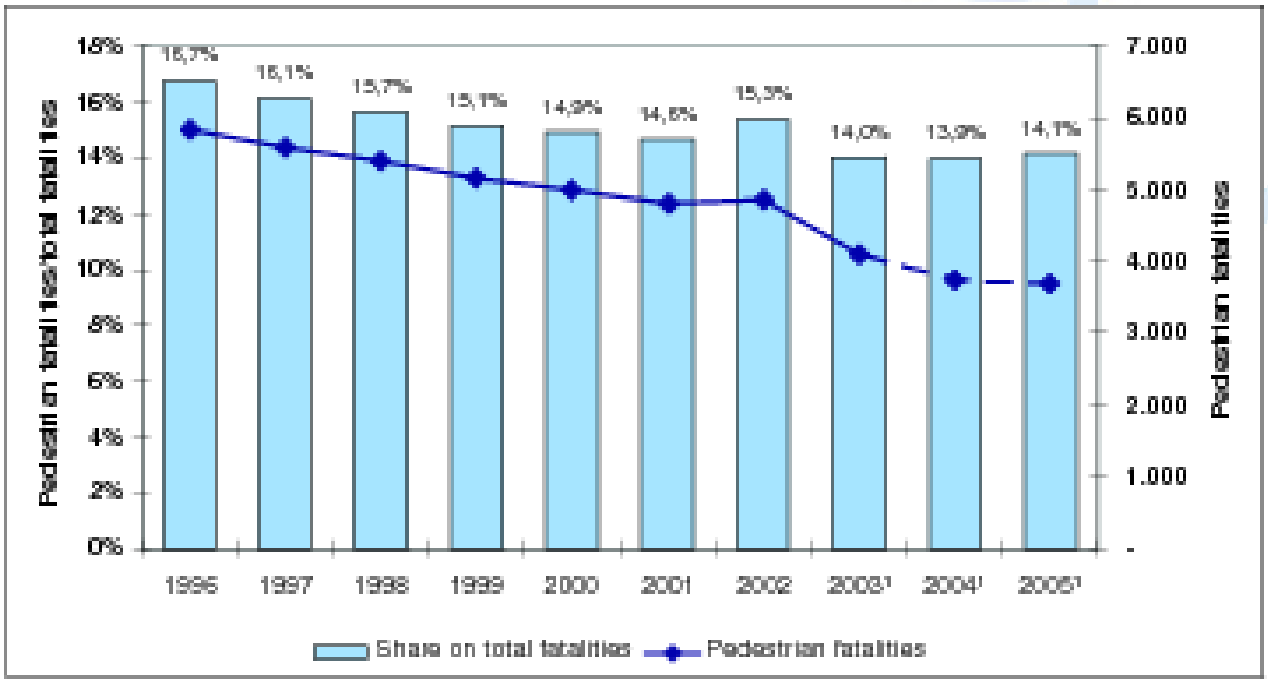
Fig. 15: Annual renewal rate of passenger cars in 2007 (Percentage of new cars among all registered passenger cars).

Source: ANFAC (Spanish Automobile Association) (2009).
*Except for: * Estimation based on EUROSTAT data for 1994-2004, ** UNECE 2004 data, *** National data.*

Annual renewal of passenger cars in EU in 2007
(Source: 2010 on the Horizon, 3rd Road Safety PIN Report, ETSC, June 2009)

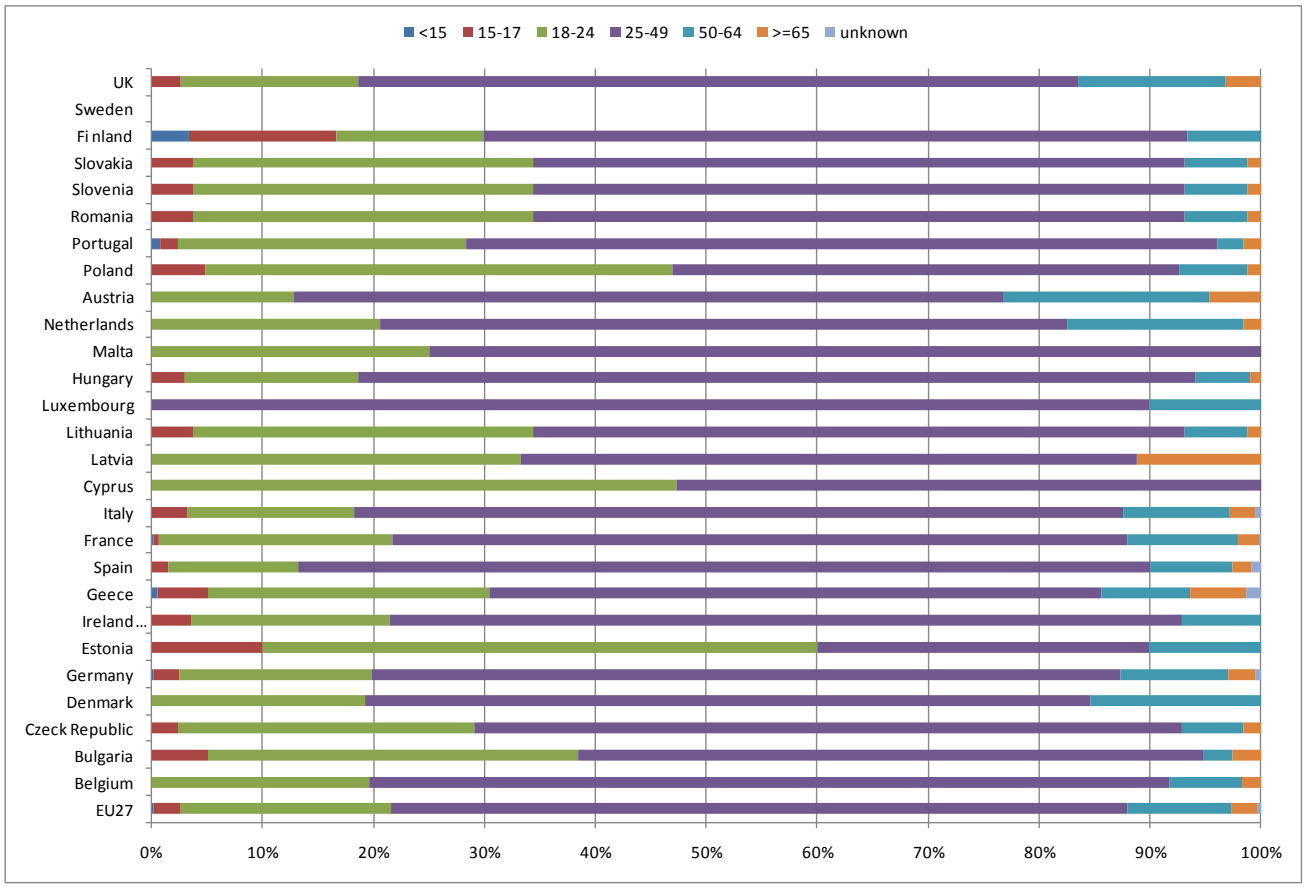
Appendix 1.10 Trend in pedestrian fatalities and share of total

Figure 1: Number of pedestrian fatalities and proportion on total fatalities in EU-14, 1996-2005[1]



Source: CARE Database / EC
Date of query: October 2007

Appendix 1.11 Share of car driver fatalities in EU countries by age

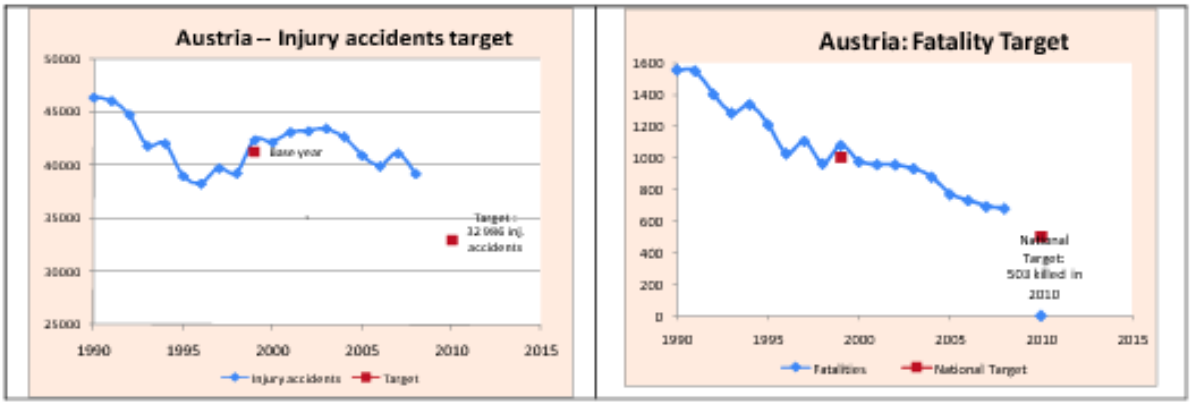


Appendix 1.12 Trends compared to road fatality target

All figures are from IRTAD Annual report 2009

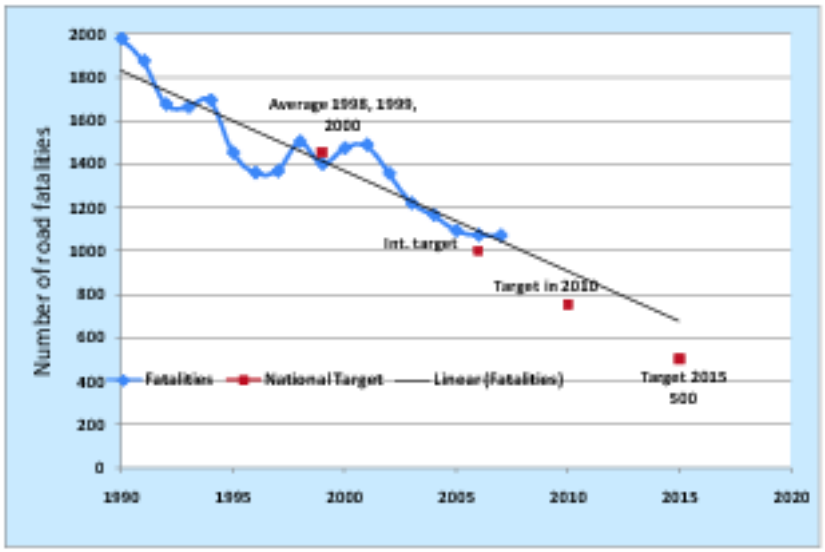
Austria

Figure 6. Trend in progress towards road fatality target



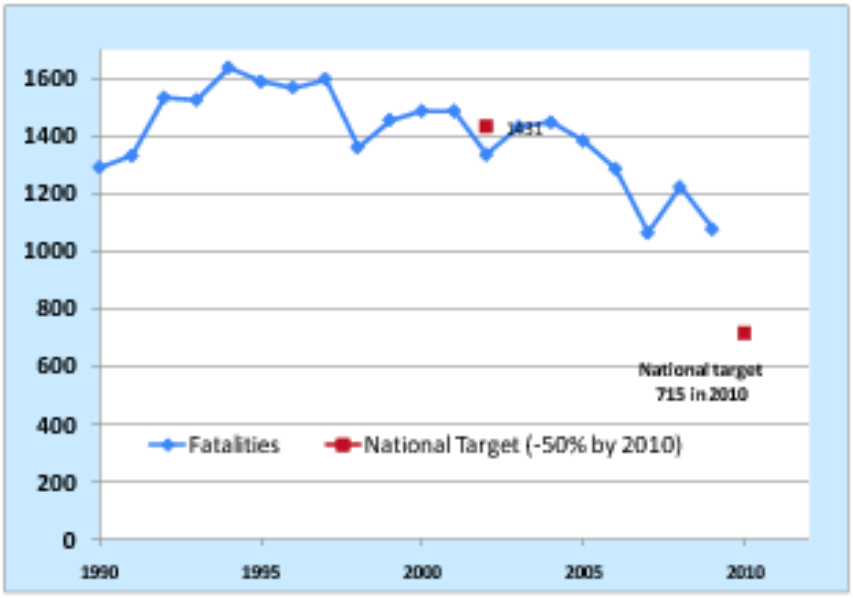
Belgium

Figure 6. Trend in progress towards road fatality target



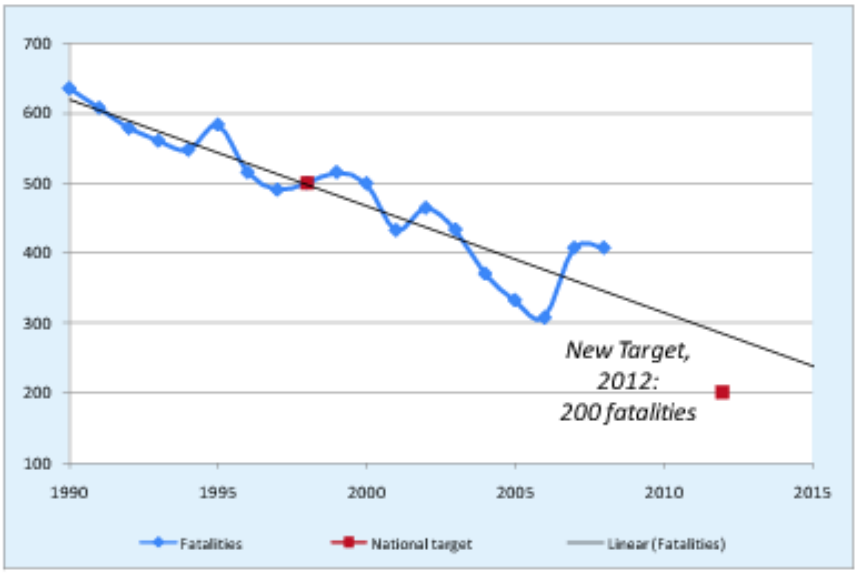
Czech Republic

Figure 5. Trend in progress towards road fatality target



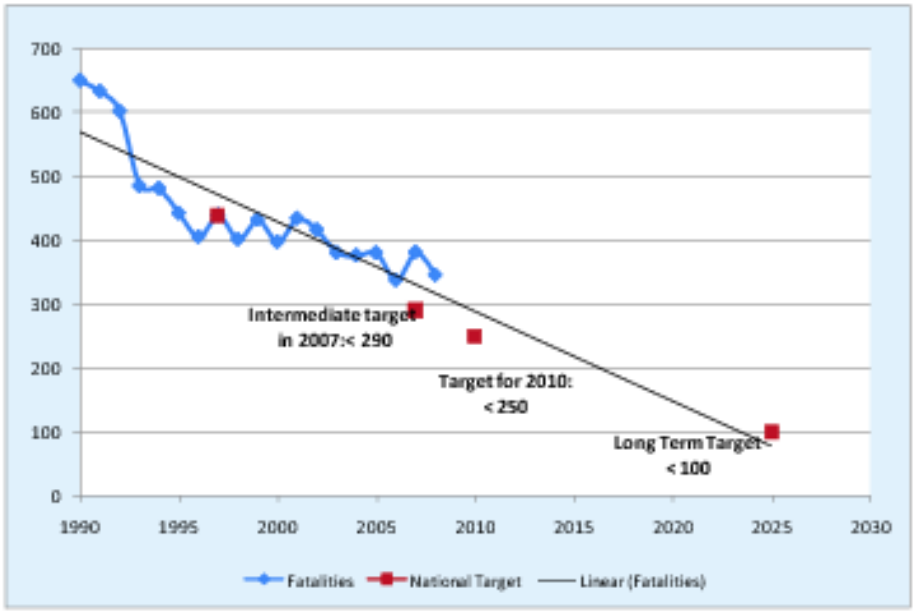
Denmark

Figure 5. Trend in progress towards road fatality target



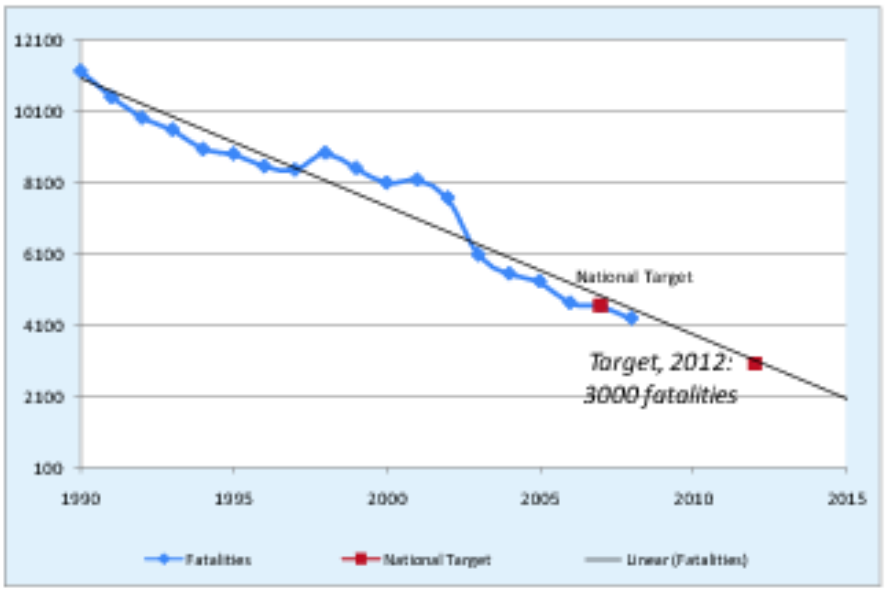
Finland

Figure 5. Trend in progress towards road fatality target



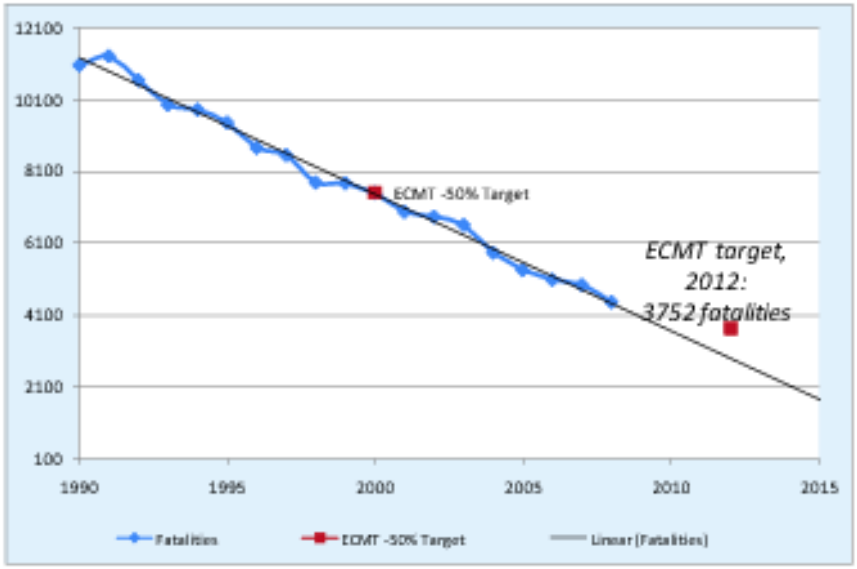
France

Figure 5. Trend in progress towards road fatality target



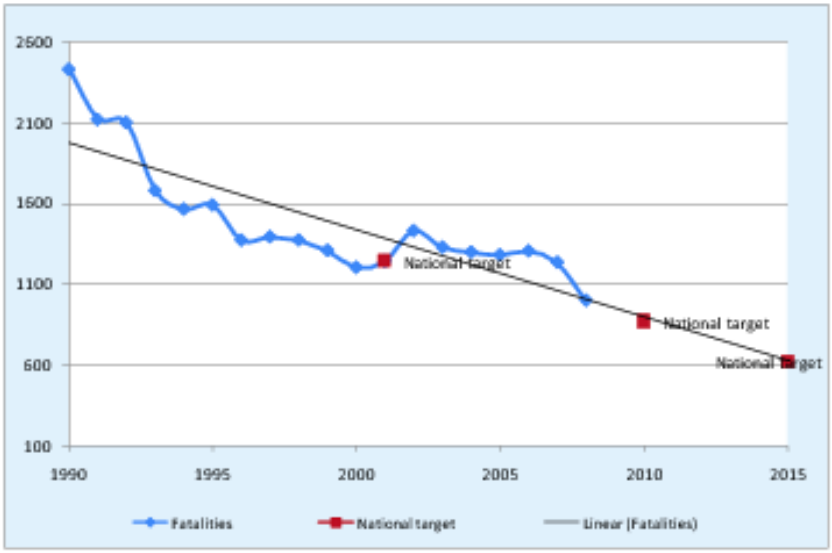
Germany

Figure 4. Trend in progress towards road safety target



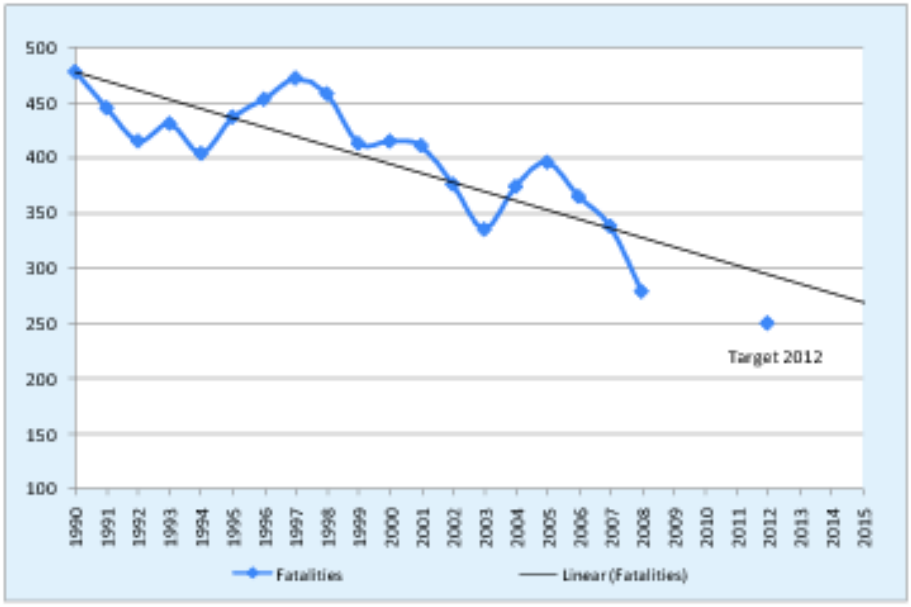
Hungary

Figure 5. Trend in progress towards road fatality target



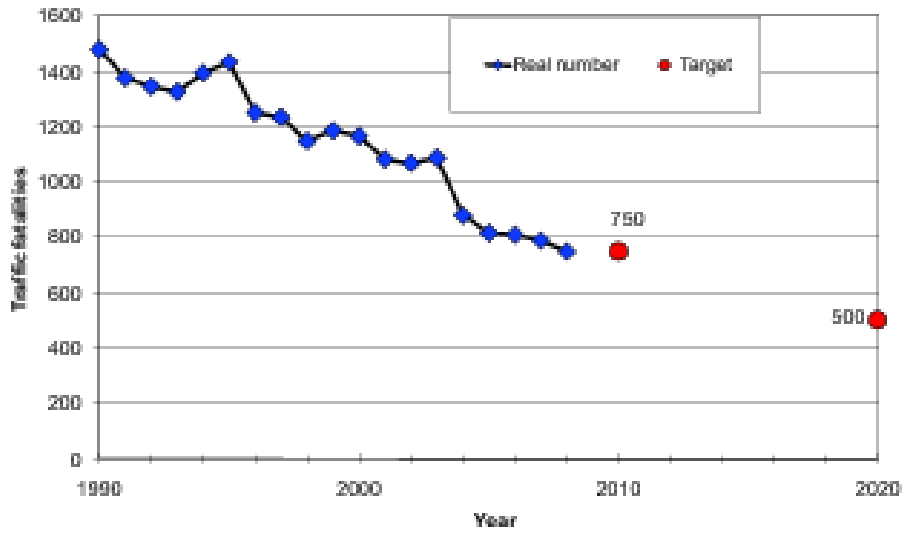
Ireland

Figure 8. Trend in progress towards road fatality target



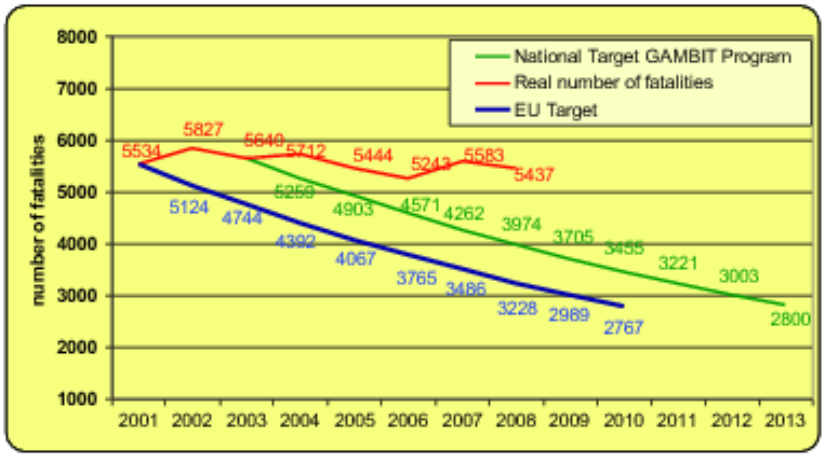
Netherlands

Figure 6. Trend in progress towards road fatality target



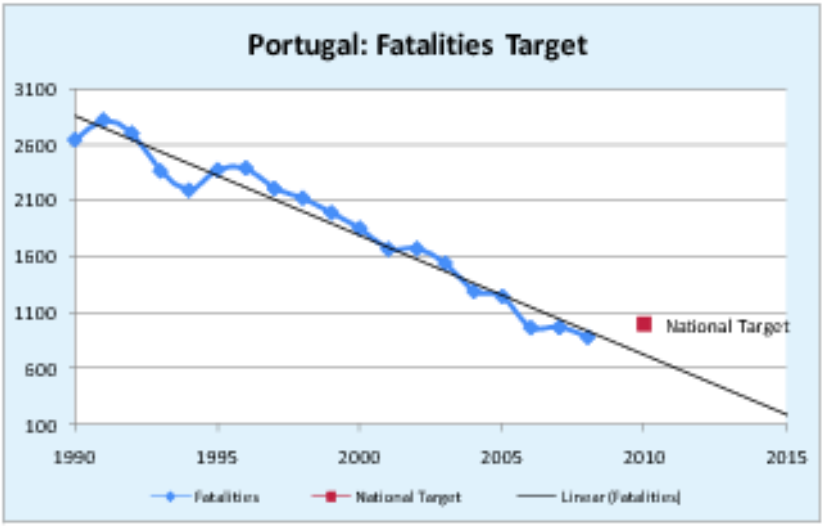
Poland

Figure 4. Trend in progress towards road fatality target



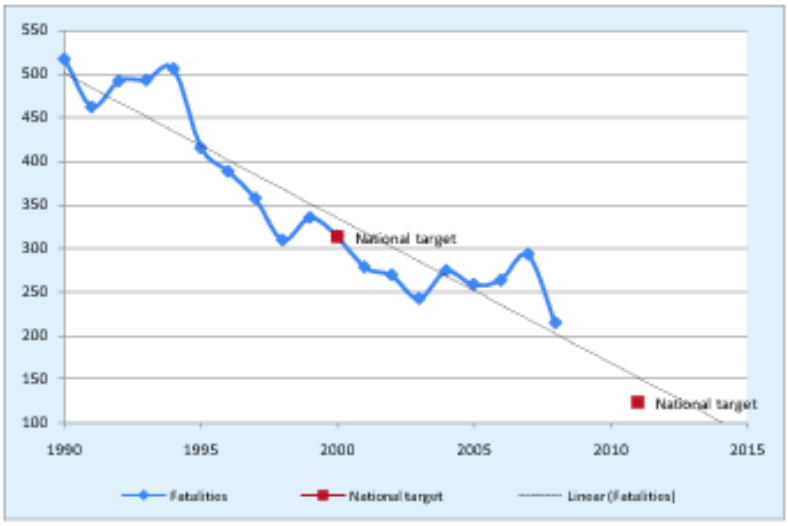
Portugal

Figure 4. Trend in progress towards road fatality target



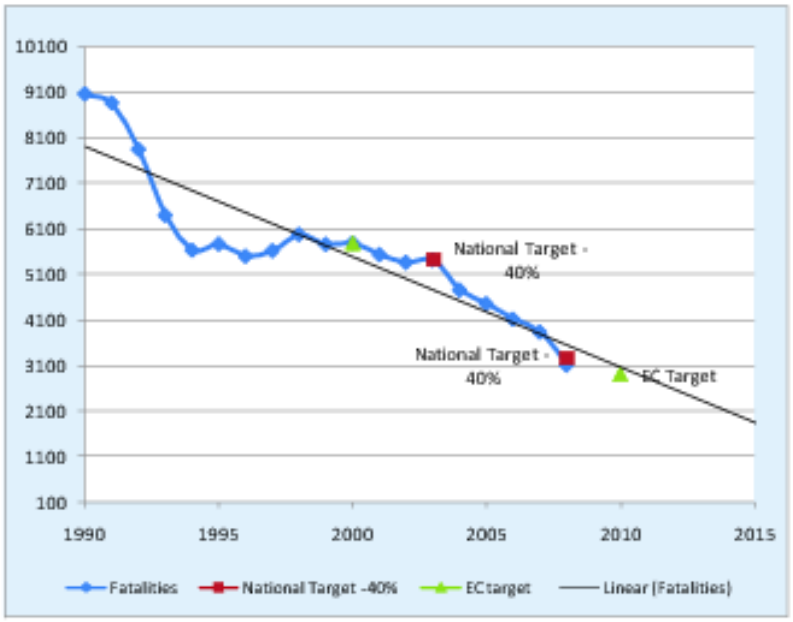
Slovenia

Figure 4. Trend in progress towards road fatality target



Spain

Figure 5. Trend in progress towards road fatality target

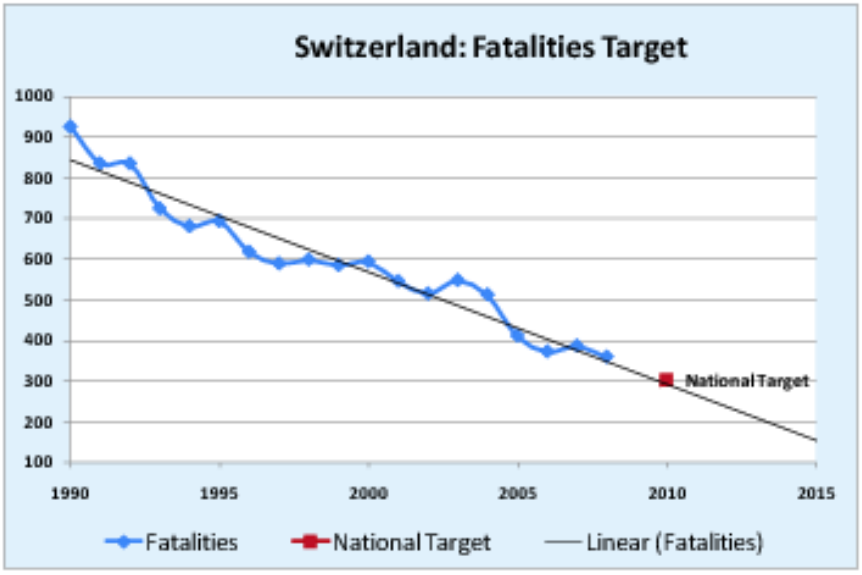


Sweden

Figure 6. Trend in progress towards road fatality target

Switzerland

Figure 6. Trend in progress towards road fatality target



Appendix 1.13 Assessment of Trauma Management

The SafetyNet[73] study ranked the countries on trauma management according to the following criteria:

- Availability of Emergency Medical Services (EMS) stations:
  - the number of EMS stations per 10,000 citizens

- Availability and composition of EMS medical staff:
  - percentage of physicians and paramedics out of the total number of EMS staff
  - the number of EMS staff per 10,000 citizens Availability and composition of EMS transportation units
  - percentage of Basic Life Support Units (BLSU), Mobile Intensive Care Units

- (MICU) and helicopters/planes out of the total number of EMS transportation units:
  - the number of EMS transportation units per 10,000 citizens
  - the number of EMS transportation units per 100 km of total road length Characteristics of the EMS response time
  - the demand for EMS response time (min)
  - percentage of EMS responses meeting the demand
  - average response time of EMS (min)

- Availability of trauma beds in permanent medical facilities
  - percentage of beds in trauma centres and trauma departments of hospitals out of the total trauma care beds
  - the total number of trauma care beds per 10,000 citizens.

The combined indicators (ranks) of the trauma management systems' performance in the countries, both received by each ranking procedure and defined as the final ones, are presented in the table overleaf.

[73] Vis, M.A. and Eksler, V. (Eds.) (2008) Road Safety Performance Indicators: Updated Country Comparisons. Deliverable D3.11a of the EU FP6 project SafetyNet

Country	Ranks A	Ranks B	Ranks A2	Ranks A1	Ranks A3	Ranks B1	Ranks B3	Final	
AT	1	1	1	1	1	1	1	1	High
DE	1	1	1	1	1	1	1	1	High
BG	2	2	2	2	2	2	2	2	Relatively high
SK	2	2	2	2	2	2	2	2	Relatively high
CZ	2	2	2	2	3	3	2	2	Relatively high
NO	2	3	2	1	3	2	3	2	Relatively high
UK	3	2	3	2	2	2	2	2	Relatively high
LT	3	2	3	2	4	2	3	3	Medium
DK	4	2	4	3	2	2	2	3	Medium
LV	2	3	2	3	3	4	4	3	Medium
BE	4	3	3	4	2	3	2	3	Medium
CY	2	4	2	3	3	4	4	3	Medium
EE	3	4	3	3	2	4	3	3	Medium
HU	3	3	3	4	4	3	3	3	Medium
MT	4	4	4	4	4	4	3	4	Relatively low
FI	4	4	4	4	4	3	4	4	Relatively low
SE	4	4	4	4	5	4	4	4	Relatively low
PL	4	4	4	5	5	4	5	4	Relatively low
EL	5	5	5	4	5	5	5	5	Low
NL	5	5	5	5	5	5	5	5	Low

Table 7.3 Combined estimates of the trauma management systems' performance in the countries considered: results of seven trials and the final estimate. Note that Portugal does not appear in the combined ranking due to a high number of missing values for the trauma management safety performance indicators.

Appendix 2 Report on Internet consultation

The summary report for the Internet consultation is provided in the following. The full report on the Internet consultation is in a separate document.

As part of the consultation process, an internet consultation was launched on 25th September 2009 to run online for eight weeks until 20th November 2009. The objective was to engage European citizens, governmental stakeholders at national, regional and local levels, business and professional sectors, in identifying the:

- Key road safety problems to be addressed by the European RSAP for the period 2011 – 2020.
- Priority actions to address the unacceptable and costly levels of road death and serious injury across the EU.

Inputs to the consultation were provided by the COWI Consortium, but the final questionnaire and scoring system was designed by the road safety unit of DG TREN, European Commission.

Replies received to the consultation

Responses and type of respondents

By the deadline 20th November 2009 a total of 496 had responded to the questionnaire. Out of these 82% were male and 18% were female. Most (54%) spoke on behalf of an organisation or a public authority while 46% responded as individuals.

Type of respondents

The respondents cited cars, bicycles or public transport as their most frequently used mode of transport. Almost 60% of the respondents were users of cars or trucks, more than 20% were vulnerable road users (motorcyclists, pedestrians, cyclists, moped users) and under 20% used public transport or other means.

Almost 30% identified themselves as private individual when asked about organisation type. Thus, some of those when responding as individuals, also belonged to an organisation. Almost 18% of the respondents were from private companies and 25% from associations/NGOs. Almost 14% of respondents were from national, regional and local governments and 10% from academic institutions. The group of "other" (5%) included research institutes, European Commission, police, international organisations, etc.

Country responses

More than 92% of the respondents lived in European Union Member States, 3% in Europe outside EU (Switzerland, Norway and Albania) and 5% outside Europe. Out of the respondents from EU 25% were from United Kingdom, 11% from Germany, 10% from Belgium, 7% from France and Italy and 6% from Austria, Spain and Sweden. There were no respondents from two EU countries - Cyprus and Malta - and three countries (Bulgaria, Estonia, and Lithuania) had only one respondent from each.

Representativeness

The results of the Internet consultation will provide indications on the opinions of different stakeholders on the main problems and potential measures for the European road safety action programme 2011-2020. However, the replies

should not be seen as representative of the EU opinion on road safety for a number of reasons: the sample size is small; 82% of respondents are male; 25% of respondents are from UK while UK accounts for 12% of inhabitants in EU, and large countries such as France and Germany only account for 18% of responses while accounting for 29% of inhabitants.

Perception of road safety

In general 76% of respondents perceived that traffic is safer now than 10 years ago and 21% thought the opposite while 3% did not know. Respondents from organisations, car users and from countries with large casualty decreases were generally more positive than the average.

Opinions were more varied on the safety of the different traffic modes and road types. In general respondents felt that traffic was safer compared to 10 years ago for car drivers and occupants, but motorcyclists, mopeds and cyclist are generally seen as less safe in traffic today. Respondents from organisations and public transport users are the only groups where the majority find safety better for cyclists. Many find pedestrians less safe than 10 years ago but there are differences in the assessment by the different groups.

The different infrastructures (motorways, rural and urban roads) were generally perceived as safer by the respondents, especially motorways.

Scope of the next European road safety action program

What are the most important road safety problems?

Respondents were divided when it came to defining the main road safety issues, however, most (78%) - both in total and by the different respondent groups - identify the numbers of death as the primary issue in road safety. But 47% also consider the level of societal impact of death and long-term injury and 45% the costs to the society as problematic. There were additional comments where many respondents cited the costs of car crashes (2% of GDP) and their impact on society and traffic as being most important.

Road users

Respondents were asked to select road safety problems linked to road users. Young drivers (63%), car drivers (31%) and powered two-wheeler users (39%) were in general identified as the main casualty problems.

The group of respondents finding traffic less safe than 10 years ago also found cyclists (26%) to be the main casualty problem together with young drivers (52%) and car drivers (48%).

In the additional comments, some respondents indicated that all the suggested groups: young (male) drivers and car users are the most numerically important problems, but that powered two-wheeler users, pedestrian, cyclists and children are the most vulnerable groups.

Impact of societal change

Regarding the impact of societal change most identified lifestyle change, as the primary problem in road safety (59%), but change in transport mode (50%) and ageing of society also played an important role (45%).

Countermeasure: user, infrastructure and vehicles

The questionnaire divided countermeasures into four fields: infrastructure, road user measures, road user enforcement measures and vehicle safety. Respondents were asked to choose two measures amongst a number of the given alternatives for each field.

Infrastructure

Among all the respondents the most important countermeasures on infrastructure were assessed to be "road classification - appropriate match between function, speed limit, design, layout" (57%), "facilities for pedestrians and cyclists" (57%), "speed management in urban areas" (49%) and "implementation of safety audit and safety inspection" (47%). Most groups gave these countermeasures high priority.

"Speed management in rural areas" was found by many groups of respondents (43% of the total) to be an important countermeasure. This includes countries with low fatality rates, respondents who generally found traffic less safe than 10 years ago, vulnerable road users, public transport use and respondents answering as individuals.

Respondents from the group using public transport and from the group of countries with low fatality rates and low reductions also found design of road sides and furniture important countermeasures. Respondents from countries with high fatality rates and vulnerable road users found "safety impact assessment of land use planning and road infrastructure" important.

Additional comments indicated that speed limits should be understandable and some suggested variable speed limits according to time and day. It was suggested that roads should generally be made better and friendlier, rural roads needed to be improved, safer crash barriers for motorcycles were needed as were better traffic markings and better facilities for pedestrians and cyclist.

Road users

Among all the respondents the most important countermeasures regarding road users (licensing, testing, training, information) were assessed to be "social marketing/ campaigns/ safety education to encourage compliance with rules on safe behaviour" (65%), "safety quality of driver licensing and testing standards" (60%) and safety quality of driver training (56%). All groups gave these countermeasures high priority.

Additional comments indicated that training drivers/riders should take responsibility for their actions and understand the human body's weakness. There was a need to increase public awareness in general through better training in schools. They also stressed the importance of starting to teach responsibility and good driving and riding behaviours from a very young age in schools. It was also suggested that re-testing of motorists should be carried out every five or ten years roads, cyclists' behaviour should become a mandatory part of the test for truck drivers and there should be theoretical and practical training for teenagers who want to use a powered two wheeler.

Enforcement

Among all the respondents the most important countermeasures on enforcement were assessed to be "combined publicity and police enforcement of important safety rules" (73%), "deterrence of drinking and driving/riding" (60%) and "en-

forcement of speed limits" (57%). All groups give these countermeasures high priority.

Additional comments indicated that punishment should be more severe, e.g. penalties for causing death by driving in line with other forms of causing death by negligence or manslaughter. It was also suggested that enforcement is improved through reintroducing police patrols, more enforcement of crash helmet usage and of eye sight testing.

Vehicle safety

Among all the respondents the most important countermeasures on vehicle safety was assessed to be "preventing crashes through better brakes, lighting, intelligent systems" (54%), "preventing injuries through better occupant protection" (47%), "improving the safety quality of vehicle standards and equipment for heavy commercial vehicles (39%) and cars" (40%). Most groups give these countermeasures on vehicle safety high priority.

The need for "improved safety quality of vehicle standards and equipment for powered two wheelers" was seen as important by respondents from countries with large decreases and by users of public transport. "Vehicle inspection" was also seen as important by respondents from the group of countries with small decreases in fatality rates.

Additional comments highlighted that the safety in cars should focus more on increasing safety for other road users, especially pedestrians and powered two wheelers.

Institutional management of road safety

The key problem part of the questionnaire is divided in three sub-questions: Institutional leader-ship and coordination, Legislation, funding and resource allocation, promotion and monitoring and evaluation, knowledge transfer, research. The respondents were asked to rate each of the given alternatives for each branch from 1 to 5 (1 the most important).

Institutional leadership and coordination

The rating was as follows: "lack of political willingness to prioritize road safety", "insufficient integration and coordination of activity" and "lack of high-level review of safety management performance" as the key problems in institutional leadership and coordination.

Respondents from countries with large fatality rates and decreases also found the "lack of definition of road safety objectives" to be an important problem.

Respondents believed in additional comments that governments hesitate about safety regulation for fear of unpopularity. Some believed that the EU could coordinate better to encourage countries to adopt regulations.

Legislation, funding and resource allocation, promotion

The respondents generally cited "limited resources dedicated to road safety", "insufficient harmonization of road safety rules and standards" and "insufficient promotion and communication on road safety" as the key problems in legislation, funding and resource allocation and promotion.

Respondents from the car using group, organisations, from countries with high fatality rates and high casualty decreases and countries with low fatality rates also found the "limited resources dedicated to road safety functions in the main governmental sectors with responsibilities" an important problem. "Inefficient funding mechanisms for road safety" were given a high rating by respondents from countries with high fatality rates and low decreases.

Additional comments stated that there was too little funding, or that money should be used better or that there should be more harmonization.

Monitoring and evaluation, knowledge transfer, research

Respondents rated the "lack of periodic, independent review of road safety performance", "lack of health sector monitoring to establish under-reporting of injuries" and "lack of harmonised definition of serious injury" as the key problems in monitoring and evaluation, knowledge transfer and research.

Respondents from countries with high fatality rates and high casualty decreases and vulnerable road users also found the "lack of data on distance travelled (vehicle kms)" to be an important problem. "Problems with crash injury classification (serious, light injuries)" were given a high rating by respondents from countries with low fatality rates and high casualty decreases.

In additional comments respondents found lack of knowledge and knowledge sharing in general, lack of an international classification of injuries, according to their seriousness, and the lack of use of hospital records problematic.

The role of the EU

Integration with other policies

Most respondents (66%) believed that the integration of road safety into other areas of EU policy has only been partially effective and 20% thought that that integration was ineffective. In particular, respondents recommended more integration in "education policy", "health policy", "environmental policy" and "research policy". Respondents from many groups also believed integration into "social policy" and "information and communication technology policy" important.

In additional comments on integration of road safety into other EU policies respondents called for improvement in EU policy. On the other hand, 73% of respondents thought that EU policies did not create obstacles to prevent effective road safety policies at national, regional and local levels.

Respondents believed in their additional comments that EU policies created obstacles for effective road safety policies at national, regional and local levels. These either represented the hope for stronger intervention at EU level with more harmonization of regulation in the EU countries or a belief that the EU should let countries decide autonomously about road safety policy.

Priority for actions in the Road Safety Action Programme

Respondents generally indicated that the priority areas of actions should be "funding effective road safety activities", "proposing a European road safety objective to 2020", "supporting road safety research" and "applying road safety standards to all roads". Many respondents also thought "legislation and recommendations where the EU has competence" an important action.

The most common additional response was the need to harmonise regulations. Others suggested setting a goal for the reduction of number of deaths and injuries, etc.

New technologies

Generally all groups of respondents (77%) believed there was a need for EU action to increase the market acceptance of new technologies, innovative and intelligent transport solutions. In particular they saw "establishing the safety effects of new technologies prior to widespread application" and "intelligent speed adaptation / speed adjust / speed alert / speed limiters" as possible fields of action.

Many respondents also found "advanced braking and handling systems in all motor vehicles (like ESC/ESP)", "collision avoidance systems", "alcolocks", "dynamic traffic management", "event data recorder", "pedestrian protected car fronts", "supporting mapping of speed limits across Europe" and "eCall" to be important EU actions on new technologies.

Additional comments suggested promotion of new technologies and focus on cost effective technologies.

Written contributions

In addition to the questionnaire approx. 50 respondents also submitted comments by mail. These comprised contributions from:

- Member States
- International Organisations including user groups, safety organisations, special interest groups and trade associations,
- Companies
- National associations
- Individual experts.

Some contributions were substantial comprising links to additional policy and position papers on a range of road safety management issues and strategies. Others comprised short statements concerning priorities for the next road safety action programme or provided further information and recommendations on specific interventions.

Many comments supported the issues identified on the Internet questionnaire such as e.g. setting accident reduction objectives and long term visions, cross border enforcement, funding, etc. Others suggest other countermeasures for 2 wheelers, centre line rumble strips, programmes for commercial drivers, etc.

Main conclusions and options for actions

Based on the results of the internet consultation and the additional written contributions, conclusions and recommendations for options for the next road safety action programme are presented, as foreseen in the preliminary work document.

Political leadership and institutional management

Many respondents to the internet consultation underlined the need for political leadership. In their written contributions, ACEM and ETSC spoke for many in seeing strengthened institutional management capacity in pursuit of a long-term shared vision and interim targets as the major necessary step in making a difference to the road safety situation in the next decade in Europe.

What results do we want to achieve?

A vision for the long term

While the opinions of stakeholders on the subject of a long term vision or goal for the future safety of the road traffic system were not specifically requested in the questionnaire, this issue was highlighted by several international organisations and companies in the additional written contributions.

Recommendation for action at EU and national level:

- *Adopt a long term shared vision for future safety of the road traffic system for the ERSAP and national road safety strategies in line with international good practice.*

Interim quantitative targets 2011-2020

The internet consultation process also highlighted the value of the current EU target and the importance of continuing to adopt further quantitative interim targets for 2011-2020 at EU and national levels. The majority view in the additional written contributions across the range of contributors involved was to target the reduction of death and serious injury.

Recommendation for action at EU and national level:

- *At EU level, set a shared interim target to reduce deaths by a challenging but achievable percentage within the period 2011 – 2020 as the focus for road safety action. Consider existing proposals and related analysis on specific targeted levels of deaths and serious injury and other objectives.*

Reducing socio-economic costs

The need to reduce unacceptable high socio-economic costs associated with road traffic crash injury was also cited as a key objective for the next road safety action programme. While estimates are available, the CEA recommended that further work is carried out to establish the different elements of crash costs at EU level.

Recommendation for action at EU and national level:

- *Establish where necessary and update annually estimates of EU and national socio-economic costs of road crashes using best practice methods.*

Leadership, integration of policies and coordination arrangements

While new institutional structures at EU level were not specifically mentioned in the internet questionnaire, the ETF and ETSC highlighted the need for the establishment of a European Road Safety Agency.

The need for shared action across sectors was highlighted. Several organisations pointed to the value of establishing road safety policies at work. This entails improvements in coordination of road safety horizontally across government between different sectors with road safety responsibilities as well as vertically between EU, national, regional and local levels was a general observation in the public consultation.

Recommendations for action at EU, national and local levels:
- *Review lead agency arrangements and capacity against good practice.*
- *Consider the establishment of a European Road Safety Agency at EU level.*
- *Review horizontal and vertical coordination arrangements and capacity across government against international best practice. Transport, health, justice and police, work, environment, industry and finance will form the key partnerships which can help to deliver road safety results. Engage business and civil society in the consultative levels of the decision-making hierarchy.*

Legislation and harmonisation

Respondents to the internet consultation questionnaire indicated that there was insufficient harmonization of road safety rules and standards. Many organisations in their additional written contributions confirmed that EU and national legislation to set minimum standards for safety but offering a high level of protection for the road network and users continues to be necessary and appropriate. A view expressed by several organisations was that interventions needed to be underpinned by research and development, systematic monitoring and evaluation, cost-benefit assessment and large-scale demonstration in the case of new technologies.

Recommendations for action at EU, national and local levels:
- *Recognise that a legislative framework for road safety continues to be essential.*
- *Expand harmonisation on road safety cover standards/ type approval, inspection, audit in the fields of infrastructure and vehicles as well as improved user standards (e.g. harmonised maximum blood alcohol limits and speed limits) where EU action can add road safety value.*
- *Carry out cost-benefit analyses of proposed legislative measures to ensure that the Commission's requirement of achieving a positive impact on road safety and public health while also improving mobility, energy, the environment and the economy.*

Funding and resource allocation

Problems of obtaining resource commensurate with the size of the road traffic injury problem are perennial for road safety and are identified as a key obstacle by stakeholders in the internet consultation. The EU was urged to fund effective road safety activity, particularly in countries of the last EU enlargement and in neighbouring countries. The EU, Member States and the insurance industry were also urged to provide financial incentives and premium discounts for the take up of demonstrably effective road safety equipment and promoting clearer incentives to safe driving.

Recommendations for action at EU and national levels
- *Review resource levels needed for new programmes.*
- *Provide financial incentives and premium discounts for the take up of demonstrably effective road safety equipment and promoting clearer incentives for safe driving.*
- *Fund twinning and demonstration projects to develop good practice road safety management capacity and to support effective RSAP measures in EU and neighbouring countries with lower levels of safety performance.*
- *Specify safety criteria in structural funds, public procurement as well as transport and TEN-T projects.*
- *Support road safety research as well as demonstration projects.*
- *Support EU umbrella NGOs and the extension of networks of NGOs active in the field of road safety.*
- *Establish any benefits for road safety on the internalisation of road crash costs and set out an EU route map for the internalisation of external road crash costs.*
- *Promote cost-benefit analysis in resource allocation, the use of 'willingness to pay' and update values.*

Promotion

Insufficient promotion and communication on road safety was rated as high as insufficient harmonisation in the responses to the internet consultation. The additional written contributions emphasised that road safety requires promotion at a high-level both inside and outside government, need to be based on good practice and that a shared vision of the future safety of the traffic system assists in promoting road safety. Sweden pointed to the crucial role of the EU in promoting the emergence of innovative in-vehicle technical solutions to tackle serious road safety problems.

Recommendations for action at EU level, national and local levels:

- *Promote a shared EU road safety vision and EU and national targets at the highest levels of Government, business and civil society.*
- *Show organisational leadership in public and private sectors by introducing in-house safe travel policies.*
- *Amend EU legislation on the promotion of clean, safe and energy-efficient road transport vehicles.*
- *At EU level, promote best practice in road safety communication policies and proven measures which reduce deaths and serious injuries in the European Road Safety Charter and the European Road Safety Observatory frameworks.*

Monitoring and evaluation

Respondents noted that the lack of harmonised specification of serious and minor injury classifications and the lack of other safety performance data in Member States and at EU level present problems for a detailed analysis of road safety outcomes.

Recommendations for action at EU level:

- *Monitor the effects of road safety targets, strategies, individual programme measures including European Road Safety Charter inspired measures and establish a high-level review team to report on progress and make further recommendations based on evaluation.*
- *Develop, promote and establish a single EU-reporting system for crash injury, exposure and other data.*
- *Adopt a standard EU definition for 'severe' and 'minor' injury and implement across databases.*
- *Ensure computerized health sector monitoring of death and serious injury in road crashes in every Member State and conduct studies to ascertain levels of under-reporting in CARE system data.*
- *Stimulate detailed in-depth investigations based on established protocols.*
- *Promote and support independent review of road safety management across the EU and elsewhere.*
- *Establish regular public opinion surveys on road safety.*

At national and local levels

- *Establish/improve quality of crash injury databases and data sharing arrangements between police, roads and health authorities and establish levels of under-reporting.*
- *Carry out annual surveys and analysis to collect key exposure data and safety performance data and establish national databases on intermediate outcome data (e.g. speed, seat belt use in normal traffic) and institutional output data (e.g. numbers of breath tests, speed checks etc.) in line with best practice to inform national strategies on speed management, increasing seat belt use, reducing drinking and driving and improving roads and vehicle fleet quality.*
- *Commission independent peer review of national road safety performance in line with ITF/OECD recommendations.*

Research, development and knowledge transfer

Many respondents and written contributions highlighted stakeholder support for continuing research and knowledge transfer which is seen as key to past successes in reducing casualties, a pre-requisite for further improvement and a

means by which Europe can contribute to be the global leader in road safety. There was also wide support for the establishing of best practice guidelines.

Recommendations for action at EU level:

- *Establish the European Road Safety Observatory (ERSO) as a permanent EU-funded structure as a source of information and knowledge for all with appropriate human and financial resource, preserving and strengthening the original aims of ERSO as an established and valuable source of knowledge and data for safety decision-making.*
- *Establish authoritative EU best practice guidelines agreed by Member States for activity across the road safety management system.*
- *Promote the development of more 'best practice' resources/ tools for implementation e.g. road safety management capacity review and target-setting tools.*
- *Support capacity building demonstration projects in countries with lower safety performance.*

At national and local level:

- *Establish capacity in-house and with external partners of road safety research and establish national research strategy.*
- *Develop and promote best practice guidelines particularly in the enforcement and engineering fields.*
- *Embark on 'peer to peer' twinning activity and professional training at decision-making and practitioner levels for knowledge transfer on effective and innovative activity.*

The scope of the intervention/countermeasure set

The internet questionnaire divided countermeasures into four fields: infrastructure, road user measures, road user enforcement measures and vehicle safety. The additional written contributions also highlighted the need to include post-impact care as a key road safety strategy to be included in the road safety action programme in line with good international practice.

Infrastructure

Principally, the problems identified by respondents centred on the need for the safety of all road users to be taken into account in road infrastructure planning and design; the need to separate dangerous mixed road use; the need for improved speed management; the setting and enforcement of appropriate speed limits and provision of crash protective roadsides which take better account of human tolerance limits.

The most important countermeasures on infrastructure in questionnaire responses were rated as road classification - appropriate match between road function, speed limit, design, layout, facilities for pedestrians and cyclists, speed management in urban areas and implementation of safety audit and safety inspection and speed management in rural areas.

In written contributions the establishment of more appropriate road hierarchies; risk mapping and performance rating and more investment for safe road design were also proposed. Other organisations also supported harmonised technical specifications for road safety engineering, mandatory safety audit for all EU-funded schemes and regulations and guidelines focused on the safety design, inspection and maintenance of road infrastructure and that the elements of the TEN-T infrastructure Directive should be promoted widely.

Recommendations for action at EU level:

- *Support the development of authoritative guidance/best practice guidelines covering a range of safety engineering issues and establish a process of obtaining agreement on EU level guidelines, e.g. land use planning, speed management, self-explaining, crash–protective roads and innovative approaches which contribute to the Safe System approach.*
- *Apply the EU Infrastructure Directive providing for safety impact assessment, safety audit and safety inspection on TEN-T roads to all roads.*
- *Expand Cross Border Green Corridor to Cross Border Green and Safe Corridor to include road safety considerations.*
- *Set minimum standards based on 4 star EuroRAP levels for the TERN.*
- *Establish road safety engineering criteria for inclusion in EU project investment.*
- *Play a role in the harmonisation of technical standards (skid resistance, barriers, markings, proven new technologies etc) to ensure minimum standards;*
- *Promote, standardise and provide for deployment of ISA (Intelligent Speed Adaptation) and other demonstrably effective technologies.*
- *Promote consumer information on the risk of specific roads particularly in countries of the last EU enlargement and in neighbouring countries.*
- *Promote better crash injury and survey data on road network risks.*
- *Fund demonstration projects and research evaluation for innovative safety engineering, promising new technologies as well as co-operative efforts between vehicle and infrastructure providers to achieve safe travel on the network.*

At national, regional and local levels:

- *When revising road functional classifications and hierarchies, ensure that an appropriate match between function, speed limit, design and layout is achieved which takes better account of non-motorised as well as motorised users.*
- *Adopt Safe System approaches to road safety engineering and periodically review national standards, guidelines and processes against international good practice.*
- *Implement 30km/h zones in residential areas to improve vulnerable road user safety.*
- *Support and join EuroRAP/iRAP and conduct EuroRAP/iRAP risk mapping and protection scores to help assess the safety quality of roads.*
- *Apply safety impact assessment, audit and inspection procedures to new road and improvement projects.*

Road users (licensing, testing, training, information)

Among all the questionnaire respondents the most important countermeasures regarding road users were assessed to be social marketing/ campaigns/ safety education to encourage compliance with rules on safe behaviour; improving the safety quality of driver licensing, testing and training standards. In the additional written contributions, the need for improvements in awareness-raising, education and training was cited by several organisations. Driver training was highlighted by several organisations.

Recommendations for EU level action:

- *Harmonise further licensing, testing and training for all motor vehicle drivers and improve the quality of the whole package based on study of best practice and research.*
- *Review age of access to different motor vehicles based on international best safety practice.*
- *Harmonise further qualifications of motor vehicle driving examiners and vehicle inspectors.*
- *Introduce graduated licensing for novice drivers and rider including accompanied driving; probationary periods (driving alone at night time, zero blood alcohol content, heavier demerit point system).*

At national level and local levels:

- *Carry out social marketing campaigns and combined enforcement and publicity to encourage compliance with*

key safety rules.
- *Introduce rehabilitation programs for offenders.*

Road users (police enforcement)

This section relates to police enforcement as opposed to in-vehicle enforcement measures which are covered in the vehicles section. Among all the respondents the most important countermeasures on enforcement were assessed to be combined publicity and police enforcement of important safety rules, deterrence of drinking and driving/riding and enforcement of speed limits. Additional comments called for penalties to be more severe, e.g. penalties for causing death by driving in line with other forms of causing death by negligence or manslaughter. It was also suggested that enforcement is improved through reintroducing police patrols, more enforcement of crash helmet usage and of eye sight testing.

In the additional written contributions there was a lot of support for an agreed EU Directive action on cross-border enforcement. The need for police enforcement on speed and drink and drug driving and lack of seat belt use was highlighted by many organisations.

A range of recommendations were made in relation to improve compliance with key safety rules and the role of the vehicle in helping to achieve this through seat belt reminders, ISA, alcolocks etc. was acknowledged.

Recommendations for EU level action:
- *Introduce the proposed Directive to harmonise cross-border enforcement*
- *Promote owner liability for automated enforcement offences.*

Vehicle safety

The internet consultation and additional written contributions process demonstrated that the potential substantial opportunities for further casualty reduction resulting from improved vehicle safety and new technologies are well-appreciated. A combination of legislative standards, safety ratings, incorporation of vehicle safety into public procurement policies underpinned by research and development and systematic monitoring and evaluation are seen as the key drivers of vehicle safety. There were many specific suggestions for actions which are summarised in the recommendations section.

Recommendations for action at EU level:

- *Amend current EU legislation on the promotion of clean, safe and energy-efficient road transport vehicles.*
- *Study the road safety value of a system of continuous compliance to be installed and/or a system for providing technical information for every vehicle*
- *Develop and propose standardized test methods for car to car compatibility; truck to car compatibility and improved methods for front, side and rear impacts.*
- *Legislate at EU level for whole vehicle type approval for powered two wheelers such as effective anti-tampering devices, the fitment of front number plates to aid speed enforcement a mandatory ABS for all two wheeled motor vehicles.*
- *Legislate for a PTW roadworthiness test.*
- *Remove the exemption for use of seatbelts by taxi drivers.*
- *Extend current legislation on seat belt reminders to include fitment in rear seats as well as front seats.*
- *Require the fitment of alcolocks in heavy goods vehicles and public transport vehicles and promote their use.*
- *Promote effective technologies such as ISA, alcolocks, seat belt reminders in procurement policies to encourage consumer uptake.*
- *Provide consumer information on the comparative safety of vehicles to encourage rapid changes to vehicle design before 2020.*
- *Provide a route map for the implementation of Intelligent Speed Adaptation and Event Data Recorder systems.*
- *Develop safety assessment procedures for intelligent systems, human machine interface (HMI) evaluations, identification of systems with greatest casualty potential.*
- *Develop and implement a systematic programme of evaluation of EU legislation and vehicle technologies including cost-benefit analyses.*
- *Increase focus on the needs of vulnerable road users in new vehicle safety technologies including pedestrian detection devices, motorcycle design and equipment (e.g. anti-lock braking).*
- *Carry out research into the safety aspects of electric vehicles.*

At national and local levels:

- *Engage fully in international legislative development work.*
- *Carry out national research and monitoring of vehicle safety measures.*
- *Support and join the European New Car Assessment Programme.*
- *Encourage financial incentives for the use of protective equipment.*
- *Encourage national car industry to fast track key safety measures.*

Post-impact care

While the internet consultation did not seek opinions concerning problems and priorities, the quality of the emergency medical system can have an important bearing on the survivability of crashes and the prevention of disability and this was mentioned in written contributions.

Recommendations for EU, national and local level actions:

- *Acknowledge that the quality of the emergency medical system is a key to achieving a safe traffic system.*
- *Review the potential contribution of improved emergency medical response to targets and strategies.*
- *Measure emergency medical response times between the crash scene and arrival at a medical centre against international best practice.*
- *Promote first responder schemes and in-service training for professional and commercial drivers.*
- *Promote eCall.*

Appendix 2a List of additional contributors in writing

Member States
French government authorities and the Direction Général de la Police Nationale-France
German Working Group (Federal Ministry of Transport, Building and Urban Development (BMVBS) and Conference of German Lawyers)
Ministry of Enterprise, Energy and Communications, Sweden
Ministry of Science and Innovation, Spain
Ministry of Transport and Communications, Norway
Permanent Representation of Belgium to the European Union
Scottish Government: Transport Directorate: Bus, Road Safety and Local Roads Policy Division

International Organisations: NGOs, Trade Associations
AGE - European Elderly Platform
CEA - European Insurance and Reinsurance Federation
CLECAT - The European Voice of Freight Logistics and Customs Representatives
European Automotive Research Partners Association aisbl (EARPA)
EUROCITIES (network of major European cities)
European Federation of National Associations and International Manufacturers of Contact Lens Products (EUROMCONTACT)
European Federation of the Contact Lens Industry (EFCLIN)
National Associations of Spectacle and Frame Manufacturers (EUROM I)
European Council of Optometry and Optics (ECOO)
European Cyclists' Federation (ECF)
European Federation of Road Traffic Victims (FEVR)
European Federation for Transport and Environment (T&E)
European Level Crossing Forum (ELCF)
European Motorcycle Industry (ACEM)
European Road Assessment Programme (EuroRAP)
European Road Transport Research Advisory Council (ERTRAC)
European Road Research Center (FEHRL)
European Transport Safety Council (ETSC)
European Transport Workers' Federation (ETF)
European Union Road Federation (ERF)
FIA Eurocouncil
International Road Union (IRU)
Joint Optical Committee on European Union (JOCEU)
Mobility for Prosperity in Europe (MPE)
VERONICA I & II Projects
TYROSAFE Project - Tyre and Road Surface Optimisation for Skid Resistance and Further Effects

Companies
Bosch
DEKRA eV
Deutsche Post DHL (DP DHL)
Honda Motor Europe Ltd.
Michelin
Norauto Groupe
P.A.U. Education
Philips Technologie GmbH
Rail Safety and Standard Board (RSSB) (GB)
SINDAR
Volkmann and Rossbach Gmbh & Co. KG
Volvo

National Associations
Allgemeiner Deutsche Automobil Club (ADAC)
Institut Belge pour la Sécurité Routière, Belgium. The Belgian Road Safety Institute (IBSR)
Cyclists Touring Club (CTC), Yorkshire and Humber Region, UK
German Insurers Accident Research (GDV)
Institution of Engineering and Technology (IET, UK)
The Italian Association of Tolled Motorways and Tunnels Operators (AISCAT)
National Council of Automobile Professions (France)
Sicurezza e Ambienta spa, Italy
Spanish Road Association
Swedish Motorcyclists Association (SMC)

Verband der Technischen Überwachungs Vereine (VdTÜV), (Association of the technical inspection organisations)

Individual experts

Dr. Jesús Monclús - invited expert: to European Parliament Committee on Transport and Tourism's Mini-hearing on road safety (2006)

Appendix 3 Reports on thematic workshops

The summary reports for each of the thematic workshops are included in the following appendices. The full reports from the thematic workshops are in separate documents.

Appendix 3.1 Report on thematic workshop - Vulnerable road users

The workshop on the road safety of vulnerable and unprotected users was held on July 15, 2009 at the European Commission, in Rue de Mot 24, B-1040 Brussels. The workshop was chaired by Joël Valmain, who would be leaving the Commission at the end of August to return to road safety in the French Ministry and Cristina Marolda, who would take over his responsibilities regarding this issue within the road safety unit.

Preparation of the next road safety action programme - 2011-2020

This was the first of six workshops to be arranged in coming months to create input for the preparation of the next European Road Safety Action Programme for the period 2011-2020. Carla Hess of DG TREN's road safety unit explained that the Programme was being prepared with the close cooperation and coordination of other Commission Directorate Generales by means of an inter-service group. Road safety has multi-sectoral aspects and it is important to take other policy fields into account such as health, environment, social policy etc. The COWI Consortium was providing technical assistance to DG TREN's Road Safety Unit in the development of the next programme. Furthermore, an impact assessment of the effects of the current road safety action programme was also being undertaken by a second organisation. An internet consultation over an eight week period would be launched shortly and a stakeholder conference would take place at the beginning of December.

Workshop objectives

The objectives of the workshop were to discuss who we mean by vulnerable and unprotected road users and whether or not further definition would be helpful for future road safety work; to consider a framework for addressing vulnerable and unprotected users' problems and related intervention; to identify the key road safety problems involving these users and the interventions which are likely to reduce fatalities and serious injuries and, finally, to identify priority actions at EU, national, regional and local level which provide the best opportunities to achieve these reductions and which can be included in the next EU Road Safety Action Programme 2011-2020.

Around 30 delegates participated in the workshop representing a range of user groups and policymakers. A list of participants is enclosed in Annex 1. A background document had been prepared and circulated by the COWI Consortium.

Presentations

Three presentations were made, and each is briefly summarised below.

Joël Valmain, DG TREN

Worrying upward trend in motorcycle deaths.

When discussing road safety Joël Valmain emphasised the need for an inclusive discussion of all concerned governments and a broad group of stakeholders. Fatality trends highlight the importance of focus on this issue, not least for motorcyclists, where the numbers of deaths are increasing in line with increasing use, particularly in Europe's largest cities.

Do we need a definition for vulnerable and unprotected road users?

Defining vulnerable users as a group is clearly a challenge. Normally, we would refer to unprotected users as users outside the vehicle, but there are also other definitions e.g. those which include user groups such as older road users – whether in a car, or as pedestrians or cyclists.

Multi-sectoral road safety intervention needed to address the vehicle, infrastructure as well as the behaviour of users. Joël Valmain emphasised that vulnerable users have both rights and obligations. Even vulnerable users must take responsibility for following the rules to protect both themselves and the others.

New EU driver and rider licensing requirements

Joël Valmain summarised the requirements of the new driving licence Directive which was adopted on 20 December 2006, coming into force 19 January 2013 which would introduce:

- Anti fraud measures: credit card size, administrative validity 10 years only (up to 15 years possible), one licence only for each driver, optional microchip.
- harmonization of the periodicity of medical checks for professional drivers (5 years)
- Minimum requirements for the training of examiners
- Better harmonization of categories e.g. progressive access to powered two wheelers.

He also noted a new project which had identified the elements of a model European initial rider training programme and how the model might be used in different social and economic circumstances and the potential of e-Coaching (e-Learning).

Jeanne Breen, COWI Consortium – Jeanne Breen Consulting

Road traffic injury is a lead cause of death and hospital admission for EU citizens under 45.

Jeanne Breen noted that road traffic injury was the leading cause of death and hospital admission for EU citizens under 45 years. Around 49% of killed are pedestrians, cyclists, PTW users, older drivers.

Countries and regions have become progressively more ambitious in the results they want to achieve and four phases of evolution could be identified: Phase 1 – Focus on the road user, Phase 2 – Focus on systemic intervention – the Haddon Matrix, Phase 3 targeted national programmes and the current Phase 4 – the *Safe System* goal and approach incorporating best practice from Phase 3.

A Safe System framework to address vulnerabilities of users?

Safe System challenges the belief that death and long- term injury is as an acceptable side-effect of mobility and access; asserts that road death and long-term injury is predictable and preventable, based on what we know now; requires, in addition, interim quantitative targets to reduce death and serious injury and throws a spotlight on well-established safety design principles and designer, operator and user accountability and responsibility.

This approach better addresses vulnerable road user problems and safety outcomes in general for the EU and its neighbours and provided a template and recommended framework for system-wide action, integration and coordination. A solid foundation of institutional management arrangements was needed to

produce multi-sectoral, system-wide interventions to achieve road safety results.

Véronique Feypell de La Beaumelle, OECD

The management of vehicle speed is a priority issue for improving vulnerable road safety.

Véronique Feypell presented recent work of the OECD and ITF concerning the safety of vulnerable users. She emphasised the importance and implications of a *Safe System* approach in highlighting the human body's tolerance to physical force and the consequences for vulnerable users. Speed management is key for the improvement of road safety: a pedestrian has only a small chance of surviving a collision speed at speeds exceeding 30 km/h.

Road types combined with allowed road users	Safe Speed (km/h)
Roads with possible conflicts between cars and unprotected users	30
Intersections with possible side-on conflicts between cars	50
Roads with possible frontal conflicts between cars	70
Roads with no likelihood of frontal or side-on conflicts between road users	≥100

Pedestrians and cyclists, children and elderly road users

Children and the elderly are particularly vulnerable user groups. In many countries, road-related crashes are the primary cause of death of children under fifteen years. The OECD has carried out the projects *Keeping Children Safe in Traffic* and *Ageing and Transport: Mobility Needs and Safety Issues*, the key findings of which were:

A road environment that recognises children's capabilities and limitations.

- The need to improve the safety of children, while ensuring their mobility and encouraging children to develop into safe, active and independent road users.
- Children under nine years cannot be expected to comprehend aspects of the built environment and react to stimuli in the same ways of adults.
- A holistic approach is needed for road safety including i.e. land use planning, safe infrastructure, speed reduction, vehicle design (60% pedestrian fatalities are hit by the fronts of car), safety equipment, education and training.

25% of the population will be > 65 years in 2030 and the > 80 year age-group will have tripled by 2050.

- Demographic changes leading to an aging population also pose a challenge for road safety and providing ongoing, safe mobility is a priority. For example, there is an over representation of fatalities among pedestrians over 65 years, i.e. due to greater fragility and slower mobility. Typical crashes occur when crossing the road in daylight with good whether conditions and in the vicinity of their homes. Special considerations should be given to infrastructure in order to adapt it to the needs of elderly pedestrians. Moreover improvement and adaptation of public transport is valuable. As for children it was important to keep and encourage more mobility as a priority for older users and adopt a holistic multi-sectoral approach to intervention.

Minister Navarsete: « Motorcycling and Vision Zero are not incompatible »

The Lillehammer workshop, June 2008 brought together researchers, policy makers, industry, motorcyclists. The safety of motorcyclists was a large and growing problem and motorcyclist deaths were increasing significantly compared with other road users. Key factors contributing to this were judged to be:

- Perception errors from car drivers and motorcyclists and decision failures of motorcyclists
- Speeding
- Infrastructure
- Lack of experience and inappropriate training

In order to influence current trends several measures were needed such as continued dialogue and co-operation between key stakeholders, transport and infrastructure that includes motorcycles in policy and management decisions as well as research and evaluation towards evidence-based countermeasures.

Key issues discussed and general conclusions

The challenge ahead

The challenge ahead is serious. Fatalities and injuries among vulnerable and unprotected road users are significant and in some European countries are still increasing. There is a need to implement current knowledge and identify future solutions to reduce exposure to the risk of death and serious injury, to prevent serious and fatal crashes; to mitigate the severity of injury when they occur and to reduce the consequences of injury.

Definitions and data availability

Definitions

There is no common definition of key terms relating to vulnerable road user safety. People belong to several user groups, as pedestrians, cyclists or car drivers. A range of approaches for defining vulnerable users was discussed at the workshop e.g. the definition proposed by the European Parliament in its amendment of the directive for ITS for vulnerable road users. A more scientific approach was suggested which would classify road users into groups according to general human tolerance to physical force of the given modality (e.g. users that cannot survive a crash at a collision speed of 30 are vulnerable). Another option discussed was simply to continue to classify individual user groups (pedestrians, cyclists etc.) rather than attempt a definition of vulnerable users.

While no one definition was agreed, there was unanimity about the need for common definitions of types of injury – the urgent one being ‘serious injury’ - in order to improve comparison of data among Member States. It was important to be clear which groups were being included when the term ‘vulnerable road user’ is used.

Exposure data, relative vs. absolute statistics.

Exposure data plays an important role in defining the risk of different road user groups and there was a need for more survey data to be collected across the EU.

Another key issue related to data emphasised several times during the workshop was the usefulness of information derived from relative and absolute data. For example, it was highlighted that the number of cyclist fatalities in the Netherlands is high in absolute terms compared to other Member States, however,

	when comparing these data to the estimated total number of cyclists, the relative fatality rate in the Netherlands is rather low. At the same time and from a public health point of view, the absolute numbers show that the Netherlands has a serious road traffic injury problem related to cycling, despite the health benefits derived from physical exercise associated with this mode.
Changes in user patterns	Emerging road safety problems e.g. motorized scooters and the vulnerability of an ageing population needed to be taken into account in future road safety policies.
	Result-focused approach towards a Safe System
Safe System and the focus on achieving results.	The need for a results-focused approach was highlighted by several participants. There was general support for a *Safe System* goal and framework supported by interim quantitative targets to meet the challenge of improving the road safety of vulnerable and unprotected users. It was acknowledged, however, that the *Safe System* goal would prove more challenging in resolving powered two-wheeler road safety problems. The EU has a leadership role to play in advancing a *Safe System* approach. This would require an integrated approach on the part of different policy areas such as transport, infrastructure, the vehicle sector, justice, health and education, as well as a range of different multi-sectoral system-wide intervention. Key issues discussed at the workshop were:
High-level championing	The need for political leadership and championing at a high-level was highlighted. Substantial reductions in casualties had, for example, been achieved in France due to the high-level promotion of enforcement and publicity.
Different levels of governance	In order to achieve tangible results in improvement of road safety, actions must be coordinated and integrated across different levels of governance at EU, national, regional and local levels. While actions at these levels will differ, they must be complementary in order to optimize effort and resource.
Importance of implementing what is known to be effective, increasing knowledge and transferring knowledge.	Research was emphasised as an important element. Increased research in road safety issues was key to further knowledge about causes, effects and remedies and how to achieve results. However, increased research in itself was not enough, there was a need for better use and wider implementation of research results to use and benefit from the knowledge generated to date. At the EU level it is important to create a cadre of professional support for road safety and to support training and knowledge transfer, development of new tools to build capacity for road safety management; best practice guidelines, surveys and databases, as well as providing funding to roll out effective road safety programmes and demonstration projects at national level.
	Key safety design principles
Speed management	The key role of speed management was emphasised several times during the discussions as a key factor in road safety, and this should have been highlighted even more than was outlined in the initial background paper for the workshop.

The EU should promote 30km/h limits in residential areas and a range of other actions related to speed management.

Separation of dangerous mixed use

The importance of separation wherever possible of dangerous mixed traffic at speeds above human tolerance thresholds was also highlighted. Transport route planning was emphasised as a key element in improving road safety.

Crash protection

Crash protective roadsides and aspects of vehicle design which better reflects human tolerance thresholds were needed and EU standards should be developed wherever necessary. These could be occupant restraints and crash protection which take better account of women and older people. EU front and side impact protection standards need updating with EEVC proposal. EU pedestrian protection proposal is only a start. There's much to improve further in these and other areas of crash protection.

Planning, design, and operation of road network

Network planning and infrastructure countermeasures to create a safer system, for vulnerable and unprotected road users were much discussed taking into account the safety design principles highlighted above.

The elements of the TEN-T Directive – safety impact assessment, safety audit, safety inspection needed to be promoted more widely by the EU for the rest of the road network. The need to access EU funding for safety engineering development and demonstration projects was highlighted. A range of best practice guidelines was needed.

Vehicles and safety equipment

Improvements in vehicle design and safety equipment were also noted e.g. under-run protection on trucks; improved pedestrian and other vulnerable user protection in EU car design and the importance of the recent EuroNCAP changes in star ratings; an EU standard for motorcycle crash helmets and an EU safety rating system for crash helmets for powered two wheelers was mentioned. The importance of power-to-weight ratio in power two wheeler engine performance and anti-tampering devices was noted as was the fact that a new legislative framework was being established for advanced braking systems. There was support for the use of Intelligent Speed Adaptation in urban environments and for the promotion of user conspicuity through use of lights and retro-reflective clothing. The introduction of daytime running lights on motor vehicles needed to be monitored.

Enforcement

The importance of enforcing speed limits was emphasised as well as the need to remove loopholes with regard to automatic speed enforcement practices which inhibit the apprehension of speeding motorcyclists. The importance of red light cameras was also highlighted.

Emergency medical system response

Some brief discussion involved first aid training, the need to measure and reduce emergency medical response times and the need for the implementation of eCall.

Training

For all target groups training could contribute to increase awareness and improve abilities to comply with rules and requirements for different user groups. However, it was emphasised that despite belief in the value of training, training was just one of many measures and without evidence, to date, of an impact on crash and injury reduction. The type of training was also discussed, as was the need to evaluate potential impacts in the research programme. The need for training and re-training for older powered two wheeler riders and for the use of new technologies was highlighted. Concern was raised regarding the use of e-learning and it was emphasised that this is just one of many forms of training and could not constitute a stand-alone system.

Appendix 3.2 Report on thematic workshop - Vehicle technologies

The workshop on vehicle safety management and technology was held on September 3, 2009 at the European Commission, in Rue de Mot 24, B-1040 Brussels. This was the second of six workshops to be arranged in the coming months, to create input for the preparation of the next European Road Safety Action Programme for the period 2011-2020. The workshop was chaired by Walter Nissler. The COWI Consortium is providing technical assistance to DG TREN's Road Safety Unit in the development of the next programme.

Preparation of the next road safety action programme - 2011-2020

The workshop was effective in bringing a wide range of stakeholders and experts together and promoted several very active discussions on further developments in vehicle safety. The group was able to include the views both of those who took a pragmatic shorter term view and others who saw connection with other EU level initiatives such as eSafety, Cars21, ERTRAC and EARPA. Roadmaps.

The workshop addressed two specific issues concerning continuous compliance with safety requirements and a vehicle information platform as well as the much broader issues concerning the further development of vehicle safety requirements over the next decade. Six technical presentations were made

Introduction to the workshop, background to vehicle safety, workshop aims and outputs	Mr Walter Nissler, DG-TREN
How to ensure continuous compliance with vehicle safety requirements	Mr Camille Gonderinger CITA
Establishing a vehicle information platform	Mr Walter Nissler, DG-TREN
Future directions in vehicle safety	Dr Dominique Cesari EEVC
Intelligent safety technologies - opportunities and constraints	Dr Renzo Cicillioni ACEA
Ensuring technologies have real safety impact	Dr Anders Lie EuroNCAP

There was a general response that the broader issues of vehicle safety and a vision of the cars of 2020 were very substantial and deserved more consideration than was possible within an afternoon session. A second theme concerned the need for systematic evaluation methods of existing and proposed policies together with developed cost-efficiency evaluations and it was felt the existing methods were not adequate at EU level due to a lack of data and insufficient methodologies.

Based on the discussions at the workshop a number of actions were identified. These actions are listed below:

Continuous compliance	• Create basic data using in-depth investigations to define the relevance of inspection to road safety. • Develop procedure to identify technical performance data for individual vehicles. • Include Motor-cycles and powered two-wheelers in vehicle inspections. • Develop methods to inspect electronic systems (presence and efficiency of system) for safety – improve availability of OBD (on board data). • Review inspection protocols in relation to higher speed conditions relating to more severe collisions. • Review technical inspection intervals
Vehicle information platform	• Continue development of Vehicle Information platform on grounds of administrative efficiency. - Clarify issues of data ownership, reliability, access. - Implement technology database.
Future direction in vehicle technology	• Base future road safety on safe system approach. • Develop an integrated approach to vehicle safety, linking preventive, active and passive safety; cooperative systems for drivers, passengers and vulnerable road users. • Implement an EC Task force to focus Commission work on new vehicle safety technologies in order to identify the most effective casualty reduction systems. • Priority actions for secondary safety identified by research are: standardised test method for car to car compatibility; truck to car compatibility and improved methods for front, side and rear impacts. • Priority actions for primary safety identified by research are: implementation of Intelligent Speed Adaptation systems, development of assessment procedures for intelligent systems, HMI evaluations, identification of systems with greatest casualty savings. • Provide further support to EuroNCAP in order to encourage rapid changes to vehicle design to be implemented before 2020. • Improve safety design tools. • Implement a systematic programme of evaluation of technologies before and after use on road including FOTs in order to establish a sound evidence base. • Implement a systematic programme of evaluation of EU legislation (e.g. pedestrian) before and after implementation to support the evidence base. • Need to improve technology e.g. sensing and communication technology between vehicles and between vehicle and infrastructure. • Promote effective technologies to encourage uptake by the buying public. • Ensure road safety agenda is not overwhelmed by green agenda. • Training and information for emergency rescue workers on vehicle technology. • Increase focus on motor cycles and motorcyclists, e.g. ABS (in pipeline). • Collect data about human factors, how are the technologies being used? • Implement systematic accident investigation across Europe. • Add pedestrian detection as a priority development issue. • Conduct a systematic review of safety issues related to future vehicle propulsion systems (hybrid, electric, plug-in electric and fuel cell) including an assessment of the broader regulatory needs. A specific Commission task

force should be considered to receive the results of this review and to plan further actions.

Appendix 3.3 Report on thematic workshop - Internalisation

The workshop on Road Safety Economics: Internalising External Costs; Promoting Economic Incentives, Building cases for Investment was held on September 7, 2009 at the European Commission, in Rue de Mot 24, B-1040 Brussels. This was the third of six workshops to create input for the preparation of the next European Road Safety Action Programme for the period 2011-2020. The workshop was chaired by Maria-Cristina Marolda of the DG TREN Road Safety Unit.

Preparation of the next road safety action programme - 2011-2020

The COWI Consortium is providing technical assistance to DG TREN's Road Safety Unit in the development of the next programme. The workshop was effective in bringing a range of stakeholders and experts together and promoted several very active discussions on further developments in road safety economics.

The workshop addressed two specific issues concerning internalisation and other policy options including e.g. policy trends and key concepts of internalisation. Four technical presentations were made:

Policy trends in EU traffic safety policies	Cristina Marolda, DG TREN
Key concepts of internalisation and safety taxation	Karsten Sten Pedersen, COWI
Overview of present use of traffic safety measures in EU (with focus on different types of internalisation, incl. non-tax measures)	Attila Eordogh, TREN/E/1
State of the art of internalisation of accident costs	Karsten Sten Pedersen, COWI

This was followed up by discussions on internalisation issues such as e.g. value of life and internalisation; will internalisation reduce accidents the way we want; and internalisation - by taxes or by regulation?

Other discussions were on policy options including e.g. confidence or control? (the French case), risk behaviour and the issue of insurance premiums, and other policy options inspired by the internalisation idea (driving licence requirements, tax exemptions, etc.).

Conclusions

Based on the discussions of the day the following conclusions were made:

- The socio-economic costs of road accidents place a heavy burden on society and need to be reduced substantially
- There is a need to better understand the different elements of the social cost, especially the external cost of road crashes
- The current IMPACT handbook is a good starting point today but will need to be further enhanced

- The willingness to pay methodology was accepted as the best approach for establishing the indirect costs of road crashes
- Assessment of external costs/tools is necessary for effective cost benefit analysis work and to allow a business case to be made for road safety investments
- The role of internalisation of external costs of road crashes is accepted as a good principle, but is not well understood in terms of its potential effectiveness in improving road safety
- Other financial instruments are likely to have potential to play a greater role in improving road safety. One example is tax reductions on proven advanced technological equipments and safety of vehicles

Actions

Based on the discussions at the workshop the following key actions were identified:

- The Action Programme should contain a Road Map towards internalisation of externalities related to road safety
- A recommended approach on how to assess external costs, starting from the baseline drawn by the IMPACT Handbook
- Fund activities to allow updating of the necessary data for reliable CBA
- Carry out demonstration projects to assess the impact of the internalisation on road safety costs
- More research on external costs to allow categorisation and updating of values (e.g. for serious and long term injury)
- Willingness to pay surveys
- Milestones to assess the general impact and define optimal combination of financial measures to reduce the social costs of road safety.

Appendix 3.4 Report on thematic workshop - Training, testing and enforcement

The workshop on safer driving in the EU through Training, Education and Enforcement was held on September 18th, 2009 at the European Commission, in Rue de Mot 24, B-1040 Brussels. This was the forth of six workshops to be arranged in the coming weeks, to create input for the preparation of the next European Road Safety Action Programme for the period 2011-2020. The workshop was chaired by Ms Annie Canel, Road Safety Unit at DG TREN.

Preparation of the next road safety action programme - 2011-2020

The COWI Consortium is providing technical assistance to DG TREN's Road Safety Unit in the development of the next programme. The workshop was effective in bringing a range of stakeholders and experts together and promoted very active discussions on further developments on safer driving in the EU through Training, Education and Enforcement.

Four technical presentations were made:

Findings of expert group on driver training and road safety education	Mr. Gregor Bartl, Representative of Expert group on driver training and road safety education, coordinator of HERMES project
Novice drivers on European Roads	Mr. Luc Canen and Mr. Daniel Vandenberghe, CIECA
TISPOL cross border enforcement	Mr. Franciso Javier Sanchez, TISPOL
Euro Control Route Commercial vehicles control	Mr. Phil Stokes, Euro Contrôle Route

Based on the presentations and discussions at the workshop the following key actions were identified:

Training, Education and Licensing

- EC to further harmonize training, testing and licensing in all Member States (life long learning) based on best practices and research - including:
  - Improve the quality of the whole package « education, training and licensing ».
  - Lengthening and deepening the learning process to become a five star driver in a five star car on five star roads.
  - EC to promote traffic safety education at school - should be a systematic approach in schools in Europe, in order to increase risk awareness and self evaluation.
  - Novice drivers: Longer learning process incl. mandatory pre and post license training in order to achieve more responsible drivers.

- Novice drivers: Accompanied driving and probationary periods (driving alone at night time, zero BAC, heavier demerit point system).
- Novice drivers: Second phase training.
- Insurance discounts for accident-free novice drivers.
- Do we have a license for life or is some form of continuous training required (learning from the professional driver's directive)?
- Rehabilitation programs for offenders with high quality requirements.
- Quality insurance of the system.

• Coaching methods for more efficient driver training.
• Instructors incl. accompanied persons have to undergo introductionary seminars and have min. and max age.
• Harmonize qualification of instructors based on the definition of clear goals.
• Improved qualification of driving examiners.
• Improved training of motorcyclists.
• Raise risk awareness of new in car driver assistance systems.
• EC to fund more research on second phase training, restrictions for novice drivers, older drivers etc.

Remark: "Costs are important but you are investing in your live" (training is cheaper than the car radio).

Enforcement

• Main actions according to stakeholders present at the workshop:

• EU to harmonize:
  - Traffic regulations
  - Penalties and infractions including limits (alcohol, drugs, exemptions to wear seat belts, etc.)
  - Technical equipment standards
  - Training of vehicle inspectors
  - Exchange and gathering of enforcement data form all Member States
  - Facilitate cross border enforcement
  - Enforcement practices
  - Training of control officers, in particular on social legislation in road transport.

• EU to promote:
  - Add helmet and fatigue to list of rules
  - Raise awareness (incl. politicians) and promote best practices
  - Publish a public version of the accident risk rating system
  - Coordination of heavy-vehicle inspections between Member States and training of inspectors
  - Legislation for vans and small lorries (< 3,5 ton)
  - Harmonization of demerit point systems
  - Harmonization of licenses including chips with information on driver (medical records etc.)
  - Use of black boxes and possibilities of using data from black boxes
  - Use of campaigns together with enforcement
  - Risk assessments (audits) for transport companies and "black lists" of companies with bad road safety performance

- Alco locks and seatbelt reminders.

Appendix 3.5 Report on thematic workshop - Infrastructure

The workshop on safety of non urban non motorway roads in Europe was held on September 30th, 2009 at the European Commission, in Rue de Mot 24, B-1040 Brussels. This was the fifth of six workshops to be arranged to create input for the preparation of the next European Road Safety Action Programme for the period 2011-2020. The workshop was chaired by Mr Jean-Paul Repussard of the Road Safety Unit.

Preparation of the next road safety action programme - 2011-2020

The COWI Consortium is providing technical assistance to DG TREN's Road Safety Unit for the development of the next programme. The workshop brought together a range of stakeholder and experts leading to discussions on further developments on safety of roads in Europe.

The workshop addressed two specific issues concerning safe design and management of roads and road safety improvements through traditional technologies and/or intelligent technologies. Five technical presentations were made:

What makes a road a safe road?	Rodolphe Chassande-Motin, SETRA
How to improve the safety of road? (could the "acquis communautaire", i.e. directive 2008/96, be usefully applied to non-TEN roads?)	Jean-Paul Repussard, EC, DG-TREN
Measuring and mapping the safety of roads across Europe	Joanne HILL, iRAP
Road safety improvements through "traditional" technologies	Steve Phillips, FEHRL
Intelligent technologies for rural road safety	Paul Kompfner, ERTICO

Discussions

Each of the two sessions was followed up by discussions.

On **road infrastructure** the discussions were structured around:

- How can EU support improvement of road safety on non-urban, non-motorway roads? On TENs? On non-TENs?
- Which measures from the road safety action programme 2003-2010 should be included in the new road safety action programme?
- Are further stand-alone guidelines on road safety engineering needed? and if so, on what?
- Should activities in Directive 2008/96/EC be implemented on roads other than TENs? National roads? Local roads? Non-EU accession and neighbouring countries?
- How can EU support improvement of road safety engineering on non-urban, non-motorway roads? On TENs? On non-TENs?

- How to ensure roads are designed according to functionality with a better match between function, speed limit, layout and design?
  Should this be introduced on all roads - not just on TEN-roads?
- Should homogeneity be promoted in road design on all roads? How are major differences in speed, directions and vehicle types avoided?
- Should self-explanatory roads be promoted on all roads? How is it possible to predict and understand what to do for all road users?
- Should forgiving roadsides be promoted on all roads to assist drivers if something goes wrong?
- Is area-wide safety impact assessment, road safety audits, network management, road safety inspections, EuroRAP and iRAP approaches useful to assess existing and new roads?
- Speed management - draft guidelines for promoting best practice in traffic calming measures?
- Speed enforcement - on rural roads?
- Should the new ISO standard (39001) for road traffic safety management systems which covers aspects of road safety engineering be promoted in the Action Programme?
- What about public-private partnership?

On **traditional technologies and intelligent technologies** the discussions were structured around:

- Are there new prospects with "traditional" technologies? If so which? (signalisation, equipment, etc.)
- Are there new prospects for pavement?
- Other (intersection signal control, dynamic traffic management, local danger warning, etc.)
- What kind of infrastructure will be used in 2020?
- What are the prospects for new "intelligent" technologies?
- Which new systems are relevant (ITS), dynamic traffic management, road / driver and road / vehicle interfaces, etc.
- Speed limit mapping across the EU in support of advisory ISO?
- Should there be adaptation of the infrastructure to new types of vehicles e.g. electric vehicles?

Based on the discussions of the day the following conclusions and potential actions were identified at the workshop.

Road infrastructure

Conclusions

The following conclusions were reached in the discussion:

- EU actions needed to improve road safety on non-urban, non-motorway roads as they account for:
  - 60% of deaths
  - nearly 50% of cyclists
  - 30 % pedestrians
- There is generally a higher benefit/cost ratio by for road safety engineering on these roads than for other engineering measures

- In principle, EU Directive 2008/96 should apply to all roads but this may be hard to achieve
- Clear need for authoritative guidance/best practice guidelines covering a range of safety engineering issues and establishing a process for obtaining agreement (EU level guidelines), e.g. land use planning, speed management, forgiving roads thus contributing to the safe system approach
- Safety impact assessment is an important tool.

Actions

The following priority actions at EU level were identified in the discussion:

- The Directive should apply to all roads even if it is hard to achieve
- EU should support the development of authoritative guidance/best practice guidelines covering a range of safety engineering issues and establish a process of obtaining agreement (EU level guidelines), e.g. land use planning, speed management, forgiving roads which contribute to the Safe System approach
- Establish road safety engineering criteria for inclusion in EU project investment guidance e.g. by insisting on the application of the four instruments of the Infrastructure safety directive in the use of funds on all types of roads in all EU and third countries, via e.g. internal guidelines of institutions/banks providing funds and with reference to best practice guidelines
- EU should provide resource allocation for safety engineering and promote the concept of self explaining and forgiving roads alongside with the application of safe system road design concept
- Safety impact assessment is an important tool that should be promoted by the EU
- EU should have a role in technical standards (skid resistance, barriers, markings, lighting, poles, guardrails, shoulders, lanes, traffic signs..) to ensure minimum standards
- EuroRAP/iRAP risk mapping and protection score rating influential and should be promoted and supported by the EU
- Ensure all road users are catered for in revision of road classifications and not only car users
- EU to promote better accident/survey data, e.g. GPS to identify exact location of accidents, dangerous behaviours e.g. excess speed
- EU to draw up the technical guidelines on the treatment of high risk sites and design of low costs infrastructure measures
- EU to support demonstration projects and research for innovative safety engineering.
- Take account of the needs of vulnerable and unprotected road users in the operation and design of road improvements.

Technologies

Conclusions

The following conclusions were reached in the discussion on potential technologies:

- Technologies are expected to have a potential, but:
  - More testing and demonstration projects is needed to assess evidence on what works and what does not with regard to safety

- Standards are needed for e.g. intelligent signs, pavements, junctions, amber lights
- Capacity building is needed
- Best practice guidelines are needed at EU level or compulsory norms.

Actions

The following priority actions at EU level were identified in the discussion:

- EU should promote both traditional technologies and new technologies, e.g. by
  - Supporting testing and demonstration projects
  - Ensure common EU standards on proven safety technologies
  - Provide framework for economic evaluation, cost-benefit decision making, use impact assessment when assessing the benefits of potential ITS technologies
  - Promote, standardize and provide for deployment of ISA (Intelligent Speed Adaptation) in Europe
  - Make e-call mandatory in a short term and extend it also to PTWs (Powered Two-Wheelers)
  - Promote and support the deployment of technologies having the greatest life-saving potential (ISA, ACC (Adaptive Speed Control), SBR (Seat Belt Reminders), LDA (Lane Departure Assistance), and for technologies to hinder dangerous driving (fatigue, alcohol, drugs and distraction).
  - Assure better co-operation between cars and road infrastructure providers to achieve safe road travel on the network.
  - Ensure development of best practice guidelines and dissemination of them
  - Use non-skid paint to avoid slippery markings amongst other low cost measures.

Appendix 3.6 Report on thematic workshop - Communication

The workshop on Communication on Road Safety was held on October 1, 2009 at the European Commission in room J-99 00/53 at DG MARE, Rue Joseph II, 99, B-1040 Brussels. This was the last of six workshops arranged to create input for the preparation of the next European Road Safety Action Programme for the period 2011-2020. The workshop was chaired by Jean-Paul Repussard of the DG TREN Road Safety Unit.

Preparation of the next road safety action programme - 2011-2020

The COWI Consortium is providing technical assistance to DG TREN's Road Safety Unit for the development of the next programme. The workshop brought together a range of stakeholders and experts leading to active discussion on further developments in the communication of information and knowledge on road safety.

The workshop addressed three specific issues concerning communication on road safety including the European Road Safety Observatory (ERSO), the European Road Safety Charter (ERSC) and new communication tools. Seven technical presentations were made.

ERSO today and in future?	Isabelle KARDACZ, DG TREN
'Alerts' instruments based on observation	Peter SILVERANS, IBSR
Detailed (statistical) analyses	Emmanuelle DUPONT, IBSR
ERSC today and in future	Maria-Teresa SANZ VILLEGAS, DG TREN
Forum Civitas	Marcel ROMMERTS, DG TREN
European Campaigns	Christian MESETH, European Parliament
Responsible Young Drivers	Céline DANHIER – Axel DRUART, RYD

Each of the three sessions was followed up by discussions. On ERSO the discussions were structured around:

- How can the European Road Safety Observatory be developed further in support of the next EU road safety action programme?
- What specific actions might be taken?
- How can experience with observatories in different Member States inform?
- What are the priority actions at EU level?

On ERSC the discussions were structured around:

- How can the European Road Safety Charter be developed further in support of the next EU road safety action programme?

- Are there useful examples which can be used to inform any expansion of the Charter?
- Could the example of CIVITAS be used?
- What are the priority actions at EU level?

On new communication tools the discussions were structured around:

- New tools for communications strategies?
- How can they be used?
- How can the EU CAST project guidance be taken forward?
- What are the priority actions at EU level?

Based on the discussions of the day the following conclusions and potential actions were identified at the workshop.

European Road Safety Observatory

Conclusions

The following conclusions were reached in the discussion:

- The European Road Safety Observatory should be established as a permanent EU structure as a source of information and knowledge for all with appropriate human and financial resource.
- The broadening of the scope of ERSO should preserve and strengthen the original aims of ERSO as an established and valuable source of knowledge and data.
- In broadening the target groups, the ERSO will need to create appropriate communication platforms for the general public, experts and policymakers.
- Contact with ERSO by the general public should be easy and accessible.
- More coherent data for international comparison is needed and the DaCota project will take this forward.
- The existing Council agreement for provision of data by Member States may need to be reviewed to meet the future data needs of ERSO.

Actions

The following priority actions at EU level were identified in the discussion:

- The EU should establish ERSO as a permanent EU structure as a source of information and knowledge for all with appropriate human and financial resource.
- Knowledge and data for experts and policymakers should be periodically updated and added to in light of new EU research and policy initiatives and the international knowledge base.
- In targeting the general public, the EU should promote the development of an interactive tool so that the enquirer can receive relevant, targeted information.
- The EU should stimulate detailed in-depth investigations and in-depth accident data collection and analysis.
- The EU should develop, promote and establish, in due course, a single EU reporting system for crash injury, exposure data, and other data.
- EU should promote the development of more ‘best practice’ resources/tools for implementing road safety measures.

- There is a need for the Commission to adopt a standard definition for minor and severe "injured" i.e. non-fatal casualties and implement this across the databases.
- The EU should build on proposals for quick indicators/monthly reports of safety performance targeted at the media.
- The EU should fund demonstration projects on the value of data to reinforce the importance of data for policymaking.
- The EU should create a network of national level observatories within ERSO.

European Road Safety Charter

Conclusions

The following conclusions were reached in the discussion:

- Networking, regular contact, and access to 'road safety champions' including celebrities were all important and a central office might be useful in aiding external contact.
- It is important that the Charter actions were 'as well as' not 'instead of' effective road safety action.
- Commission ownership was as important for the ERSC as the ERSO.
- In the discussion about the value of commitments of signatories, it was concluded that making a formal commitment is likely to lead to more meaningful organisational engagement and discussion than supporting the Charter just as a signatory.
- Notwithstanding the success of CIVITAS, the Charter needed to reach beyond cities and more broadly to civil society - to other jurisdictions, non-transport organisations, schools, supermarkets, health organisations - if funding can be secured.
- The improvement or enlivenment of existing commitments was as important as seeking new commitments.

Actions

The following priority actions at EU level were identified in the discussion:

- The EU should stimulate specific, effective action for different stakeholder groups within the framework of the Charter e.g. employers, health sector, cities etc.
- It was important that the EU evaluated the effectiveness of all types of road safety action being carried out within the framework for the Charter.
- The ERSC framework should be developed to encourage the development of national Charters which might allow for easier access by smaller organisations.
- The EU should seek support for the ERSC in the new Member States.

New communication tools

Conclusions

The following conclusions were reached in the discussion:

- Any communication directed at improving road safety should be based on a well-defined, carefully prepared and targeted communication strategy, as outlined in the EU CAST project and in combination with other effective actions such as police enforcement.
- New opportunities exist for more direct targeting of road safety messages.

- Proven best practice methods will continue to play the key role for the foreseeable future, although experimentation with new media is desirable.
- Peer to peer and face to face contact has been identified as being valuable.
- The summary conclusion was to use best practice, innovate and evaluate.

Actions

The following priority EU actions were identified in the discussion:

- The EU should actively promote the CAST best practice communication strategy manuals.
- The EU should support experimentation and evaluation of new media tools for use in combined online and offline campaigns.

Appendix 4 Report on stakeholder conference

The summary report for the stakeholder conference is provided in the following. The full report of the stakeholder conference is in a separate document.

Consultation process

Stakeholder consultation towards the development of the next EU road safety action programme 2011-2020 was carried out by the European Commission between July and December 2009. This consultation comprised a series of six thematic workshops and an internet consultation and culminated in a stakeholder conference on 2nd December, 2009.

Stakeholder conference

The conference presented the results of the public consultation process aimed at generating input for the preparation of the next European Road Safety Action Programme for the period 2011-2020.

Around 500 stakeholders were invited to discuss the results of the public consultation and possible actions to be included in the next Road Safety Action Programme 2011-2020. The event was moderated by journalist Alex Taylor. The themes of the stakeholder conference included:

- Introduction to the stakeholder conference
- Problems and state of play
- Panel 1: Safety of vehicles and of infrastructure
- Internet EUROPA Website
- European Road safety Charter Price
- Panel 2: The European Citizen, Actor of Road Safety

Following the welcome and introduction to the stakeholder conference by Mr Zetterberg, Secretary of State for Communications (Sweden), Mrs Țicău, MEP (Romania) and Mr Tajani, Vice-President of the European Commission in charge of Transport existing problems and state of play was presented. This session contained presentations from Mr Grillo Pasquarelli, Director of Inland Transport (DG TREN) and Mrs Kardacz, Head of Road Safety Unit (DG-TREN) on results of the current European Road Safety Action Plan and results of the public consultation.

Road safety website

DG-TREN launched the new Internet EUROPA website on road safety and explained the main features of the website. The website is found on the following address: http://ec.europa.eu/transport/road_safety/index_en.htm. The new homepage should provide access to relevant road safety areas for the general public, decision makers and specialists. Thus there will both be a public layer and a specialist layer, which are connected by links.

Road Safety Awards 2009

The receivers of the Excellence in Road Safety Awards 2009 were presented. All the signatories of the Charter were thanked and the Awards for Excellence in road safety were given to those who have demonstrated the best road safety actions and initiatives undertaken within the framework of the European Road Safety Charter in 2009.

Suggestions for actions	From the panel sessions and discussions the suggestions for actions to be included in the next European Road Safety Action Programme for the period 2011-2020 include the following:
Vision and targets	• There should be a common long term vision such as vision zero approach, • Ambitious quantitative targets should be identified both at EU level but also by member state - there should be common EU standards by 2020 • Targets for serious injured or maybe victims (killed and injured) should be identified • Quantitative targets should be identified for vulnerable groups.
Accident data	• Establish common definition for injuries • Improve accident databases to better allow analysis for urban areas EU to establish a framework within Member States may act.
EU support, funding and pressure	• EU should support and provide more pressure on Member States to improve road safety • An EU Road Safety Fund should be established • Link EU funding to road safety aspects, e.g. road safety audits should be in place before funding.
Evaluate efforts	• Evaluate previous efforts - what works what doesn't • Ensure results of research are used including both past, existing and future research.
Accident costing and CBA	• Calculate costs of accidents, injuries and fatalities • Promote importance and usage of cost-benefit analysis to find right solutions and priorities.
Safe infrastructure	• Extend directive on road safety (infrastructure management) to all roads (local and inter-urban) including road safety audits, road safety inspections, network management and impact assessment • Support safe system approach or sustainable safety approach • Support that minimum standards should be ensured for infrastructure • Ensure infrastructure and road standards take all users in to account (e.g. safety barriers, road markings, sign posting etc.) • Design streets for all road users - also disabled • More safe rest places should be established along the road network • Continue and develop harmonisation of standards.
Vehicle technologies and technologies	• Crash worthiness tests of vehicles should also include how vehicles protect other users • Establish a star rating system for motorcycles • More focus on tyres both in directive and though tyre pressure measuring system, tyre stations and during enforcement • New technologies should be introduced faster and a framework should be established by EU within which Member States may act • Focus should be on preventing accidents e.g. through ITS by more use of sensors, etc. • Collect evidence on the effectiveness of e.g. ITS through research, etc.

	• More research on motorcycle accidents.
Legislation, enforcement and sanctions	• Harmonise legislation and policies, e.g. Highway Code, traffic regulation, penalty code, driver licences etc. • Support continued enforcement • Ensure cross border enforcement and sanctions • Focus on four killers in enforcement (speed, drunk driving, seat belts and helmets).
Best practices	• Continue and develop sharing of best practices.
Drivers, fitness and training	• More training of all drivers • Indentify fitness to participate criteria for assessment of capability to drive for all • Develop tools and formalise the legal framework for medical doctors role.
Safety at work	• Encourage employers to do a risk assessment • Encourage private and public entities to purchase safe vehicles and to only buy transport from companies using speed limiters etc.
Concluding remarks on panel debates	Ms Merli as Great Witness concluded on the panel debates and emphasised a number of initiatives: • Benchmarking, we must learn from successes and failures to help to understand how to reach the objectives. • Behaviour: a number of balanced policies, e.g. controls, sanctions, training, including cross border enforcement and sanctions. • Dialogue that is free flowing is the course for the future. • Be innovative and to do more and better with the resources available. • Roads and streets in the cities should be able to handle different transport modes with different systems • Rural areas, we must understand driving in rural areas. • Driving is increasingly specialised, urban, long distance, rural and this requires different skills from the driver. Finally EU should make a conference like this to an annual tradition under the new European Road Safety Action Program and to look at progress every year, good practises and country differences.
Closing remarks	Mr Pellegrini, a member of the cabinet of Vice President Tajani spoke on behalf of Mr Preto, summed up the next steps towards a better Road Safety in Europe and closed the conference. Mr Pellegrini repeated that Mr Tajani mentioned importance of cross border enforcement and that voluntary initiatives are important, but that a directive is important for changing user behaviour. A threat of sanctions even if crossing a border is important.

Another key element is having a cross cutting approach, including Road Safety in other policy areas. This is seen before by DG EMPL, ENV and RESEARCH, and similar policy integration can be done for Road Safety.

Concrete actions must be drawn up. It is important to have knowledge on figures hereunder external costs related to accidents. Accidents are expensive and constitute a large cost for the economy.

Another idea is applying Road Safety Audits also to secondary roads. We do invite DG TREN to work on the area of Vulnerable Road Users, notably Motor Cycles as casualties are increasing whereas casualties numbers are decreasing in other areas. EU had a goal of halving deaths in last programme. We have no figures for serious injuries. As Zetterberg mentioned this morning, Sweden has programmes for reducing serious injuries and we could learn from this in the next programme. We must bring down numbers as far as possible!

Mr Pellegrini motioned the following key points summing up:

- A code for Road Safety at European level – not necessarily a highway code – as there could be subsidiary problem
- European Road Safety Agency to be set up – an agency has served import for aviation, maritime affairs and railways.
- An annual conference like today is an excellent idea to monitor progress and objectives set
- Electric vehicles are part of the future. 97% of transport is based on fossil fuels and this cannot continue. Use of electric vehicles must be promoted. Japan is a frontrunner here and concerning the problems of silent nature of these vehicles we must look ahead but investigate carefully.

Appendix 5 Safe System

Source: Bliss T and Breen J, Country Guidelines for the Conduct of Road Safety Management Capacity Reviews and the Specification of Lead Agency Reforms, Investment Strategies and Safe System Projects. Global Road Safety Facility, World Bank (2009)

ROAD SAFETY MANAGEMENT: EVOLUTION OF RESULTS FOCUS TO SAFE SYSTEM

Successive shifts in road safety management thinking and practices in high-income countries have been evident over the last fifty years. Rapid motorization and escalating road deaths and injuries began in many OECD countries in the 1950s and 1960s and concurrently the ambition to improve road safety outcomes began to grow. Since the 1950s there have been four significant phases of road safety management which have become progressively more ambitious in terms of the results desired.

(i) Results Focus—Phase 1: Focus on driver interventions.
In the 1950s and 1960s safety management was generally characterized by dispersed, uncoordinated, and insufficiently resourced institutional units performing isolated single functions (Trinca et al, 1988). Road safety policies placed considerable emphasis on the driver by establishing legislative rules and penalties, supported by information and publicity, and expecting subsequent changes in behavior. It was argued that since human error mostly contributed to crash causation it could be addressed most effectively by educating and training the road user to behave better. Placing the onus of blame on the road traffic victim acted as a major impediment to the appropriate authorities fully embracing their responsibilities for a safer road traffic system (Rumar, 1999)

ii) Results Focus—Phase 2: Focus on system-wide interventions.
In the 1970s and 1980s these earlier approaches gave way to strategies which recognized the need for a systems approach to intervention. Dr. William Haddon, an American epidemiologist, developed a systematic framework for road safety based on the disease model which encompassed infrastructure, vehicles and users in the pre-crash, in-crash and post crash stages (Haddon, 1968). Central to this framework was the emphasis on effectively managing the exchange of kinetic energy in a crash which leads to injury, to ensure that the thresholds of human tolerances to injury were not exceeded. The scope of policy broadened from an emphasis on the driver in the pre-crash phase to also include in-crash protection (both for roadsides and vehicles) and post-crash care. This focused road safety management on a system-wide approach to interventions and the complex interaction of factors which influence injury outcomes. It underpinned a major shift in road safety practice which took several decades to evolve. However, the focus remained at the level of systematic interventions and did not directly address the institutional management functions producing these interventions or the results that were desired from them. The strengths of this approach mask its inherent weakness as being viewed as embracing all the essential elements of the road safety management system, whereas the institutional context is not directly addressed. In many ways much of the contemporary debate on road safety is still bounded by the dimensions of the ‘Haddon

Matrix' which only addresses system-wide *interventions* and for this reason institutional management functions and the related focus on results still receive limited attention.

(iii) Results Focus—Phase 3: Focus on system-wide interventions, targeted results and institutional leadership.

By the early 1990s good practice countries were using intervention focused plans setting numerical outcome targets to be achieved with packages of system-wide measures based on the evidence generated from ongoing monitoring and evaluation. It had become clear that growing motorization need not inevitably lead to increases in death rates but could be reversed by continuous and planned investment in improving the quality of the traffic system. The United Kingdom, for example, halved its death rate (per 100,000 head of population) between 1972 and 1999 despite a doubling in motorised vehicles. Stronger expressions of political will were evident and institutional management functions were becoming more effective. Institutional leadership roles were identified, inter-governmental coordination processes were established and funding and resource allocation mechanisms and processes were becoming better aligned with the results required. Developments in Australasian jurisdictions (e.g., Victoria and New Zealand) further enhanced institutional management functions concerning results focus, multi-sectoral coordination, delivery partnerships, and funding mechanisms (WHO, 2004; Bliss, 2004; Wegman et al., 2006; Trinca et al., 1988). Accountability arrangements were enhanced by the use of target hierarchies linking institutional outputs with intermediate and final outcomes to coordinate and integrate multi-sectoral activities. This phase laid the foundation for today's good practice and reflects the state of development in many higher performing countries today. The strengths of this approach can turn into weaknesses to the extent that the focus on safer people, safer vehicles, safer roads and safer systems diverts attention away from the road network where the actual deaths and injuries are incurred. Successful targeted plans have achieved large measurable gains in improved road user behaviour and this success helped to reinforce the earlier approach which focused purely on driver interventions. The sharpened emphasis on setting ambitious but achievable targets could also inhibit innovation, to the extent that targets are bounded by what is deemed to be technically feasible and institutionally manageable, thus blunting the aspiration to go beyond what existing evidence suggests is achievable.

(iv) Results Focus—Phase 4: Focus on Safe System long-term elimination of deaths and serious injuries and shared responsibility.

By the late 1990s two of the world's best performing countries had determined that improving upon the ambitious targets that had already been set would require rethinking of interventions and institutional arrangements. The Dutch *Sustainable Safety* and Swedish *Vision Zero* strategies set a goal to make the road system intrinsically safe (Wegman et al., 1997; Tingvall, 1995; Committee of Inquiry into Road Traffic Responsibility, 1999).

The emphasis on effectively managing the exchange of kinetic energy in a crash to ensure that the thresholds of human tolerances to injury were not exceeded (as originally promoted in Phase 2) was revitalized and given an ethical underpinning in the sense that road deaths and injuries were seen as an unac-

ceptable price for mobility. The implications of this level of ambition are still being worked through in the countries concerned and elsewhere. These strategies recognize that speed management is central and have refocused attention on road and vehicle design and related protective features. The blame the victim culture is superseded by blaming the traffic system which throws the spotlight on the shared responsibility and accountability for the delivery of a *Safe System.*

For example, *Vision Zero* aims for an approach in which safe vehicle design delivers a protected occupant into a road system where conflict is minimized by design and energy transfer in crashes is safely controlled. In this system users comply with risk-averse behavioral norms created by education, enforcement and incentives. The emphasis is on the road users' right to health in the transport system and their right to demand safer systems from decision-makers and road and vehicle providers. The strengths of this approach are becoming increasingly evident. What was previously seen as radical and unachievable by many road safety practitioners and policymakers has quickly become the benchmark and central debating point for analyses of what constitutes acceptable road safety results.

Safe System Principles (World Bank 2009)

Managing kinetic energy in the event of a crash A key design principle of a *Safe System* approach is that the system must rely on a balance between allowable travel speeds and the inherent safety of the infrastructure and vehicles. Allowable speed limits must take into account the crash protection offered to users by roads and vehicles. The chances of survival for an unprotected pedestrian hit by a vehicle diminish rapidly at speeds greater than 30km/h, whereas for a properly restrained motor vehicle occupant the critical impact speed is 50km/h (for side impact crashes) and 70 km/h (for head-on crashes). Speed management is central and scientific knowledge about human tolerance thresholds is further informing decisions about safe speeds for the road network.

Network safety engineering principles New safety design principles have been set out for safer roads which better reduce everyday human error and take better account of human tolerance thresholds, not only for motor vehicle occupants but for vulnerable users. These aim for a better match between road function, speed limit, layout and design in the road hierarchy, separating dangerous mixed road use, wherever possible, and speed management and crash protective design. In a *Safe System* approach, highway engineers generally address four main crash types, vulnerable user crashes, crashes at intersections, run-off-road crashes and head-on crashes.

Improving the crash-protection of vehicles for car occupants and pedestrians Research and experience have shown how levels of crash protective performance for car occupants and potentially for pedestrians can be improved greatly by a combination of legislative norms and safety ratings.

Improving post crash care is characterized by efficient emergency notification, fast transport of expert medical personnel, correct at scene diagnosis, patient stabilization, prompt transport to point of treatment, quality emergency room and trauma care, and extensive rehabilitation services.

The tools and accumulated practices used to support the results management framework for the *Safe System* approach are the same as those used in the past to prepare targeted national plans. Targets are still set as milestones to be achieved on the path to the ultimate goal, but the interventions are now shaped by the level of ambition, rather than vice versa. Innovation becomes a priority to achieve results that go well beyond what is currently known to be achievable. In moving forward the *Safe System* approach reinterprets and revitalizes what is already known about road safety, and raises critical issues about the wider adoption of interventions that have proven to be effective in eliminating deaths and serious injuries (e.g., median barriers). The question becomes one of how to introduce these proven safety interventions more comprehensively and rapidly, and indeed this question applies to all elements of the road safety management system with potential for improvement.

The shift to a *Safe System* approach is also well attuned to the high priority global, regional and country development goals of sustainability, harmonization and inclusiveness. A *Safe System* is dedicated to the elimination of deaths and injuries that undermine the sustainability of road transport networks and the communities they serve. Its focus on safer and reduced speeds harmonizes with other efforts to reduce local air pollution, greenhouse gases and energy consumption. And its priority to afford protection to all road users is inclusive of the most vulnerable at-risk groups such as pedestrians, young and old, cyclists and motorcyclists. These co-benefits of shifting to a *Safe System* approach further strengthen the business case for its implementation.

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