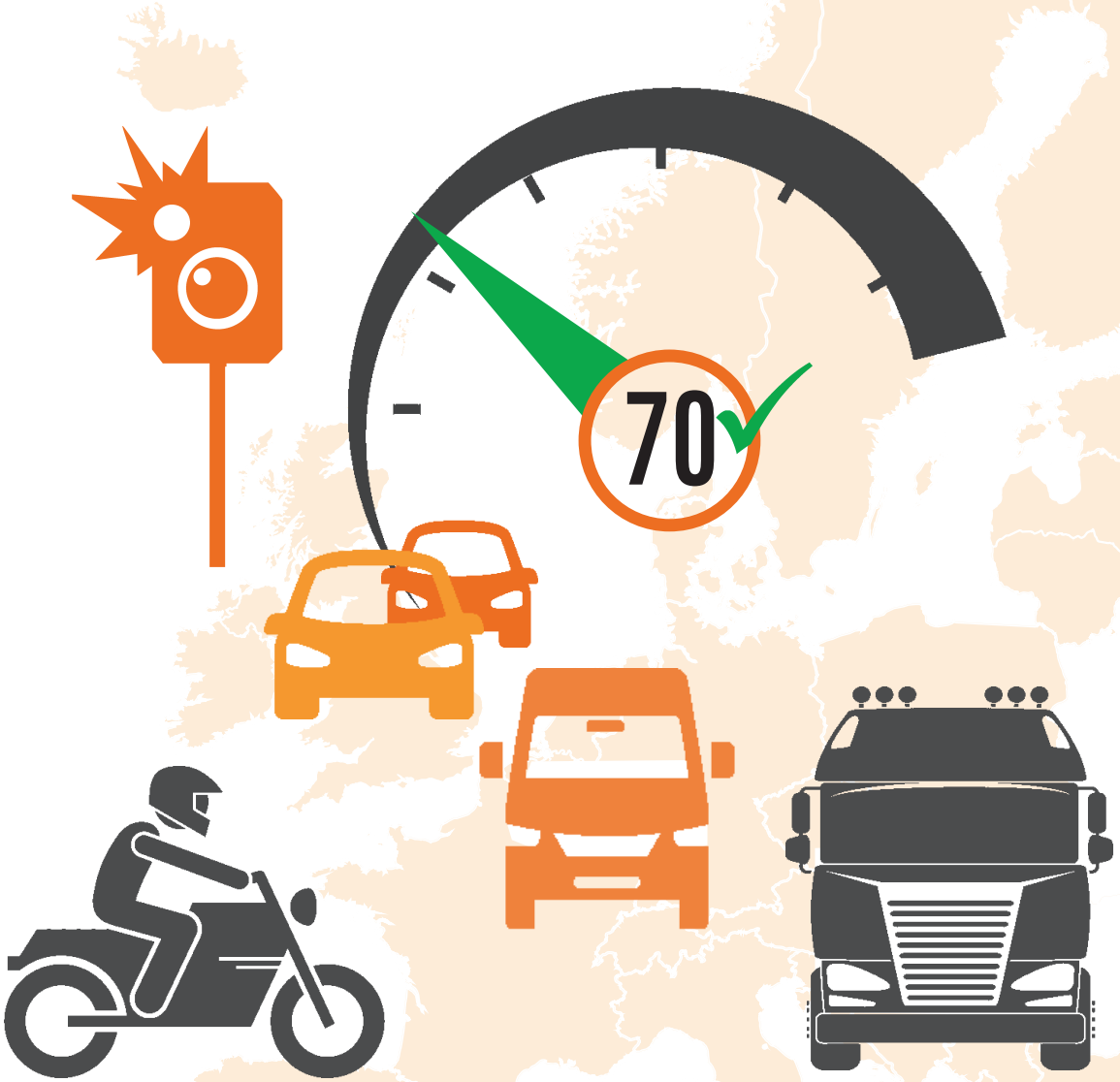
REDUCING SPEEDING IN EUROPE

PIN Flash Report 36

February 2019



ETSC
European Transport Safety Council

Road Safety PIN

PIN Panel

Austria (AT)	Klaus Machata, Road Safety Board (KFV)
Belgium (BE)	Heike Mertensen, VIAS institute
Bulgaria (BG)	Aleksi Kesyakov, State-Public Consultative Commission on Road Safety
Croatia (HR)	Sanja Veić, Ministry of Interior
Czech Republic (CZ)	Jiří Ambros, Jindřich Frič, Transport Research Centre (CDV)
Cyprus (CY)	George Morfakis, Road Safety Expert, Irene Manoli, Ministry of Transport, Communications and Works
Denmark (DK)	Pernille Ehlers, Danish Road Safety Council
Estonia (EE)	Erik Ernits, Road Administration
Finland (FI)	Esa Räty, Finnish Crash Data Institute (OTI)
France (FR)	Manuelle Salathé, National Interministerial Road Safety Observatory
Germany (DE)	Jacqueline Lacroix, German Road Safety Council (DVR)
Greece (EL)	George Yannis, Technical University of Athens
Hungary (HU)	Peter Holló, Institute for Transport Sciences (KTI)
Ireland (IE)	Sharon Heffernan, Velma Burns, Road Safety Authority
Israel (IL)	Shalom Hakkert, Transportation Research Institute- Technion, Victoria Gitelman, Road Safety Research Center - Technion
Italy (IT)	Valentino Iurato, Ministry of Transport
Latvia (LV)	Aldis Lāma, Road Traffic Safety Directorate
Lithuania (LT)	Vidmantas Pumputis, Ministry of Transport
Luxembourg (LU)	Claude Paquet, Ministry for Sustainable Development and Infrastructure
Malta (MT)	David Sutton, Patrick Cachia March, Transport Malta
Netherlands (NL)	Peter Mak, Ministry of Transport
Norway (NO)	Per Andreas Langeland, Institute of Transport Economics (TOI)
Poland (PL)	Ilona Buttler, Motor Transport Institute (ITS)
Portugal (PT)	João Cardoso, National Laboratory of Civil Engineering (LNEC)
Romania (RO)	Florentin Brăcea, Romanian Traffic Police
Serbia (RS)	Lidija Stanojević, Road Traffic Safety Agency
Slovakia (SK)	Petra Groschová, Ministry of Transport
Slovenia (SI)	Vesna Marinko, Traffic Safety Agency
Spain (ES)	Pilar Zori, Ministry of Interior
Sweden (SE)	Anna Vadeby, National Road and Transport Research Institute (VTI)
Switzerland (CH)	Yvonne Achermann, Swiss Council for Accident Prevention (bfu)
U.K. (GB)	Delphine Robineau, Department for Transport Sally Panayiotou, Transport Research Laboratory (TRL)

PIN Observers

Stelios Efstathiadis, Road Safety Institute Panos Mylonas, Greece
Lucia Pennisi, Automobile Club d'Italia (ACI), Italy

PIN Steering Group

Henk Stipdonk, Netherlands Institute for Transport Analysis (KiM) (PIN Co-chair)

Heather Ward, University College London (UCL), Parliamentary Advisory Council for Transport Safety (PACTS) (PIN Co-chair)

Richard Allsop, ETSC Board of Directors (PIN Advisor)

Lars Ekman, Swedish Transport Administration

Jacqueline Lacroix, the German Road Safety Council (DVR)

Astrid Linder, Swedish National Road and Transport Research Institute (VTI)

Wiebke Matysik, Toyota Motor Europe

Guro Ranes, Norwegian Public Roads Administration

Maria Teresa Sanz-Villegas, European Commission

Pete Thomas, Loughborough University

George Yannis, Technical University of Athens

Antonio Avenoso, ETSC

Graziella Jost, ETSC

Dovile Adminaité-Fodor, ETSC

For more information

European Transport Safety Council
20 Avenue des Celtes
B-1040 Brussels
Tel: +32 2 230 4106
dovile.adminaite@etsc.eu
www.etsc.eu/pin

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PIN Flash Report 36

Authors
Dovile Adminaité-Fodor
Graziella Jost

PIN co-chairs
Henk Stipdonk
Heather Ward

Programme advisor
Richard Allsop

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The PIN programme relies on panellists in the participating countries to provide data for their countries and to carry out quality assurance of the figures provided. This forms the basis for the PIN Flash reports and other PIN publications. In addition, all PIN panellists are involved in the review process of the reports to ensure the accuracy and reliability of the findings.

ETSC is grateful for the financial support for the PIN programme provided by Toyota Motor Europe, the Swedish Transport Administration, the German Road Safety Council and the Norwegian Public Roads Administration.

ABOUT THE EUROPEAN TRANSPORT SAFETY COUNCIL (ETSC)

ETSC is a Brussels-based independent non-profit organisation dedicated to reducing the numbers of deaths and injuries in transport in Europe. Founded in 1993, ETSC provides an impartial source of expert advice on transport safety matters to the European Commission, the European Parliament and Member States. It maintains its independence through funding from a variety of sources including membership subscriptions, the European Commission, and public and private sector support.

ABOUT THE ROAD SAFETY PERFORMANCE INDEX PROJECT

ETSC's Road Safety Performance Index (PIN) programme was set up in 2006 as a response to the first road safety target set by the European Union to halve road deaths between 2001 and 2010. In 2010, the European Union renewed its commitment to reduce road deaths by 50% by 2020, compared to 2010 levels.

By comparing Member State performance, the PIN serves to identify and promote best practice and inspire the kind of political leadership needed to deliver a road transport system that is as safe as possible.

The PIN covers all relevant areas of road safety including road user behaviour, infrastructure and vehicles, as well as road safety policymaking. Each year ETSC publishes PIN Flash reports on specific areas of road safety. A list of topics covered by the PIN programme can be found on http://etsc.eu/projects/pin/.

"Reducing speeding in Europe" is the 36th PIN Flash report. The report covers 32 countries: the 28 Member States of the European Union together with Israel, Norway, the Republic of Serbia and Switzerland.

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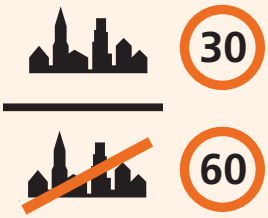

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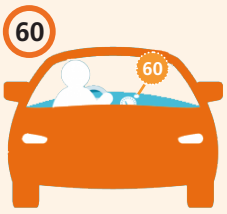

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EXECUTIVE SUMMARY

Excessive and inappropriate speed is accountable for about one third of fatal collisions and is an aggregative factor in most collisions.

Speed is a major factor in overall road safety performance. Excessive and inappropriate speed is accountable for about one third of fatal collisions and is an aggravating factor in most collisions. 2,100 lives could be saved each year if the average speed dropped by only 1 km/h on all roads across the EU.

Speeding on different types of road

In the EU, 37% of all road deaths occur on urban roads. Among the countries that monitor levels of speed compliance on urban roads countrywide, between 35% and 75% of vehicle speed observations are higher than the legal speed. There has been a mixed progress in reducing mean speeds on urban roads in countries that could provide data.

55% of all road deaths in the EU occur on rural non-motorway roads. There has been an overall lack of progress in reducing mean speeds on rural roads in the countries that could provide data. Standard speed limits on rural non-motorway roads vary across EU Member States. Most of the countries with a significantly lower road mortality rate than the EU average of 50 deaths per million inhabitants apply a 70 km/h or 80 standard speed limit on rural roads. Among the countries monitoring speed on rural non-motorway roads, between 9% to 63% of vehicle speed observations are higher than the speed limit.

On average, 8% of all road deaths in the EU occur on motorways. In countries providing data concerning speeds on motorways, progress in terms of annual change in average speed on motorways is mixed. Between 23% and 59% of observed vehicle speeds on motorways are higher than the speed limit.

Solving the speeding problem

The Safe System approach, which has been endorsed in the EU strategic action plan on road safety, requires the road traffic management system to limit speeds to survivable levels, taking into account that humans make mistakes and their bodies have a limited tolerance for kinetic forces in case of a road collision.

Experience shows there is not one single measure to reduce speeds for all road types. Member States and the EU institutions should prioritise a range of integrated measures that together bring road users to safe speeds. These measures include safe and credible speed limits supported by self-explaining and self-enforcing roads, vehicles that help drivers to comply with speed limits, stricter laws, effective traffic law enforcement activities and road user education.

Member States should also develop performance indicator targets for desirable levels of speed compliance and systematically monitor the progress towards these targets.

Speed limit selection is a critical indicator determining safe travel speed for different road types.

Setting and enforcing speed limits

Speed limit selection is a critical indicator determining safe travel speeds for different road types. Which speed is considered safe depends on the road design and its function, traffic volume, the composition of traffic and potential conflict types.

Some countries have adopted national guidelines accompanying road traffic acts to help speed limit-setting authorities adjust speed limits. It is hard to know the extent

to which these guidelines are implemented as most of them are not binding. Moreover, speed limit reviews are usually not mandatory. Implementation of those national guidelines could be improved by financial or other incentives.

A combination of mobile roadside police checks together with automated stationary enforcement, including fixed and average speed or time-over-distance cameras has proved to be an effective tool in addressing speeding.

In general, there appears to be an overall increase in speed offences detected throughout the EU, mainly due to the extension of safety camera networks. Nevertheless, there are big discrepancies regarding the amount of safety cameras and the number of speeding tickets issued in each Member State.

Out of the 27 countries that could provide data on the number of speeding tickets issued over the period 2010-2017, the figure went up in 18 countries while 9 registered a decrease.

Upcoming EU initiatives

The EU's Third Mobility Package, a set of policies and legislative initiatives designed to make a major contribution to cutting road deaths and serious injuries in half by 2030, is currently working its way through the legislative process.

Vehicle safety

The EU has the exclusive authority to set minimum safety standards for all new vehicles sold on the EU market. The standards were last updated in 2009.

The package includes a legislative update to minimum vehicle safety standards. The proposed standards include mandatory fitment of overridable Intelligent Speed Assistance (ISA) on all cars, vans, buses and heavy goods vehicles. Research shows that this single technology could help to achieve a high level of compliance with speed limits and eventually cut road deaths by 20%.

Speed performance indicators

Regularly and systematically collected safety performance indicator (SPI) data can contribute to effective speed management strategies.

Regularly and systematically collected SPI data can contribute to effective speed management strategies.

The EU's Third Mobility Package contains a Strategic Action Plan on Road Safety that suggested putting forward key safety performance indicators (SPIs) in the EU road safety policy framework 2021-2030. Some of the indicators that are currently being discussed will focus on driving speeds. If implemented by the Member States, this European Commission initiative will allow monitoring Member States' progress in improving various road safety areas and will enable better understanding of the reasons behind the progress or lack of it.

Infrastructure safety

The package also contains a proposal to update road infrastructure safety management rules. The existing Directive only covers the major European motorways and other roads that form the Trans-European Road Network (TEN-T).

The proposal envisages extending the scope of the Directive beyond the TEN-T network to motorways and primary roads, as well as all roads outside urban areas that are built using EU funds. It could improve transparency and introduce a proactive approach to assess collision and severity risk, with clear links to speed management.

Main recommendations to Member States

- Develop, and encourage speed limit-setting authorities to apply, national speed limit guidelines based on the Safe System approach. When developing guidelines, take into account factors such as road design, roadside (e.g. land use and topography), traffic composition and flow, presence of vulnerable road users and vehicle quality.[1]
- Mandate authorities to review and regularly update speed limits (e.g. every five years) using specifications identified in the national speed limit guidelines.
- Adopt national or regional enforcement plans with annual targets for a number of checks and compliance levels, including on speeding, in line with the EC 2004 Recommendation on Traffic Law enforcement.[2]
- Collaborate with the EC in developing and systematically collecting harmonised safety performance indicator (SPI) data and set national SPI targets, including SPIs related to speed.

Within the context of the update of the EU General Safety of Motor Vehicles Regulation and the Pedestrian Safety Regulation[3]:

- Support the introduction of an overridable Intelligent Speed Assistance (ISA) on all new vehicles.

Within the context of the revision of the Road Infrastructure Safety Management Directive 2008/96[4]:

- Support the extension of the scope of the Directive to all motorways as well as main rural and urban roads during the negotiations between the Council, Parliament and Commission.

Within the context of the revision of Directive 2015/413 concerning Cross-border Exchange of Information on road safety-related traffic offences[5]:

- Apply the Directive in full, setting targets for a high level of follow-up of non-resident offenders.

Main recommendations to the EU

- Prioritise measures to reduce speed in the 5th EU Road Safety programme.
- Set SPI targets in the 5th EU Road Safety programme.

Within the context of the update of the EU General Safety of Motor Vehicles Regulation and the Pedestrian Safety Regulation:

- Fit all new vehicles with an overridable Intelligent Speed Assistance (ISA) system that defaults to being switched on.[6]
- Fit all new heavy goods vehicles (HGVs) and buses with an overridable Intelligent Speed Assistance system in line with the recommendations of the evaluation study conducted on behalf of the European Commission.[7] The system should be overridable up to 90 km/h for heavy goods vehicles and 100 km/h for buses (in line with existing EU legislation on speed limiters).

Within the context of the revision of the Road Infrastructure Safety Management Directive 2008/96:

- Support EU-wide extension of the scope of the Directive to main rural and urban roads.

Within the context of the revision of Directive 2015/413 concerning Cross-border Exchange of Information on road safety-related traffic offences:

- Revise the Directive to strengthen the enforcement chain, including mandatory notification by the State of Offence in accordance with their national legislation.

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[1] WHO (2008), Speed management, A road safety manual for decision-makers and practitioners, https://goo.gl/ycavKg
[2] EC Recommendation on Enforcement in the Field of Road Safety 2004/345, http://goo.gl/Vw0zhN
[3] Proposal for a regulation of the European Parliament and of the Council on type-approval requirements for motor vehicles and their trailers, and systems, components and separate technical units intended for such vehicles, as regards their general safety and the protection of vehicle occupants and vulnerable road users, amending Regulation (EU) 2018/… and repealing Regulations (EC) No 78/2009, (EC) No 79/2009 and (EC) No 661/2009, https://goo.gl/CX3e9U
[4] Proposal for a Directive of the European Parliament and of the Council amending Directive 2008/96/EC on road infrastructure safety management, https://goo.gl/7UM9aL
[5] Directive (EU) 2015/413 of the European Parliament and of the Council of 11 March 2015 facilitating cross-border exchange of information on road-safety-related traffic offences, https://goo.gl/6fWGmh
[6] ETSC (2017), Position paper: Revision of the General Safety Regulation 2009/661, https://goo.gl/MQTKyN
[7] TM Leuven (2013) on behalf of the European Commission, Ex-post evaluation of Directive 92/6/EEC on the installation and use of speed limitation devices for certain categories of motor vehicles in the Community, as amended by Directive 2002/85/EC, Page 126 https://goo.gl/ux6CGC

INTRODUCTION

Speed is a major factor in overall road safety performance.[8] Excessive and inappropriate speed is accountable for about one third of fatal collisions and is an aggravating factor in most collisions.[9,10]

2,100 lives could be saved each year if the average speed dropped by only 1 km/h on all roads across the EU.

The relationship between speed and road collisions has been studied extensively. Research findings consistently show that the likelihood of a collision and the severity of an injury increase exponentially as speed increases. A 1 km/h reduction in the mean speed results, on average, across a range of circumstances, in a 8.3% lower risk of a road death as indicated by research.[11] On this basis, 2,100 lives could be saved each year if the average speed dropped by only 1 km/h on all roads across the EU.

A recent OECD report analysed speed limit changes or the introduction of safety camera systems in ten different countries. The report shows consistently that, when speed goes down, road deaths and injuries go down. When speed increases, road deaths and injuries go up. The analysis confirms that even small reductions in mean speed can greatly reduce the risks and the severity of road collisions.[12]

With stong political support and effective coordination, speed management strategies can make a very significant contribution to achieving road safety targets.

Measures to tackle unsafe speed have been at the core of the road safety policy for decades and significant progress has been made. Yet, there is still huge potential for addressing this longstanding area of road safety at the EU and national levels.

With strong political support and effective coordination between responsible authorities, speed management strategies can make a very significant contribution to achieving road safety targets.[13]

This report comes at a crucial time. The EU's Third Mobility Package, a set of policies and legislative initiatives designed to make a major contribution to cutting road deaths and serious injuries in half by 2030, is currently working its way through the legislative process.[14]

The introduction of the overridable ISA would help to achieve a high level of compliance with speed limits and cut all road deaths by 20%.

Notably, the package includes a legislative update to minimum vehicle safety standards, which were last updated in 2009.[15] The proposed standards include mandatory fitment of overridable Intelligent Speed Assistance (ISA) on all cars, vans, buses and heavy goods vehicles. Research shows that this single technology would help to achieve a high level of compliance with speed limits and eventually cut road deaths by 20%.[16]

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[8] Aarts, L. & van Schagen, I. (2006), Driving speed and the risk of road crashes: a review, Accident Analysis and Prevention, vol. 38, issue 2, p.215-224.
[9] OECD/ECMT (2006), Speed Management, https://goo.gl/d2K5V6
[10] WHO, Road Safety Facts – Speed, https://goo.gl/akdiRW
[11] For more information read an analysis by Henk Stipdonk "The mathematical relation between crash risk and speed; a summary of findings based on scientific literature" which is available at www.etsc.eu/pinflash36
[12] OECD-ITF, Speed and Crash Risk (2018), https://goo.gl/7JKzWv
[13] WHO (2017), Managing speed, https://goo.gl/jVjowU
[14] An ETSC briefing on the EU's Third Mobility Package can be found at http://etsc.eu/mobilityiii
[15] Proposal for a regulation of the European Parliament and of the Council on type-approval requirements for motor vehicles and their trailers, and systems, components and separate technical units intended for such vehicles, as regards their general safety and the protection of vehicle occupants and vulnerable road users, amending Regulation (EU) 2018/… and repealing Regulations (EC) No 78/2009, (EC) No 79/2009 and (EC) No 661/2009, https://goo.gl/CX3e9U
[16] Calculations by Carsten, O. based on Carsten O., Fowkes M., Lai F., Chorlton K., Jamson S., Tate F., & Simpkin B. (2008), ISA-UK intelligent speed adaptation, Final Report.

The mobility package also contains an update to EU road infrastructure safety management rules.[17] The existing requirements ensure governments carry out regular road safety audits, identify high-risk sites and prioritise safety when building new roads but the rules only apply to major European roads known collectively as the Trans-European Transport Network (TEN-T).

The European Commission has proposed to extend the rules to all motorways, all "primary roads" and all non-urban roads that receive EU funding.

Designing roads for appropriate speed through infrastructure changes and setting of appropriate and safe speed limits is an important aspect of effective speed management policy. ETSC welcomes the updated proposal but would like the rules to be extended to all main urban and rural roads – where the majority of road deaths occur.

The EU is also discussing priorities for the forthcoming 5th EU Road Safety Program. The new programme should provide a strong case for tackling the main killers on the road including speed and support Member States in monitoring road safety performance indicators (SPIs) related to the key road risks. Regularly and systematically collected SPI data based on a common methodology can contribute to effective road safety strategies.

In the battle against illegal and inappropriate speed, Member States should prioritise a range of integrated measures that together bring road users to safe speed.

Experience shows there is not one single measure to reduce speeds for all road types. In the battle against illegal and inappropriate speed, Member States should prioritise a range of integrated measures that together bring road users to safe speeds. These measures include safe and credible speed limits supported by self-explaining and self-enforcing roads, vehicles that help drivers to comply with speed limits, stricter laws, effective traffic law enforcement activities and road user education. Member States should also develop safety performance indicator (SPI) targets for desirable levels of speed compliance and systematically monitor the progress towards these targets.

Part I of this report examines the latest data on speed observations and speed enforcement activities from across the EU and other countries that form part of ETSC's Road Safety Performance Index (PIN) programme. It also looks at the main measures of speed management at national level, including safe and credible speed limits and speed limit enforcement. It gives examples of policies that have led to progress in speed management and outlines areas for improvement.

Part II looks at how the EU can contribute to better speed management, including mandating vehicles that help drivers to comply with speed limits, road safety performance indicators (SPI), safer road infrastructure and improved cross-border enforcement of traffic laws.

Recommendations for national and EU policymakers are made throughout and a shorter list of priority measures is given at the end of the executive summary.

To accompany this report an analysis by Henk Stipdonk "The mathematical relation between crash risk and speed; a summary of findings based on scientific literature" is published at www.etsc.eu/pinflash36

[17] European Commission (2018), Proposal for a Directive amending Directive 2008/96/EC on road infrastructure safety management, https://goo.gl/EkRnsh

MAIN INDICATORS

The mean speed and level of non-compliance (i.e. the proportion of vehicle speed observations higher than the speed limit) in free-flowing traffic are the two most commonly collected speed-related datasets in the PIN countries. The two datasets have different potential interpretations. While the link between speed and a risk of a road collision is widely researched, the relationship between levels of compliance and collision occurrence is less well known. Levels of compliance are, on the other hand, more closely linked to road safety interventions, e.g. enforcement. They are a useful tool for policymakers to monitor the effect of their actions.

In this report PIN panelists were asked to provide data on observed mean speeds and observed speeds of different types of vehicles going above the legal speed limit in daytime in free-flowing traffic on urban roads, rural non-motorway roads and motorways between 2007 and 2017 or the latest year available.

Note: observed vehicle speeds higher than the legal speed limit tend to be lower in the daytime and higher at night for most vehicle and road types.

Speed data collection procedures still vary substantially. Countries observe speeds for different vehicle types (e.g. all traffic together, cars and vans only), use different sample sizes and apply different criteria to identify measurement locations and appropriate traffic conditions. This is why it is difficult to make comparisons between countries on mean speeds and speed limit violations. In this report, changes in mean speeds and the proportion of observed vehicle speeds higher than the speed limit on three different road types (urban roads, rural non-motorway roads and motorways) are presented.

ETSC also collected speed data for its 4th (2010) and 5th (2011) Road Safety PIN reports and the PIN Flash report 28 (2015) "Ranking EU progress on improving motorway safety".

Austria, Denmark, Finland, France, Great Britain, Ireland, Israel and Norway have a long tradition of annual country-wide monitoring of speed in free-flowing traffic. France has been monitoring speed all year round since 2001 and publishes the results in its Observatory of Speeds.[18] Some other countries have started more recently, such as Serbia, following SafetyNet recommendations. Other countries perform speed measurements occasionally, e.g. before and after major changes in legislation or in the speed limit. In Spain, measurements were made in 2010 and 2012 on motorways and autovías and in 2012 on non-motorway roads. Sweden has developed a speed index to monitor speeds combined with extensive screening surveys. Extensive speed measurements are made on the rural network every 4th year (covering the whole state road network). For the years in between, a speed index based on 83 fixed measurement points is used to monitor speed developments. In some countries, such as the Netherlands and Germany, speed data are owned and supervised by regional or state authorities, which makes it difficult to get unified national data.[19] In the Netherlands, only measurements for motorways are regularly collected and made available countrywide. Speed data in Hungary are collected on almost all roads but summarised data for different road types are not yet available.

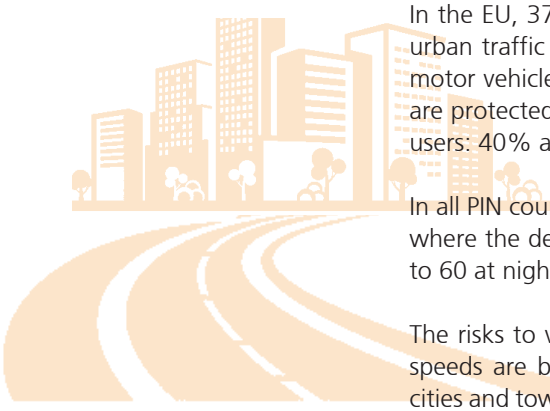
Bulgaria, Germany, Greece, Italy, Luxembourg, Latvia, Malta[20], Slovakia and Romania do not currently monitor mean speeds countrywide, which deprives them of important feedback on the effectiveness of their actions on speed management.

This report also aims to present the levels of speed enforcement activities in PIN countries. It uses as indicators the annual number of speeding tickets since 2012 per thousand inhabitants and the proportion of speeding tickets that were generated after a detection by safety cameras over the period 2012-2017. It also uses as an indicator the annual change in the number of speeding tickets since 2010.

The data used in this report were provided by the PIN panelists. The dataset used in the figures of the report are available in the Annexes. Some of the provided data could not be used in the report (e.g. short time series). The full dataset is published at www.etsc.eu/pinflash36

[18] Sécurité routière, Observatoire des vitesses, https://goo.gl/pmwg1a
[19] SafetyNet (2005), Deliverable D3.1: State of the art Report on Road Safety Performance Indicators, https://goo.gl/UEmSEq
[20] A quasi-national traffic management system is currently being implemented in Malta. It will focus on the urban-core area and consist of a number of cameras which will be used for various applications such as incident management and the monitoring of speed.

PART I
COUNTRY COMPARISON



1.1 Speed on urban roads

1.1.1 Speed limits

In the EU, 37% of all road deaths occur on urban roads.[21] An important feature of urban traffic is close and frequent interaction between unprotected road users and motor vehicles that move at higher speed, have a larger mass and whose occupants are protected. Up to 70% of all road users killed in urban traffic are vulnerable road users: 40% are pedestrians, 18% powered-two-wheeler riders and 12% cyclists.[22]

In all PIN countries the standard speed limit on urban roads is 50 km/h except Poland where the default speed limit on urban roads goes up from 50 km/h in the daytime to 60 at night.[23]

The risks to vulnerable road users associated with 50 km/h or higher motor vehicle speeds are becoming recognised by some local authorities. A growing number of cities and towns across Europe are introducing or extending 30 km/h zones, especially around schools and in the residential and shopping areas with many pedestrians and cyclists. However, speed compliance in urban areas on both 50 km/h and 30 roads is still a challenge.

1.1.2 Mixed progress in curbing driving speeds on 50 km/h roads

Fig.1 shows the annual average change in mean speed of cars and vans on urban roads with a 50 km/h legal speed limit. Among the countries that collect these data annually for a representative set of roads countrywide, the highest annual reduction in mean speed has been observed on the Irish national urban road network where the mean speed of cars decreased by 2% annually since 2007 (Fig.1). Yet, 68% of observed vehicle speeds were above the speed limit on national urban roads in Ireland in 2016 (Fig.2) and the average speed on these roads was 57 km/h.[24] At the same time Ireland saw a 1% average annual increase of the mean speed on urban residential roads where on average 10% of observed vehicle speeds were above the speed limit and the average speed was 41 km/h.[25]

The mean travelling speed has decreased annually by on average 0.8% in Norway and 0.5% in Denmark since 2007, 0.5% in Sweden since 2012 and 0.3% in France since 2009.

In Great Britain, the mean speed on urban roads has remained unchanged since 2011.

The mean speed on urban roads increased by 0.3% each year in Israel since 2009.

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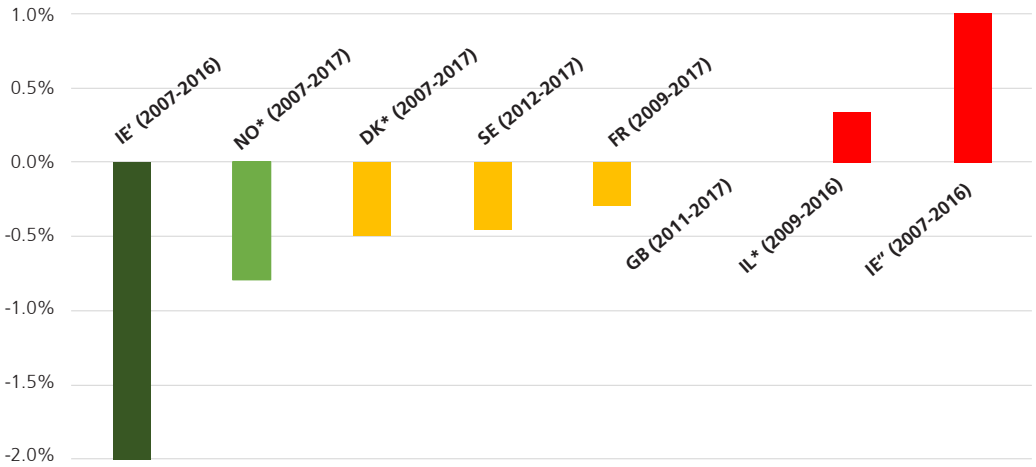
[21] European Commission, Road safety 2016, https://goo.gl/ZkCri4
[22] Ibid
[23] Information source: European Commission, Going Abroad, https://goo.gl/VsaE4n and cross-checked by PIN Panelists.
[24] National roads consist of National Primary and National Secondary roads. They account for 6% of the total road network and carry over 45% of traffic.
[25] Residential roads go through business, shopping and residential areas of cities and towns. A default speed limit of 50 km/h applies to such roads and is sometimes referred to as the "built up area".

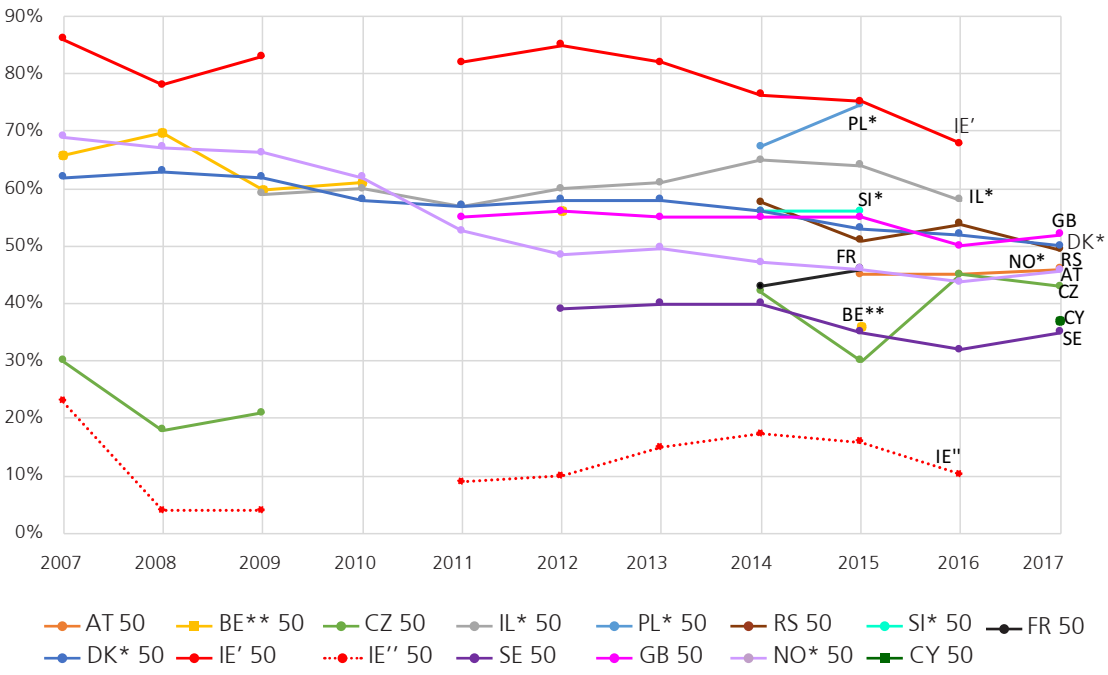
Figure 1. Average annual change (in %) in the observed mean speed of cars and vans on urban roads with a legal speed limit of 50 km/h since 2007 or the earliest available year to the latest available year based on countries' individual data collection methodologies. IL*, DK*, NO* - all traffic. IE' – national roads, cars only. IE'' – residential roads, cars only.



1.1.3 Up to 75% of observed speeds are higher than the 50 km/h speed limit

Among the countries that monitor levels of speed compliance on urban roads countrywide, between 35% and 75% of vehicle speed observations are higher than the legal speed (Fig.2). As many as 75% of observed vehicle speeds are above the legal speed limit in Poland, 68% in Ireland (national urban roads), 58% in Israel, 56% in Slovenia, 52% in Great Britain, 50% in Denmark, 49% in Serbia, 46% in Austria, France and Norway, 43% in the Czech Republic, 37% in Cyprus, 36% in Belgium, 35% in Sweden and 10% in Ireland (residential roads).

Figure 2. Proportion (in %) of observed speeds of cars and vans higher than the speed limit on 50 km/h urban roads since 2007 or the earliest available year to the latest available year based on countries' individual data collection methodologies. DK*, IL*, PL*, SI*, NO* - all traffic. IE' – national urban roads, cars only. IE'' – residential urban roads, cars only. BE** – data collected differently in 2015 compared to 2007-2010.



1.4 Lack of driving speed observations on 30 km/h urban roads

Only Austria, Belgium and Ireland provided data on levels of vehicle speed observations on roads with 30 km/h limits.

In 2015, 90% of observed vehicle speeds were above the legal limit of 30 km/h on urban roads located around schools in Belgium, resulting in a 43 km/h average speed.[26] VIAS institute, who carried out the observations, decided to measure the speed in 27 school zones that did not have any traffic calming measures. Such infrastructure measures are essential to establishing credible speed limits at 30 km/h.

As many as 73% of observed vehicle speeds were above the limit in 30 km/h zones in Austria in 2017 where appropriate traffic calming measures were in place, resulting in a 35 km/h average speed.[27]

In Ireland, 62% of observed vehicle speeds were above the 30 km/h speed limit on residential roads in 2016 and the observed mean speed was 36 km/h.

Poland: the only country in the EU where a default speed limit on urban roads at night is 60 km/h

In connection with Poland's accession to the European Union, the Polish government made a proposal to reduce the speed limit in built-up areas from 60 km/h to 50 km/h. The proposal was met with big resistance in the Polish Parliament. After extensive discussions a compromise was reached to introduce a 50 km/h legal speed limit during the day and 60 km/h at night. Since 2010 there have been two attempts to change this law, but neither of them gained political support.

"High speed limits on motorways and in built-up areas, as well as, since 2016, the removal of the right of the Municipal Guard to control the speed of vehicles using mobile and stationary safety cameras are examples of the recent approach to speed management in Poland. In official reports speed is always quoted as one of the two most important risk factors, but in practice the efforts are not sufficient. In my opinion, this is one of the main reasons for Poland's poor road mortality ranking in the EU."
Ilona Buttler, Motor Transport Institute (ITS), Poland

[26] 27 school zones with a permanent 30 km/h speed limit. Speeds were measured in locations without special environmental elements such as traffic calming measures.
[27] 23 measuring sites, 7,500 vehicles.

1.2 Speed on rural non-motorway roads

1.2.1 Speed limits

55% of all road deaths in the EU occur on rural non-motorway roads[28] which are often designed as single carriageways with no median barrier to separate opposing traffic flow. Due to the relatively low level of infrastructure safety, high speeds and a composition of different road users, rural roads are considered to be the most dangerous roads in terms of design.

According to the Safe System approach, safe speed limits on rural roads without a median barrier should not be higher than 70 km/h and no higher than 100 km/h on roads with median and side barriers. In this context safe speed is such that 90% of the collisions that would occur at those recommended speeds would not result in a serious injury.[29] The design of these roads should also match a credible speed limit.

Standard speed limits on rural non-motorway roads vary across EU Member States (Table 1). Most of the PIN countries with a significantly lower road mortality rate than the EU average of 50 deaths per million inhabitants apply 70 km/h or 80 km/h standard speed limits on rural roads. These countries are Sweden (25 deaths per million inhabitants), Norway (20), Switzerland (27), Denmark (32), the Netherlands (36), Israel (36), Finland (41) and Malta (41). As a response to a stagnation in road safety progress, the standard speed limit on single carriageway rural roads in France was lowered from 90 km/h to 80 km/h in July 2018.

In more than half of the PIN countries, the standard speed limit on rural roads is 90 km/h. In Austria, Germany, Ireland (national roads) and the UK, the general speed limit is set at 100 km/h.

Table 1. Standard speed limits on single carriageway rural non-motorway roads in the PIN countries. [30] *France – the standard 80 km/h speed limit was introduced as from July 2018. *Spain – the standard 90 km/h speed limit was introduced in January 2019.

Single carriageway rural non-motorway roads			
70 km/h	**80 km/h**	**90 km/h**	**100 km/h**
Belgium Flanders	Cyprus	Belgium Wallonia	Austria
Sweden	Denmark	Bulgaria	Germany
	Finland	The Czech Republic	Ireland (national roads)
	France*	Estonia	UK (97 km/h)
	Ireland (non-national roads)	Greece	
	Malta	Croatia	
	Netherlands	Hungary	
	Switzerland	Italy	
	Israel	Luxembourg	
	Norway	Latvia	
	Serbia	Lithuania	
		Poland	
		Portugal	
		Romania	
		Slovenia	
		Slovakia	
		Spain*	

[28] European Commission (2017), Rural roads outside urban areas, https://goo.gl/3mM9GC
[29] SWOV, Speed and speed management, https://goo.gl/y1N75r
[30] Information source: European Commission, Going Abroad, https://goo.gl/VsaE4n and cross-checked by PIN Panelists.

1.2.2 Lack of progress in curbing driving speeds

There has been an overall lack of progress in reducing mean speeds on rural non-motorway roads in the countries that could provide data (Fig.3).

In Norway, the mean speed decreased by 0.4% each year on roads with a 70 km/h speed limit (mean speed went down from 71 km/h to 68.3 km/h) and by 0.3% on 80 km/h roads (mean speed went down from 78.8 km/h to 76.1 km/h) since 2007. In Denmark, speeds decreased by 0.3% on average each year from 84.7 km/h in 2007 to 82 km/h in 2016.

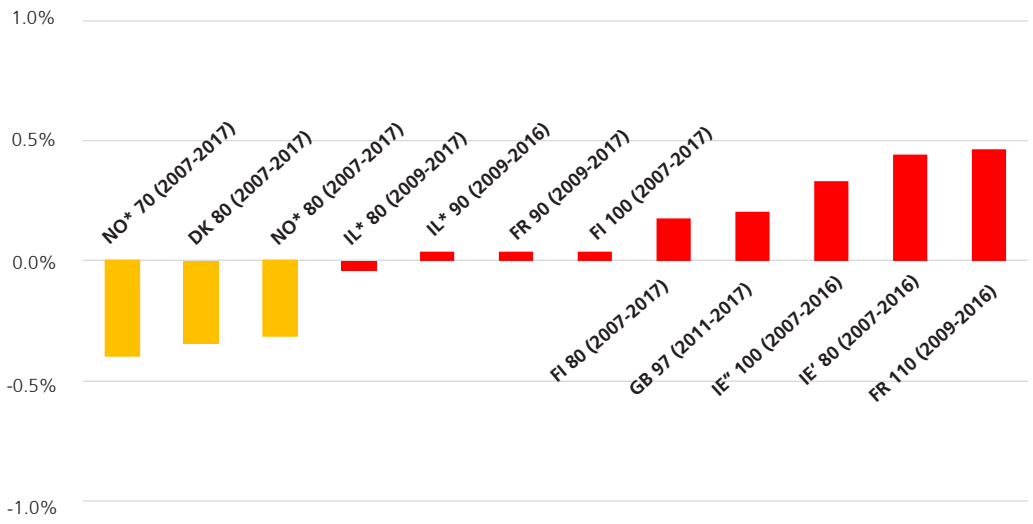
In Israel, the average speed has remained unchanged on rural non-motorway roads since 2009.

In France, the average speed on rural roads with a 90 km/h speed limit has remained unchanged since 2009, while rural roads with a 110 km/h speed limit saw an average annual increase of 0.5% in mean driving speed every year since 2009.

In Finland, the average speed on rural roads with a 100 km/h speed limit has remained unchanged since 2007 and rural roads with an 80 km/h speed limit saw an average annual increase of 0.2%.

The average driving speed on rural roads has increased by 0.2% in Great Britain, by 0.3% (regional roads) and 0.4% (national roads) in Ireland since 2007.

Figure 3. Average annual change (in %) in the observed mean speed of cars and vans on rural non-motorway roads since 2007 or the earliest available baseline to latest available year based on countries' individual data collection methodologies.
IL*, NO* – all traffic.
IE' – regional roads, cars only.
IE'' – primary national roads, cars only.



1.2.3 Up to 63% of observed speeds above the speed limit

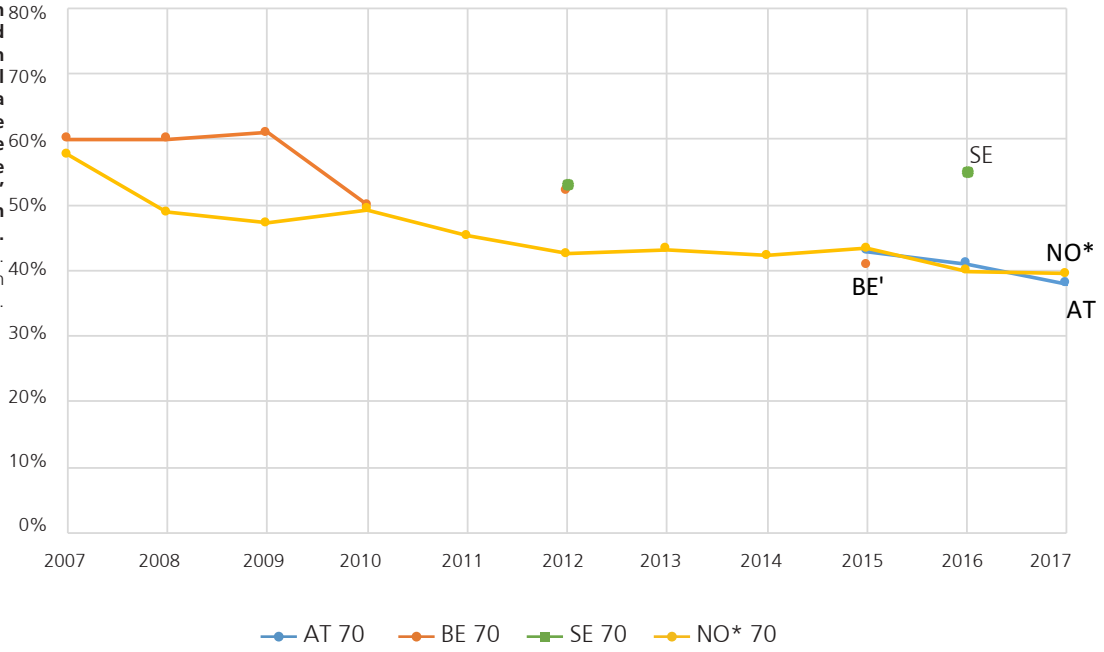
Among the countries monitoring speed on rural non-motorway roads, between 9% to 63% of vehicle speed observations are higher than the speed limit (Fig.4.1 to 4.4).

Amongst other factors, the level of speed compliance depends on road design, the speed limit and the level of speed enforcement activities. Rural roads with similar design characteristics might have different legal speed limits in different countries. In countries with lower legal speed limits, levels of observed vehicles going above the speed limit could be higher than in those countries where rural roads have similar design characteristics but higher speed limits.

Speed limits should be safe and credible and supported by the design of the road taking into account its function and use.

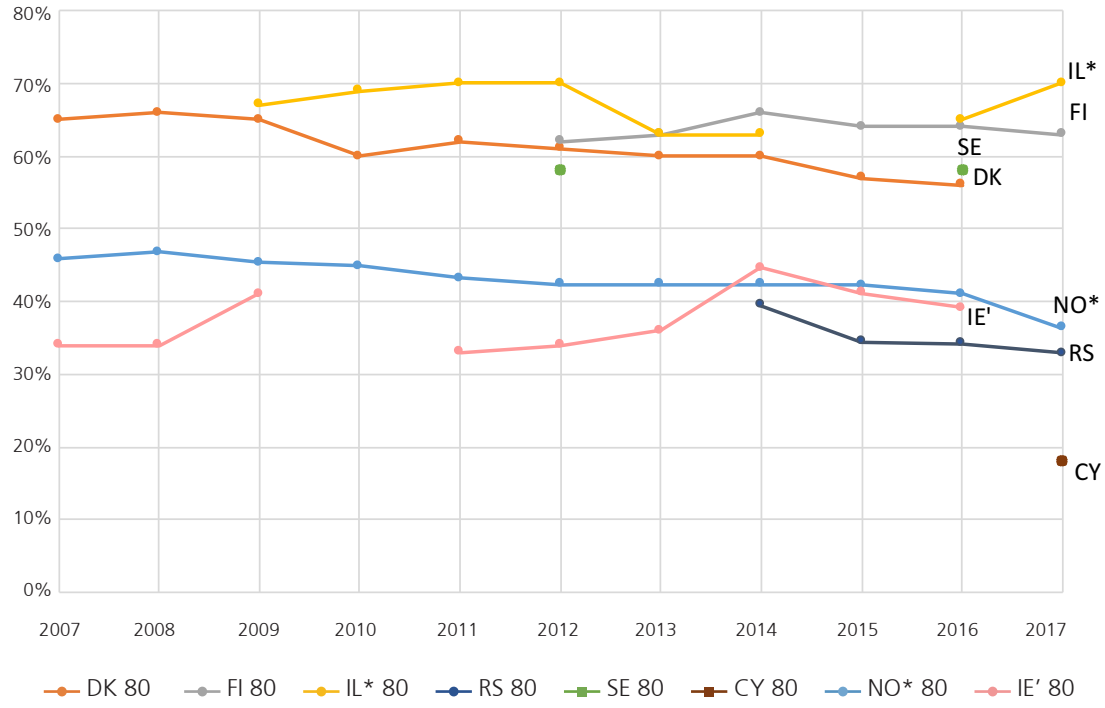
On rural non-motorway roads with a 70 km/h speed limit, 55% of observed vehicle speeds were higher than the speed limit in Sweden, 41% in Belgium, 40% in Norway and 38% in Austria (Fig. 4.1).

Figure 4.1 Proportion (in %) of observed car and van speeds higher than the speed limit on rural non-motorway roads with a speed limit of 70 km/h since 2007 or the earliest available year to the latest available year based on countries' individual data collection methodologies.
NO* - all traffic.
BE' - data collected differently in 2015 compared to 2007-2012.



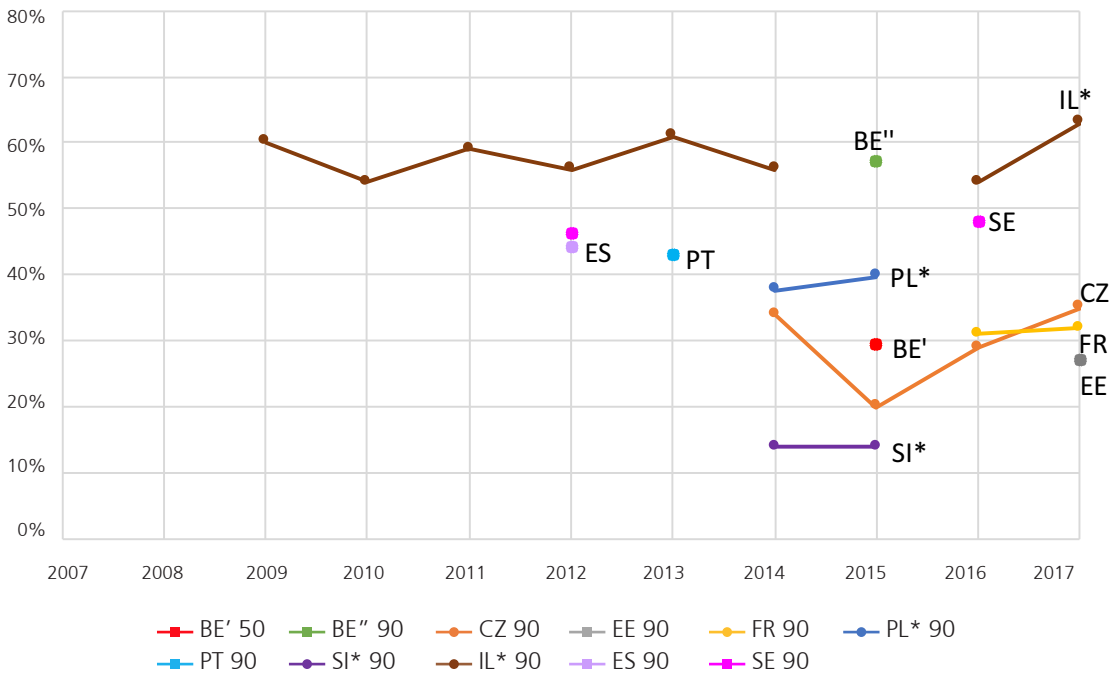
On rural non-motorway roads with an 80 km/h speed limit, 70% of observed vehicle speeds were higher than the speed limit in Israel, 63% in Finland, 58% in Sweden, 56% in Denmark, 39% in Ireland, 36% in Norway, 33% in Serbia and 18% in Cyprus (Fig. 4.2).

Figure 4.2 Proportion (in %) of observed car and van speeds higher than the speed limit on rural non-motorway roads with a speed limit of 80 km/h since 2007 or the earliest available year to the latest available year based on countries' individual data collection methodologies.
IL*, NO* - all traffic.
IE' – cars only, regional roads.



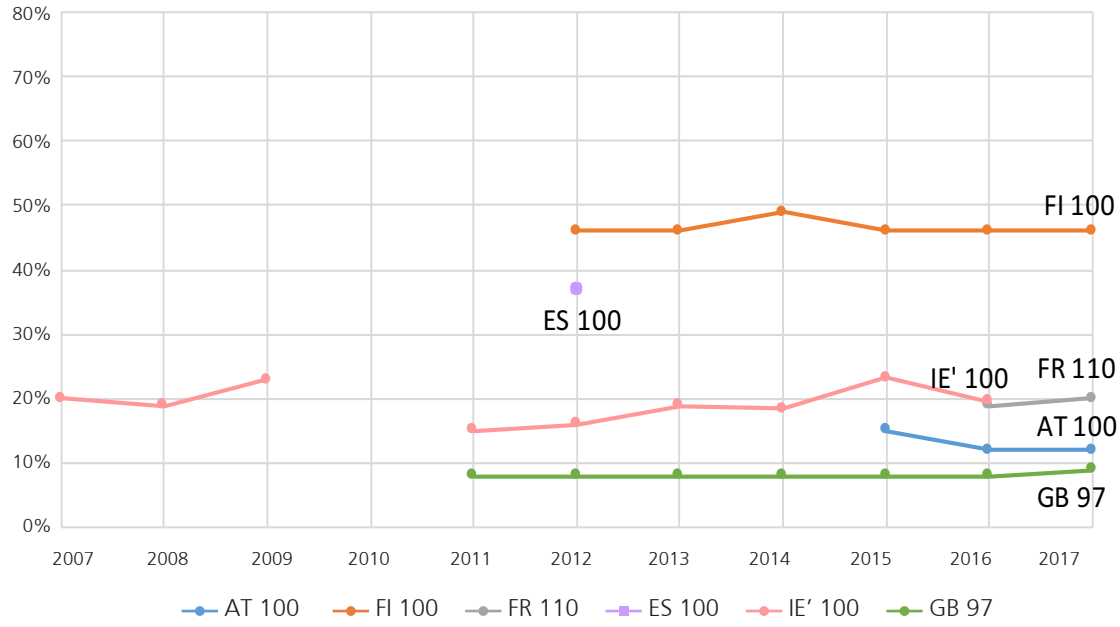
On rural non-motorway roads with a 90 km/h speed limit, 63% of observed vehicle speeds were higher than the speed limit in Israel, 57% in Belgium (four-lane roads), 48% in Sweden, 44% in Spain, 43% in Portugal, 40% in Poland, 35% in the Czech Republic, 32% in France, 29% in Belgium (two-lane roads), 27% in Estonia and 14% in Slovenia (Fig. 4.3).

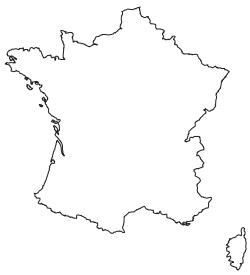
Figure 4.3 Proportion (in %) of observed car and van speeds higher than the speed limit on rural non-motorway roads with a speed limit of 90 km/h since 2007 or the earliest available year to the latest available year based on countries' individual data collection methodologies.
IL*, SI*, PL* - all traffic.
BE' – cars on two-lane rural non-motorway roads,
BE'' – cars on four-lane rural non-motorway roads.



On rural non-motorway roads with a 100 km/h speed limit, 46% of observed vehicle speeds were higher than the speed limit in Finland, 37% in Spain, 20% in Ireland and France, 12% in Austria and 9% in Great Britain (Fig. 4.4).

Figure 4.4 Proportion (in %) of observed car and van speeds higher than the speed limit on rural non-motorway roads with a speed limit of 100 km/h and 110 km/h since 2007 or the earliest available year to the latest available year based on countries' individual data collection methodologies.
IE' – cars only, national primary roads.





FR

France: a reduction of the legal speed limit from 90 km/h to 80 on single carriageway rural roads is projected to reduce road deaths

In the last four years France has struggled to reduce the number of road deaths. As a response to the lack of road safety progress, the French government had announced a series of new measures, including lowering the standard speed limit from 90 km/h to 80 on two-lane rural roads with no separating guard rail. The measure became effective on 1 July 2018. 63% of all road deaths occur on the country's rural roads. The government estimates that the lower speed limit could prevent 350 to 400 deaths a year if substantially complied with.[31]

A sound evaluation of the effectiveness of the lower speed limit will require several years of data - and will be done in two years time. However, a preliminary study by the French research institute Cerema and the French Road Safety Observatory[32] shows that the measure has already started to bring positive results. Based on provisional data, 116 fewer road deaths occured on rural roads limited to the new 80 km/h speed limit compared to 2013-2017 average on the same roads for months July to December. The same comparison for the rest of the French road network shows an improvement of only 11 deaths, which is not a significant change.

The average light vehicle travelling speed decreased by 3.9 km/h on rural roads affected by the new speed limits. However, speed compliance remains a challenge as 55% of observed vehicle speeds were above the 80 km/h speed limit, out of which 34% were between 80 km/h and 90 and 21% were above 90 km/h.[33]

Drivers tend to overestimate the time lost by a stricter limit and the time gained by not respecting the speed limit.

The decision to lower the speed limit on rural roads has sparked a sadly predictable backlash from groups representing some drivers who thought that due to the new measure they will lose five to ten minutes of travel time on their regular daily trips. According to the data collected by Cerema, the increase in travel time after the implementation of the measure was just one second per km driven, on average. To lose five minutes, one would need to drive 300 km.[34] In general, drivers tend to overestimate the time lost by lower speed limits and the time gained by not respecting the speed limit. This concern is being addressed by the French government with a dedicated communications campaign. The campaign also points out that travelling at the lower speed limit reduces the stopping distance by 13 metres.[35]

ES

Spain: lowering of the legal speed limit on rural roads from 100 km/h to 90 to reduce road deaths

From 29 January 2019, the new default speed limit on all rural roads in Spain will be 90 km/h. Before, the default speed limit on rural roads was 100 km/h when the width of the hard shoulder was 1.5 metres or greater, and 90 km/h otherwise. The new measure will affect more than 10,000 km of roads.

Each year more than a thousand people are killed in collisions on Spanish rural roads. The new measure is expected to significantly reduce this number.

[31] Comité Interministériel de la sécurité routière (01.2018), Sauvons plus de vies sur nos routes, https://goo.gl/MHGWbH
[32] Sécurité routière, Provisional road safety results 2018 and notes on the impact of the speed limit reduction to 80 km/h, https://goo.gl/kzhyoM
[33] Cerema (January 2019), Abaissement de la vitesse maximale autorisée à 80 km/h Évaluation – Premiers éléments, https://goo.gl/ZGmY8c
[34] Ibid
[35] Several awareness raising materials from Sécurité routière, the French road safety governmental body, are available on their dedicated webpage "Baisse de la vitesse maximale autorisée de 90 à 80 km/h", https://goo.gl/VUc2PY

BE

Flanders: from 90 km/h to 70 on rural roads

In the past decade local road authorities in Flanders (northern Belgian region) started lowering the speed limits on some stretches of rural road from 90 km/h to 70.

A few years ago setting the speed limits on public rural roads became a regional competence in Belgium. Thus the Flanders region decided to reduce the default speed limit on rural roads from 90 km/h to 70 in 2017. This was due to a number of factors, including road safety concerns, a Safe System approach, more people living in rural areas and growing traffic volume on these roads.

AT

Austria: the standard speed limit of 100 km/h on rural roads too high for road conditions

65% of all road deaths in Austria occur on roads outside urban areas.[36] The standard legal speed limit on these roads is 100 km/h which is among the highest in the EU. The Austrian Research Association Road-Rail-Traffic analysed rural roads in Austria and concluded that the general speed limit of 100 km/h is too high for the level of protection offered by the infrastructure. The authors suggested that the standard speed limit should be reduced to 80 km/h with a 100 km/h limit remaining only on roads with high infrastructure safety standards[37], e.g. with separating guard rails to prevent frontal collisions, which are fatal at these speeds.

DE

Germany: local authorities can apply lower speed limits on rural roads than the standard 100 km/h limit

Lower speed limits than the 100 km/h limit are often set by the local authorities on German rural roads. The German Road Safety Council Board's Resolutions ask for a compulsory speed limit of 80 km/h on narrow rural roads up to 6 meters width. Rural roads without side barriers where the distance between trees and the road is smaller than 7.5 meters are extremely dangerous. On these roads a maximum speed limit of 70 km/h should be introduced.
Jacqueline Lacroix, German Road Safety Council (DVR)

[36] European Commission, ERSO, Traffic Safety Basic Facts 2017, Roads outside urban areas, https://goo.gl/moyyhz
[37] W. J. Berger, R.Risser (2011), Argumentarium pro und contra Tempolimit 80/100 km/h auf Österreichs Landstraßen, https://goo.gl/aXBvi2

1.3 Speed on motorways

1.3.1 Speed limits

Motorways are high volume, high speed roads, but they are safer than other types of roads by design and regulation. On average, 8% of all road deaths in the EU occur on motorways.[38]

As an example, motorways in the Netherlands account for around 50% of all traffic volume and 15% of all road deaths.

The general speed limit for motorways in the PIN countries ranges from 100 km/h to 130.[39] Bulgaria and Poland have a speed limit of 140 km/h. While data in Bulgaria are not available, Poland has the second highest number of road deaths per distance travelled on motorways in the EU.[40] Austria is currently testing a 140 km/h speed limit on two stretches of its motorways. Germany does not have a general speed limit on around 70% of motorways but the recommended maximum speed is 130 km/h.[41]

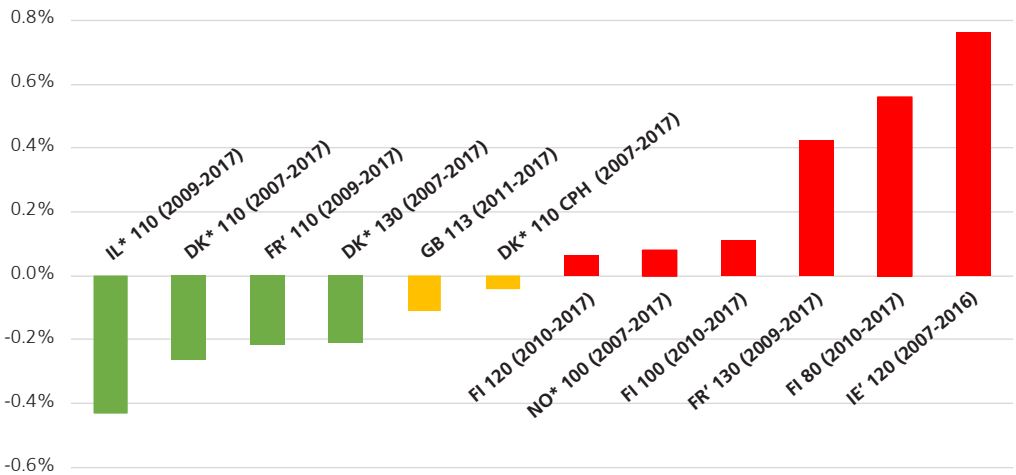
Poland has a 140 km/h speed limit on motorways and the second highest number of road deaths per distance travelled on these roads in the EU.

1.3.2 Mixed progress in curbing driving speeds

In countries providing data concerning speeds on motorways, progress in terms of annual change in average speed on motorways is mixed (Fig.5). Since 2009, in France the average driving speed has decreased by 0.2% each year on 110 km/h motorways but average driving speed on 130 km/h motorways increased by over 0.4% annually. Since 2007, the average driving speed went down annually by 0.3% each year in Denmark on 130 km/h motorways and by 0.2% on 110 km/h motorways while average speed remained unchanged on motorways around Copenhagen. In Great Britain, the observed mean speed decreased by on average 0.1% annually since 2011.

In Finland, the average driving speed increased by 0.1% each year on 120 km/h and 100 km/h motorways and by 0.6% on 80 km/h motorways since 2010. In Norway, average driving speeds increased by 0.1% and in Ireland by 0.8% annually since 2007.

Figure 5. Average annual change (in %) in the observed mean speed of cars and vans on motorways since 2007 or the earliest available baseline to latest available year based on countries' individual data collection methodologies. DK*, IL*, NO* – all traffic. FR', IE' – cars only.



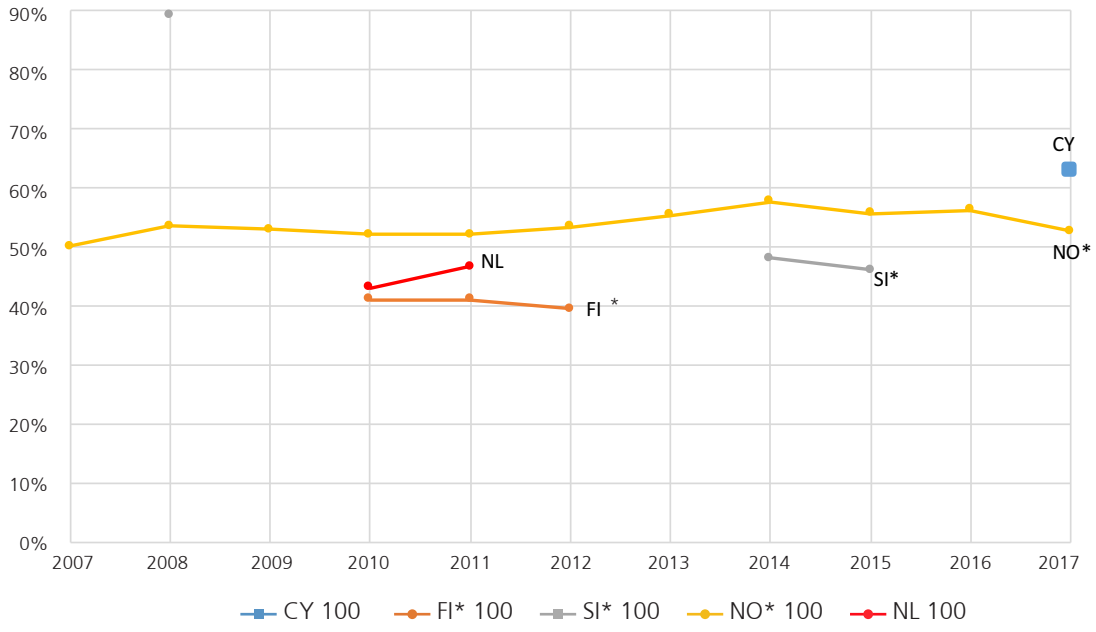
[38] ETSC (2015), PIN Flash report 28, Ranking EU progress on improving motorway safety, https://goo.gl/5vSqtK
[39] 130 km/h: Austria, the Czech Republic, Denmark, France, Greece, Croatia, Hungary, Italy, Luxembourg, Lithuania, the Netherlands, Romania, Serbia, Slovenia, Slovakia.
120 km/h: Belgium, Bulgaria, Spain, Finland, Ireland, the Netherlands, Portugal, Switzerland.
110 km/h: the Czech Republic, France (in wet conditions), Hungary, Italy (in wet conditions), Lithuania (winter months), Sweden, Slovenia, the UK (113 km/h), Israel, Norway.
100 km/h: Cyprus, Finland (winter months), the Netherlands, Portugal, Switzerland, Norway.
80 km/h: Finland (winter months).
[40] ETSC (2015), PIN Flash report 28, Ranking EU progress on improving motorway safety, https://goo.gl/5vSqtK
[41] Bast (2015), Tempolimits auf Bundesautobahnen 2015, https://goo.gl/V9mmV2

1.3.3 Up to 59% of observed speeds are above the speed limit

Among the countries monitoring speed on motorways, between 23% and 59% of observed vehicle speeds are higher than the speed limit (Fig.6.1 to 6.4).

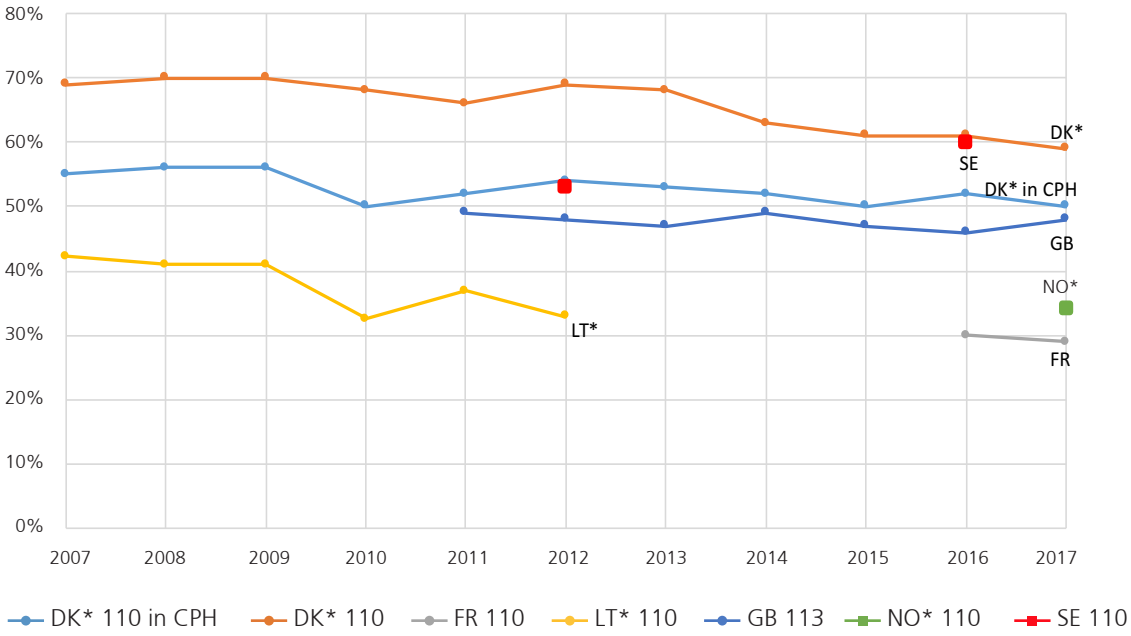
63% of observed vehicle speeds in free-flowing traffic are above the speed limit on motorways with a 100 km/h speed limit in Cyprus, 53% in Norway, 47% in the Netherlands, 46% in Slovenia and 40% in Finland (Fig. 6.1)

Figure 6.1 The proportion (in %) of observed car and van speeds higher than the speed limit on motorways with a speed limit of 100 km/h since 2007 or the earliest available baseline to latest available year based on countries' individual data collection methodologies.
NO*, SI*, FI* – all traffic.



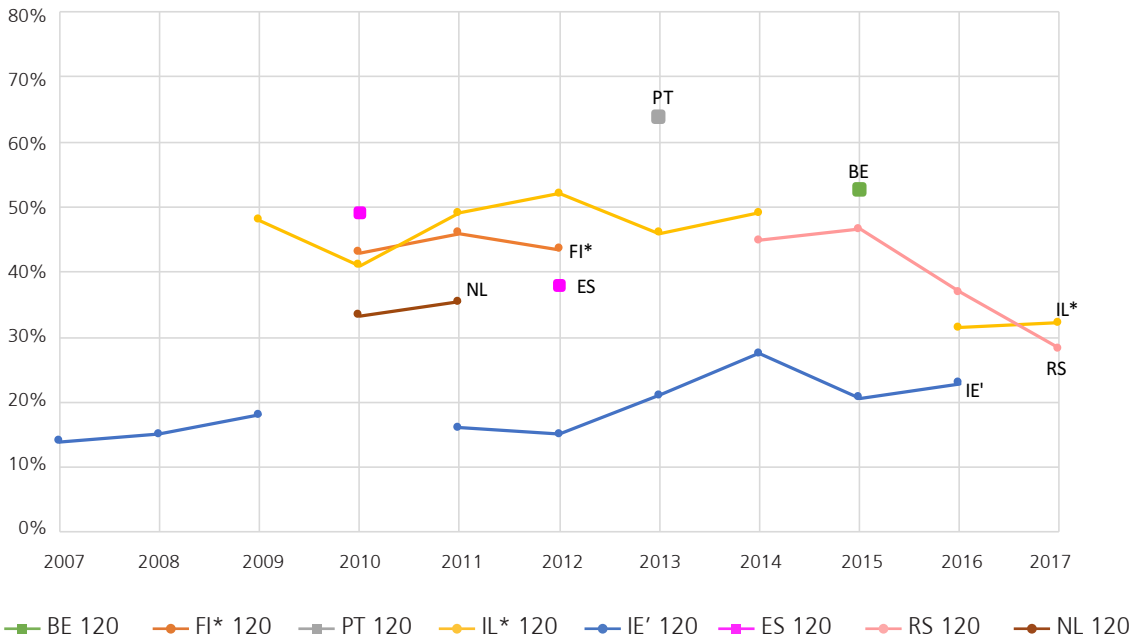
On motorways with a 110 km/h speed limit, 60% of observed vehicles were higher than the speed limit in Sweden, 59% (outside the Copenhagen area) and 50% (inside the Copenhagen area) in Denmark, 48% in Great Britain, 34% in Norway, 33% in Lithuania and 29% in France (Fig 6.2).

Figure 6.2 The proportion (in %) of observed car and van speeds higher than the speed limit on motorways with a speed limit of 110 km/h since 2007 or the earliest available baseline to latest available year based on countries' individual data collection methodologies.
DK*, LT*, NO* – all traffic.



On motorways with a 120 km/h speed limit, 64% of observed vehicle speeds were higher than the speed limit in Portugal, 53% in Belgium, 44% in Finland, 38% in Spain, 35% in the Netherlands, 32% in Israel, 28% in Serbia and 23% in Ireland (Fig. 6.3).

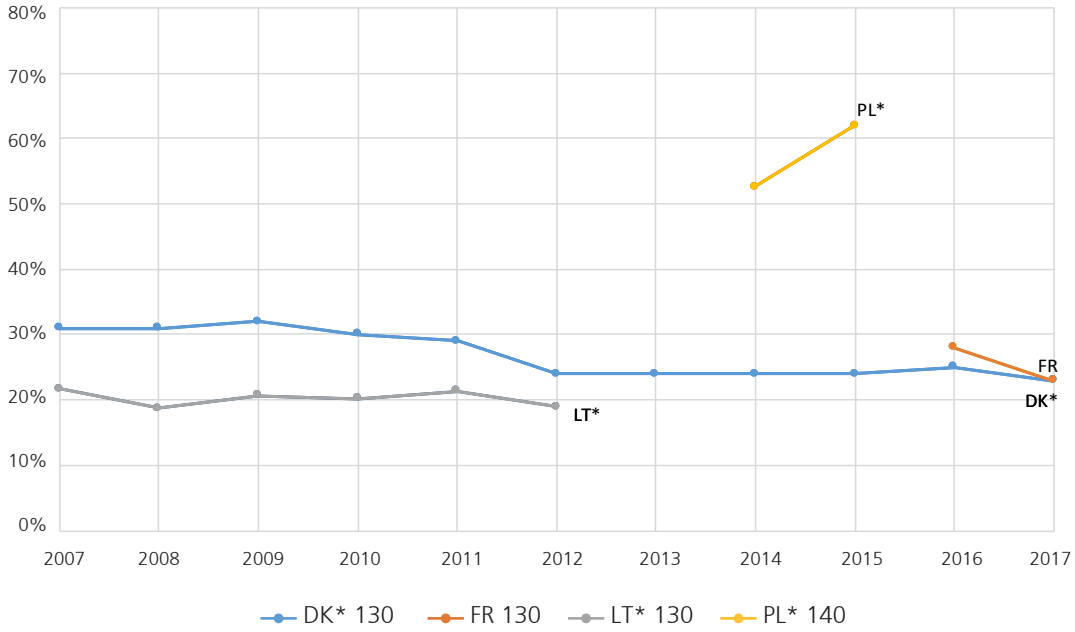
Figure 6.3 The proportion (in %) of observed car and van speeds higher than the speed limit on motorways with a speed limit of 120 km/h since 2007 or the earliest available baseline to latest available year based on countries' individual data collection methodologies.
IL*, FI* – all traffic.
IE' – cars only.



On motorways with a 140 km/h speed limit, as many as 62% of observed vehicle speeds were higher than the speed limit in Poland (Fig. 6.4). The example of Poland illustrates that raising speed limits does not improve compliance, contrary to popular beliefs.

23% of observed vehicle speeds are above the speed limit of 130 km/h in Denmark and France and 19% in Lithuania (Fig. 6.4).

Figure 6.4 The proportion (in %) of observed car and van speeds higher than the speed limit on motorways with a speed limit of 130 km/h and 140 km/h since 2007 or the earliest available baseline to latest available year based on countries' individual data collection methodologies.
DK*, LT*, PL* – all traffic.



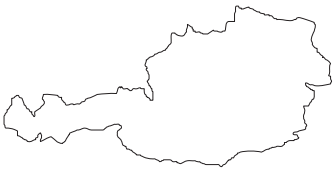
PL

Poland: 62% of observed vehicle speeds on motorways are above the legal speed limit of 140 km/h

The proposal to increase the legal speed limit on motorways from 130 km/h to 140 and on dual carriageway expressways from 120 km/h to 130 was submitted by the senate, the second chamber of the Polish parliament, in 2010. According to the senators, the modernisation of the road network in Poland, which has been partly financed by EU funds, has led to major improvements in motorway and expressway infrastructure and this, in turn, enabled driving at higher speeds. The proposal was adopted by the parliament.

"The fact that 62% of observed speeds on motorways are above the legal speed limit of 140 km/h is alarming. In addition to a very high legal speed limit and excessive driving speeds, there are challenges with traffic law enforcement. Very few police officers are on duty on these high-speed roads. Moreover, motorways and expressways are not covered by safety cameras."

"The traffic volume on motorways and expressways is growing, there is also an increase in the number of collisions, road deaths and injuries. Hopefully, the data collected in this ETSC report will persuade the Polish government to undertake initiatives to reduce the legal speed limit on motorways and enforce it."
Ilona Buttler, Motor Transport Institute (ITS), Poland



AT

Austria: controversial trial raising the speed limit from 130 km/h to 140 on motorways

In August 2018, the Austrian government started a controversial experiment by raising the speed limit from 130 km/h to 140 on two stretches of one of the country's main motorways. The trial will run for one year on a total length of 120 km. At the end of the trial period it will be decided whether to extend the 140 km/h speed limit to the entire motorway network. By going 10 km/h faster on one of the affected motorway stretches of 60 km road length, drivers will save two minutes of their travel time in free flowing traffic conditions. For marginal time saving gains, Austria risks seeing an increase in the number of road deaths and serious injuries.

For marginal time saving gains, Austria risks seeing an increase in the number of road deaths and serious injuries

IL

Israel: reductions in mean speed on motorways due to congestion

The total length of motorways in Israel is less than 300 km, whereas they carry very high and still growing traffic volumes.

"Over the recent years, it was increasingly difficult to find free-flow day-time traffic for motorway sections to be selected for the national speed survey. The mean travel speed on motorway in Israel decreased due to increasing traffic."
Victoria Gitelman, Road Safety Research Center – Technion, Israel

SETTING SPEED LIMITS

Recommendations to Member States

- Encourage local authorities to adopt zones with a speed limit of 30 km/h in residential areas and other areas used by many pedestrians and cyclists and promote traffic calming measures.
- Establish clear urban and rural road hierarchies which better match road function to speed limit, layout and design based on the principles of the Safe System approach.
- Regularly review whether speed limits match the road function and design, and adapt road design if not.

Recommendations to EU institutions

- Create an EU fund to support priority measures such as for cities to introduce 30 km/h zones (particularly in residential areas and where there are a high number of VRUs) and to invest in speed management on high risk roads which carry large flows of traffic.

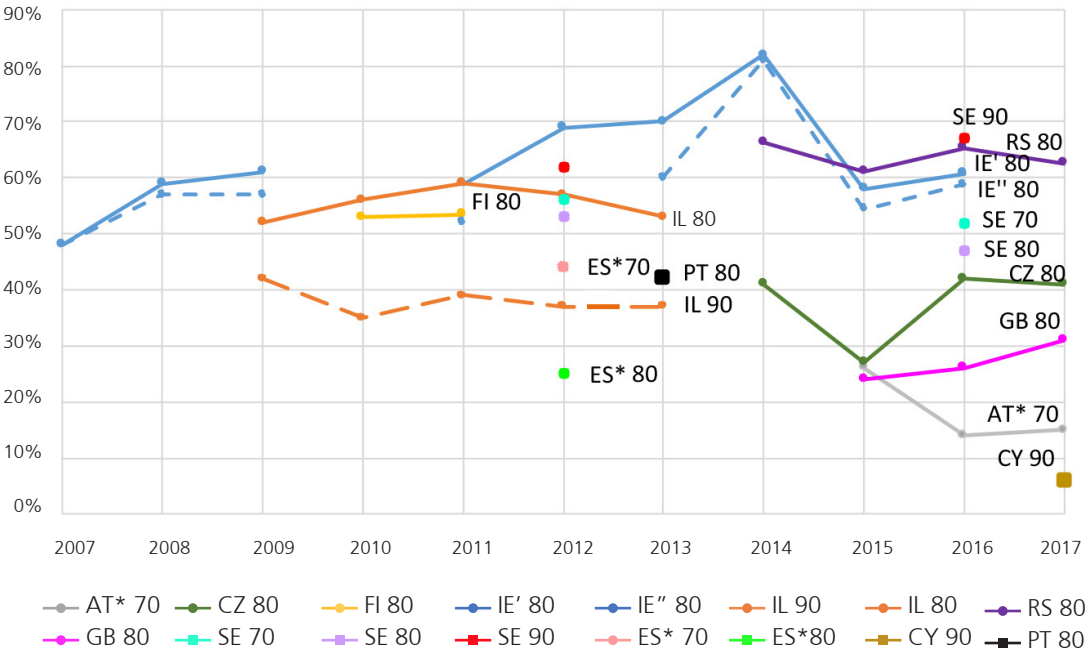
1.4 Speed of heavy goods vehicles

4,000 people lose their lives in collisions involving heavy goods vehicles (HGVs) each year in the EU.[42] Because of their large mass, a collision with an HGV is likely to cause severe consequences to other road users. Speed management for HGVs is therefore a vital component of road safety.

Directive 2002/85/EC[43] requires the use of top speed limitation devices with the maximum speed limit set at 90 km/h for all vehicles over 3500 kg. However, these top speed limitation devices do not prevent HGVs from speeding at lower speeds, nor on motorways, as in half of the EU countries the maximum legal speed limit on motorways for HGVs is 80 km/h or less[44]. Speed measurements reveal that in Sweden 87% of observed HGV speeds on motorways are above the speed limit, 20% in Cyprus and Serbia and 16% in Ireland.

In Sweden, up to 67% of observed HGV speeds on rural non-motorway roads are higher than the speed limit, 63% in Serbia, 61% in Ireland, 53% in Israel and Finland, 44% in Spain[45], 41% in the Czech Republic, 42% in Portugal, 31% in Great Britain, 15% in Austria and 6% in Cyprus (Fig. 7).

Figure 7. The proportion (in %) of observed heavy goods vehicle speeds higher than the speed limit on rural non-motorway roads since 2007 or the earliest available baseline to latest available year based on countries' individual data collection methodologies.
AT*, ES* – data on HGVs and buses together.
IE' – dual carriageway roads.
IE'' – national primary two lane roads.

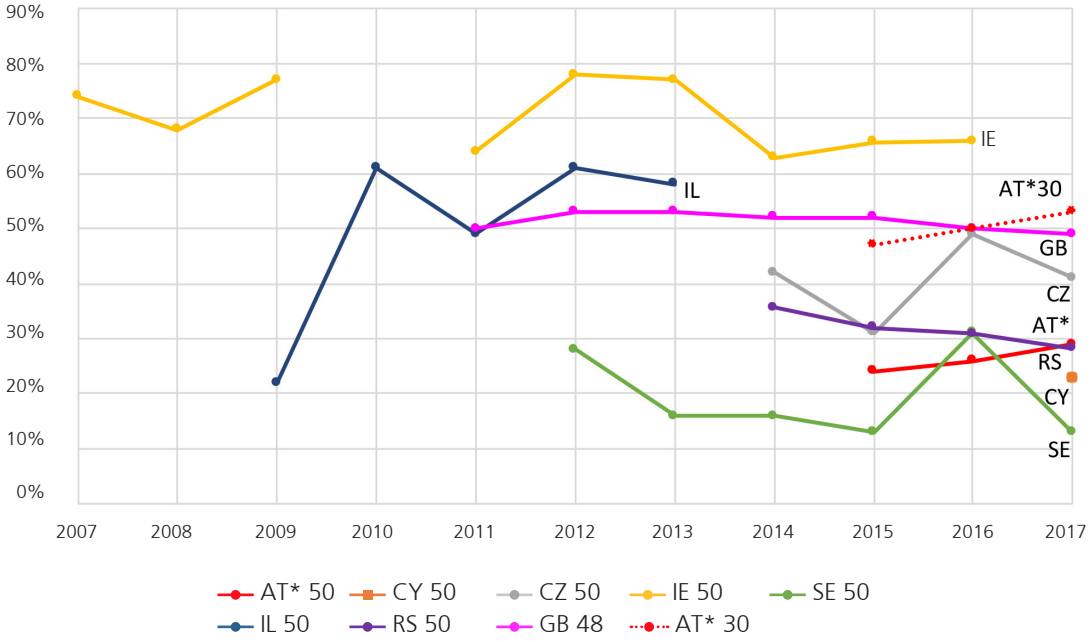


Speed measurements reveal that in Sweden 87% of observed HGV speeds on motorways are above the speed limit, 20% in Cyprus and Serbia and 16% in Ireland.

[42] European Commission, ERSO, Traffic Safety Basic Facts 2017, Heavy Goods Vehicles and Buses, https://goo.gl/RbLT8V
[43] Directive 2002/85/EC of the European Parliament and of the Council of 5 November 2002 amending Council Directive 92/6/EEC on the installation and use of speed limitation devices for certain categories of motor vehicles in the Community, https://goo.gl/ePMYHy
[44] Countries where legal speed limit for HGVs is 80 km/h or less: Austria, Cyprus, the Czech Republic, Germany, Denmark, Spain, Finland, Hungary, Italy (HGV>12t), Luxembourg, Lithuania, Malta, the Netherlands, Poland, Slovenia, Switzerland, Israel, Norway.
[45] Spain: when the legal speed limit for an HGV is 70 km/h, it is 80 km/h for a bus. When the legal speed limit for an HGV is 80 km/h it is 90 km/h for a bus.

In Ireland, as many as 66% of observed HGV speeds on urban roads are higher than the speed limit, 58% in Israel, 49% in Great Britain, 41% in the Czech Republic, 29% in Austria, 28% in Serbia, 23% in Cyprus and 13% in Sweden (Fig. 8). 53% of observed HGV speeds are higher than the limit in Austria on 30 km/h roads.

Figure 8. The proportion (in %) of observed heavy goods vehicle speeds on urban roads higher than the speed limit since 2007 or the earliest available baseline to latest available year based on countries' individual data collection methodologies. AT* – data on HGVs and buses together.



REDUCING SPEED OF HEAVY GOODS VEHICLES

Recommendation to EU institutions

Within the context of the update of the EU General Safety of Motor Vehicles Regulation and the Pedestrian Safety Regulation:

- Fit all new heavy goods vehicles (HGVs) and buses with an overridable Intelligent Speed Assistance system in line with the recommendations of the evaluation study conducted on behalf of the European Commission.[47] The system should be overridable up to 90 km/h for heavy goods vehicles and 100 km/h for buses (in line with existing EU legislation on speed limiters).
- Mandate Autonomous Emergency Braking (AEB) systems with pedestrian and cyclist detection for all new types of vehicles including new heavy goods vehicles.

For more information and ETSC recommendations for Heavy Goods Vehicles read ETSC's PIN Flash 24 (2013) "Towards Safer Transport of Goods and Passengers in Europe".
The report is available at www.etsc.eu/PIN

[46] When the legal speed limit for an HGV is 70 km/h, it is 80 km/h for a bus. When the legal speed limit for an HGV is 80 km/h it is 90 km/h for a bus.

[47] TM Leuven (2013) on behalf of the European Commission, Ex-post evaluation of Directive 92/6/EEC on the installation and use of speed limitation devices for certain categories of motor vehicles in the Community, as amended by Directive 2002/85/EC, Page 126 https://goo.gl/ux6CGC

Motorcycles are not required to have a licence plate in the front and therefore remain unidentified by safety cameras that photograph from the front.

1.5 Speed of motorcycles

Motorcycle riders are the road user group with the highest risk, i.e. the highest number of injuries and road deaths per distance travelled. When related to the number of kilometres travelled, a motorcyclist is, depending on the country, between 9 to 30 times more likely to be killed in a road collision than a car driver. The relative risk for a motorcycle rider of being seriously injured is even higher.[48]

In Sweden, up to 66% of observed speeds of motorcycle riders on rural non-motorway roads are higher than the speed limit, 57% in Israel, 52% in Belgium, 26% in Great Britain and 21% in Cyprus.

In Serbia, 62% of observed speeds of motorcycle riders on motorways are higher than the speed limit, 53% in Sweden, 42% in Cyprus and 37% in Israel.

Motorcycles are not required to have a licence plate in the front and therefore remain unidentified by safety cameras that photograph from the front.

REDUCING SPEED OF MOTORCYCLES

Recommendation to Member States

- Install safety cameras able to detect speeding motorcycle riders and enforce their compliance with speed limits.

For more information and ETSC recommendations for motorcycles read ETSC's PIN Flash 7 (2008) "Reducing motorcyclists deaths in Europe" and PIN Flash 19 (2011), "Unprotected road users left behind in efforts to reduce road deaths".
The reports are available at www.etsc.eu/PIN

1.6 National guidelines for setting safe speed limits

The EU has endorsed the Safe System approach which recognises human mistakes and requires the road traffic management system to limit speeds to survivable levels.

The Safe System approach, which has been endorsed in the EU strategic action plan on road safety[49], requires the road traffic management system to limit speeds to survivable levels, taking into account that humans make mistakes and their bodies have a limited tolerance for kinetic forces in case of a road collision.

Speed limit selection is a critical indicator determining safe travel speeds for different road types. Which speed is considered safe depends on the road design and its function, traffic volume, the composition of traffic and potential conflict types.[50] On this basis, safe travel speeds have to be identified for different urban and rural road types taking into account human tolerance thresholds and the protective quality of roads, roadsides and vehicle design.[51,52] This imposes a substantial responsibility on the speed limit-setting authority in determining legal speed limits.[53] Current speed limits of much of the road network in EU countries are higher than the protective quality of the road, roadside and vehicle designs allows.[54]

[48] OECD-ITF (2015), Improving safety for motorcycle, scooter and moped riders, https://goo.gl/7Hsrcd
[49] European Commission (17.05.2018), Annex to the communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and Committee of the Regions, Europe on the Move, Sustainable Mobility for Europe: Safe, connected and clean, https://goo.gl/Qanhzd
[50] SWOV (2012), Fact sheet, Towards credible speed limits, https://goo.gl/h91gxy
[51] European Commission (2018), Preparatory work for an EU road safety strategy 2020-2030, https://goo.gl/gGm91m
[52] Tingvall C. and Haworth N. (1999). Vision Zero - An ethical approach to safety and mobility. Paper presented to the 6th International Conference Road Safety & Traffic Enforcement: Beyond 2000, Melbourne.
[53] WHO (2008), Speed management, A road safety manual for decision-makers and practitioners, https://goo.gl/gp1teP
[54] European Commission (2018), Preparatory work for an EU road safety strategy 2020-2030, https://goo.gl/gGm91m

A substantial responsibility lies on the speed limit-setting authority in determining legal speed limits.

National road traffic acts provide the general framework for setting standard speed limits on different road types. A proper set of guidelines should accompany road traffic acts to establish clear, consistent and detailed rules in order to help authorities in setting safe legal speed limits and describe circumstances in which special speed limits can be introduced. The guidelines should emphasise the available options to change speed limits taking into account safety and credibility criteria.

Regular and systematic speed limit reviews against specific criteria outlined in the guidelines should be mandatory for speed limit-setting authorities to assess whether the speed limit on any particular stretch of road needs to be revised. Revision might be needed due to various factors, including changes in the road condition or function, traffic volumes, collision frequency, presence of vulnerable road users, number of intersections.

If implemented, guidelines for setting and changing speed limits help to establish a consistent practice of limiting vehicle speed on parts of a road network with similar functions and characteristics and assist drivers in developing good driving habits.[55]

Some PIN countries (Table 2) have adopted national guidelines accompanying road traffic acts to help authorities adjust speed limits. It is hard to know the extent to which these guidelines are implemented as most of them are not binding. Moreover, speed limit reviews are usually not mandatory. Implementation of those national guidelines could be improved by financial or other incentives.

In Ireland, some funding, although limited, is provided to road authorities to revise and update the speed limits based on national guidelines. Moreover, Irish road authorities are required to review and update speed limits every 5 years.

Table 2. National guidelines on setting speed limits. For more information see Table 1 in the annexes.

Are there national guidelines on setting speed limits in your country?		
Yes	**No**	**Information not available**
Austria	Estonia	The Czech Republic
Belgium (Wallonia)	Croatia	Latvia
Belgium (Flanders)	Hungary	Lithuania
Cyprus	Italy	Romania
Germany	Slovenia	Slovakia
Denmark	Switzerland	
Greece	Serbia	
Spain	Bulgaria	
Finland		
France		
Ireland		
Luxembourg		
Malta		
Netherlands		
Poland		
Portugal		
Sweden		
Israel		
Norway		
UK		

[55] WHO (2008), Speed management, A road safety manual for decision-makers and practitioners, https://goo.gl/ycavKg

1.7 Safety and credibility of speed limits

To motivate road users to keep to the speed limits, it is important that these limits are credible. A credible limit means that it is considered logical by the road user, i.e. the limit corresponds to the expectations of the road user in terms of a road's layout and traffic environment. While many countries have such a requirement in their speed limit regulations, translating this into practice proves difficult.[56] A speed limit can fail to be credible because the limit is considered to be either too high or too low for the road design. If limits are experienced as not being credible too often, it damages the trust in the speed limit system as a whole. However, adapting the speed limit to the road infrastructure must never be done at the expense of road safety. A safe limit should always remain a priority.[57]

In order to have credible speed limits, it can be helpful to establish a coherent and rather simple speed limit system, for example:

- adopting one of only two speed limits for each type of homogeneous road section (identified according to its functional characteristics and geometric design): a higher speed limit and a lower one, in relation to the prevailing traffic and safety conditions, e.g. 30 and 50 km/h in urban areas, 70 and 90 km/h for rural non-motorway roads;
- using only odd numbered speed limits, for example: 30, 50, 70, 90, 110 and 130 km/h;
- at the time of road design, making sure that the speed limit is compatible with the geometric design of the road e.g. the lane width, the bend radius, intersections.

The majority of PIN countries do not have estimates on the proportion of roads with proper design, safe and credible speed limits given the function of the road. Only Sweden, Switzerland and the Netherlands could provide some estimates.

Sweden has a long term goal to adapt speed limits based on the safety classification of state roads. The goal for 2020 is to have 90% of state roads with a speed limit at 80 km/h or below while roads with higher speed limits should have a median barrier. 76% of the state road network matched these criteria in 2017.[58]

In the Netherlands, almost all motorways and approximately half of all 30 km/h roads are regarded as well-designed.[59]

Experts estimate that the proportion of roads with safe and credible speed limits in Switzerland is almost 100% for motorways, 80% for rural roads, 50% for urban roads and 30% for roads with speed limits of 30 km/h.[60]

SAFE AND CREDIBLE SPEED LIMITS AND GUIDELINES

Recommendations to Member States

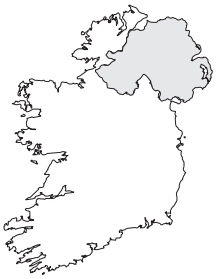
- Develop, and encourage speed limit-setting authorities to apply, national speed limit guidelines based on the Safe System approach. When developing guidelines, take into account factors such as road design, roadside (e.g. land use and topography), traffic composition and flow, presence of vulnerable road users and vehicle quality.[61]
- Mandate authorities to review and regularly update speed limits (e.g. every five years) using specifications identified in the national speed limit guidelines.
- Provide clear speed limit signs to inform drivers about applicable limits.
- Develop methodologies to estimate the proportion of roads with credible speed limits.

[56] European Commission, Safe and credible speed limits, https://goo.gl/cmEMiJ
[57] SWOV fact sheet, Towards credible speed limits.
[58] Data source: annual management by objectives review.
[59] Data source: PIN co-chair.
[60] Data source: PIN panelist.
[61] WHO (2008), Speed management, A road safety manual for decision-makers and practitioners, https://goo.gl/ycavKg

UK: A road safety management capacity review concluded that a 60 mph (97 km/h) speed limit on single carriageway rural roads is too high

The report commissioned by the Department for Transport but not necessarily reflecting Departmental policy concluded that the road classification in Britain is not generally aligned to the Safe System approach to road safety. Posted speed limits allow speeds that are in excess of the design limits of roads and roadsides and the vehicles' capability to protect against death and serious injury. This is particularly the case on the single carriageway rural road network where inappropriate, but allowable, speed within the 60 mph (97 km/h) limit is often cited as a contributory factor in road collisions. Single carriageway rural roads are used by low and high-speed vehicles, motorised and non-motorised vehicles, farm and leisure traffic. The road safety management capacity review calls for an urgent revision of national speed limits on roads in Britain.[62]

"We are aware of the concerns around speed on rural roads in particular. Rural road users are one of the key priority user groups in our refreshed Road Safety Statement and two-year action plan which we expect to publish this year."
Delphine Robineau, Department for Transport, UK



Ireland: a speed limit review was conducted to improve the consistency and credibility of speed limits

The Irish speed limit system was reviewed in 2013. The key issues addressed in the review were the general lack of consistency in speed limits from one local authority's roads to the next and inappropriateness of speed limits. This resulted in anomalies whereby drivers encountered roads with the same design and layout but different speed limits. The speed limit review delivered recommendations for action and new speed limit guidelines were produced to implement a more credible and consistent system of safe speed limits.[63]

Sweden: a revision of speed limits on state rural roads resulted in reduced speed limits on roads with low safety standards and 41% fewer road deaths on these roads

Between 2008 and 2011, the Swedish Transport Administration reviewed the speed limits on the state rural road network.[64] Guidelines were established for different types of roads, and the long-term vision was that speed limits should be adapted to the safety classification of each road.[65] As a result, the speed limit was reduced on many rural roads from 90 km/h to 80 and increased on some motorways with high safety standards from 110 km/h to 120. When roads were rebuilt to 2+1 the speed limit was set to 100 km/h instead of 90. The motivation was to adapt speed limits to the safety classification of each road, but also to reach a balance between environment and mobility needs.

On rural roads with low safety standards the speed limit was reduced from 90 km/h to 80. As a result, the mean speed on these roads decreased by 3.1 km/h, the number of road deaths went down by 41%, while the number of seriously injured did not change significantly. On motorways where the limit was increased, the mean speed increased by 3.4 km/h, the number of seriously injured went up by 15 seriously injured per year and there was no significant change in the number of road deaths.[66]

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[62] Systra on behalf of DfT (2018), Department for Transport, Tourism and Sport (2013), Speed Limits Review, https://goo.gl/eh1aiz
[63] Department for Transport, Tourism and Sport (2013), Speed Limits Review, https://goo.gl/eA3QAk
[64] VTI, Vadeby A. (2013), Speed management in Sweden: evaluation of a new speed limit system, https://goo.gl/j2trFB
[65] Ibid
[66] OECD-ITF (2018), Speed and Crash Risk, https://www.itf-oecd.org/speed-crash-risk

1.8 The challenges of speed limit enforcement

Excessive speed is a major problem in all PIN countries and speed limit enforcement remains a challenge for all governments.

Speed limit enforcement aims to deter drivers from exceeding the speed limit by penalising those that do. This not only affects the driving speed of those that actually get caught (specific deterrence), but also those who see or hear that others have been caught (general deterrence). Speed limit enforcement will remain essential as long as the speed problem is not solved in a structural way by implementing safe and credible speed limits, self-explaining, forgiving and self-enforcing roads as well as vehicles that help drivers to comply with speed limits.[67]

A combination of mobile roadside police checks together with automated stationary enforcement, including fixed and average speed or time-over distance cameras has proved to be an effective tool in addressing speeding.[68]

It is argued that speed limit enforcement is most appropriate on specific road stretches where collisions are concentrated. Such targeted action brings road safety benefits in the most dangerous road sections and makes it easier to explain the reasons for enforcement to the general public. It is important that enforcement is perceived as a necessary road safety measure, not a fund raising activity.

Whereas enforcement should focus on roads with a poor safety record, it should not be limited to one road category. It is important that drivers become aware that surveillance exists everywhere, especially on roads with high traffic volumes so that enforcement is visible for many road users.[69]

With moderate levels of enforcement but a high perceived chance of being caught thanks to good communication, a Demerit Point System is likely to have an effect on driver behaviour that is stronger than the effect of enforcement alone.[70]

Efficiency is further enhanced if the handling of fines for detected violations is largely automated and if the vehicle owner and not the vehicle driver is held liable, or is required to identify the driver, since it is easier and faster to identify the owner than the driver.

Despite speed limit enforcement efforts in the EU, drivers' perception of being detected for a speeding offence remains low in the EU. According to an ESRA survey, only 38% of respondents, on average, think there is a big or very big chance of being checked by the police for not respecting the speed limit.[71]

[67] European Commission, Speed limits, http://goo.gl/q3eFFq
[68] SWOV Fact Sheet (2009), Speed cameras: how they work and what effect they have, http://goo.gl/PYtqd0, and PACTS (2003), Speed cameras. 10 criticisms and why they are flawed, http://goo.gl/NJvUUt
[69] OECD-ITF (2006), Speed Management, http://goo.gl/jUWOyt
[70] Ibid
[71] European survey of road users' safety attitudes, Enforcement and support for road safety policy measures (2016), https://www.esranet.eu/en/deliverables-publications/

INDICATOR

This report also aims to compare the levels of speed limit enforcement activities between PIN countries. It uses as indicators the annual number of speeding tickets issued since 2012 per thousand inhabitants and the proportion of speeding tickets that were generated by safety cameras over the period 2012-2017. It also uses as an indicator the annual change in the number of speeding tickets since 2010.

The ideal indicator on how to assess the level of enforcement of speed limits would be to compare countries on the basis of the time spent on speed limit enforcement or the number of checks performed both by the police and by safety camera. Unfortunately this indicator is not available in most countries. Thus, this report uses the number of tickets per thousand inhabitants, assuming that they are broadly proportionate to the level of enforcement activity.

Data on the annual number of speed tickets are not available countrywide in the Czech Republic, Germany and Switzerland. In Great Britain, Italy and Spain, data on speeding tickets are available for only part of the road network.

The analysis builds on previous country rankings on the levels of enforcement in ETSC's 4th (2010) and 6th (2012) Road Safety PIN reports and the PIN flash report 31 (2016) "How traffic law enforcement can contribute to safer oads".

1.8.1 Dynamics in speed limit enforcement levels

In this report it is assumed that an increase in the number of speeding tickets represents an increase in enforcement activity.

In general, there appears to be an overall increase in speed offences detected throughout the EU, mainly due to the extension of safety camera networks. Nevertheless, there are big discrepancies regarding the amount of safety cameras and the number of speeding tickets issued in each PIN country.

Out of the 27 countries that could provide data on the number of speeding tickets issued over the period 2010-2017, the figure went up in 18 countries while 9 registered a decrease (Fig. 9).

The number of speeding tickets has increased on average by 21% annually in Malta, 20% in Serbia, 14% in Latvia, 13% in Lithuania and Italy, 12% in Estonia, Bulgaria and Denmark. In many of these countries the increased number of tickets is a result of wider safety camera use. Estonia, Latvia, Lithuania and Denmark achieved better than EU average reductions in the number of road deaths over the same period.

The annual number of speeding tickets dropped in Sweden, Romania and the Netherlands, countries that have also experienced some of the biggest slow-downs in reducing road deaths since 2010.

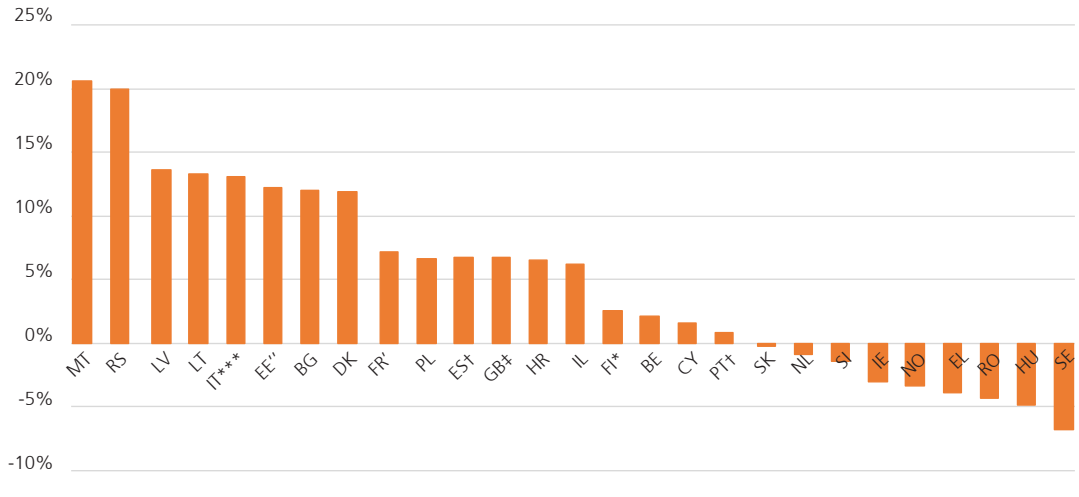


Figure 9. Annual change (in %) in the number of speeding tickets over the period 2010-2017.
FI* - written warning letters and fines, petty fines and crime reports are included.
IT*** - speeding tickets following checks by national police, Carabinieri and police in main cities (provincial capitals).
ES† - data on number of speeding tickets following checks on roads in urban areas and in the region of the Basque country and Catalonia are not available.
FR' – 2010-2016. GB‡ - total number of speeding tickets and sanctions imposed as an alternative to a speeding ticket in England and Wales over the period 2011-2016.
EE'' – 2012-2017.

The number of speeding tickets issued is not available countrywide in the Czech Republic, Germany and Switzerland. This deprives policymakers of a key indicator of the effectiveness of measures to enforce speed limits.

1.8.2 Speed limit enforcement levels by country

The methods and levels of speed limit enforcement differ greatly between EU Member States (Table 3). Among countries that could provide data, speed limit enforcement activities are the most extensive in the Netherlands and Luxembourg with 457 and 428 speeding tickets per 1000 inhabitants respectively.

The annual number of speeding tickets per capita are also high in Belgium and France where safety cameras are also used extensively. In contrast, being fined for speeding is rather an exception in Sweden, Norway and Greece with 20 or fewer speeding tickets issued per 1000 inhabitants.

The proportion of offences detected by a safety camera varies greatly in the PIN countries but has been increasing since 2012. 99.9% of speeding tickets are issued as a result of an offence detected by a stationary or time-over-distance camera in Malta, 95% in France and Luxembourg and 92% in Lithuania. In contrast, all speeding tickets in Romania are issued after an offence was detected by the police. Only 3% of speeding fines are issued after detection by safety camera in Slovakia, 6% in Cyprus, 20% in Poland and 23% in Israel.

	2017		2016		2015		2014		2013		2012	
	Number of speeding tickets per 1000 inhabitants	Proportion by fixed or time-over-distance safety camera (in %)	Number of speeding tickets per 1000 inhabitants	Proportion by fixed or time-over-distance safety camera (in %)	Number of speeding tickets per 1000 inhabitants	Proportion by fixed or time-over-distance safety camera (in %)	Number of speeding tickets per 1000 inhabitants	Proportion by fixed or time-over-distance safety camera (in %)	Number of speeding tickets per 1000 inhabitants	Proportion by fixed or time-over-distance safety camera (in %)	Number of speeding tickets per 1000 inhabitants	Proportion by fixed or time-over-distance safety camera (in %)
NL	457	77%	470	79%	393	n/a	400	n/a	503	n/a	454	n/a
LU	428	95%	470	94%	n/a							
BE	299	n/a	292	n/a	n/a		301	n/a	286	n/a	272	n/a
FR	n/a		253	95%	212	94%	200	93%	181	92%	199	92%
LV	186	65%	116	43%	75	29%	54	0%	64	1%	201	84%
MT¥	171	99.9%	163	99.8%	169	99.8%	145	98%	37	98%	56	98%
CY	121	6%	124	9%	108	29%	89	14%	84	0%	133	0%
EE	116	78%	126	73%	102	66%	95	65%	76	58%	71	47%
FI*	111	66%	111	64%	93	55%	76	70%	83	64%	80	68%
DK	97	n/a	98	n/a	82	n/a	44	n/a	63	n/a	47	n/a
LT	94	92%	58	98%	50	98%	51	98%	40	98%	30	98%
HR	71	n/a	77	n/a	66	n/a	62	n/a	51	n/a	51	n/a
SI	57	n/a	37	n/a	44	n/a	48	n/a	42	n/a	35	n/a
PL	56	20%	55	21%	50	17%	55	20%	46	15%	43	8%
BG	54	n/a	47	n/a	29	n/a	12	n/a	41	n/a	36	n/a
RS	52	n/a	47	n/a	38	n/a	25	n/a	20	n/a	16	n/a
HU	51	n/a	28	n/a	28	n/a	29	n/a	30	n/a	46	n/a
NO	45	39%	50	36%	48	36%	50	36%	54	35%	56	35%
SK	45	3%	47	2%	55	2%	63	2%	60	0%	56	0%
PT†	43	70%	10	0%	n/a		25	0%	23	0%	25	0%
IL	42	77%	18	67%	17	73%	12	65%	17	72%	13	57%
RO	36	0%	42	0%	38	0%	39	1%	44	2%	37	3%
IE	31	n/a	36	n/a	47	n/a	49	n/a	45	n/a	49	n/a
EL	20	n/a	16	n/a	16	n/a	14	n/a	16	n/a	17	n/a
SE	14	51%	15	51%	17	48%	19	39%	21	31%	23	34%
AT***	n/a	87%	n/a	87%	n/a	86%	n/a	84%	n/a	84%	n/a	84%
Data available for speeding tickets on part of the road network only												
IT"	13	78%	15	82%	13	88%	12	85%	12	85%	13	86%
IT'	47	n/a	44	n/a	44	n/a	46	n/a	25	n/a	24	n/a
ES‡	n/a	90%	n/a	90%	n/a	91%	n/a	85%	n/a	82%	n/a	86%
GB'''	n/a		37	n/a	33	n/a	34	n/a	29	n/a	29	n/a
Data on the number of speeding tickets not available												
CZ	n/a											
DE	n/a											
CH	n/a											

Table 3. Total number of speeding tickets per 1000 inhabitants (by both police roadside checks and safety cameras) and the proportion (in %) of those speeding tickets that were sent after an offence was detected by fixed or time-over distance safety camera between 2012 and 2017. FI* - warning letters, fines, petty fines and crime reports are included. AT*** - % of fixed or time-over-distance safety camera refers to offences detected but not the number of speeding tickets. MT¥ - speeding tickets issued by national police. PT† – data on % of offences detected by safety camera in 2017 refers to July-December 2017. ES‡ – speeding tickets from offences detected by mobile speed cameras are included in the % of offences detected by fixed or time-over-distance cameras if the driver was not pulled over and the ticket was issued automatically, data on number of tickets following checks on roads in urban areas and in the region of the Basque country and Catalonia are not available. IT" - speeding tickets following checks by national police only. IT' - speeding tickets following checks by national police, Carabinieri and police in main cities (provincial capitals). GB''' - the figures of those attending the NDORS courses in England, Wales and Northern Ireland are added to the speeding tickets to give a true reflection of the enforcement activity within the UK.

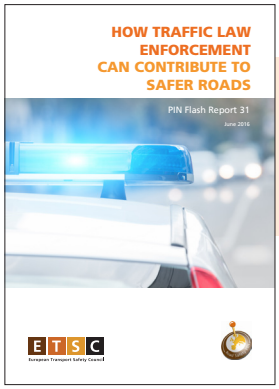
SPEED LIMIT ENFORCEMENT

Recommendations to Member States

- Collect data on the number of checks performed by the police and safety cameras in enforcing legal speed limits.
- Promote the introduction of owner or keeper liability as opposed to driver liability to facilitate enforcement of speed limits.
- Adopt national or regional enforcement plans with annual targets for the number of checks and compliance levels, including on speeding, in line with the EC 2004 Recommendation on Traffic Law enforcement.[72]
- Prepare national or regional enforcement plans with yearly targets for compliance in urban areas where there are high numbers of pedestrians and cyclists.
- Apply European best practice in the enforcement of speed limits, including experience in using safety cameras and time-over-distance systems.
- In countries with low numbers of safety cameras, consider extending the network.
- As well as fixed safety cameras, introduce time-over-distance cameras in places where speeding over appreciable distances is a problem.
- Incorporate speeding offences in penalty point systems and make sure that the levels of penalty escalate as the level of speeding above the limit increases, as well as for recidivists.
- Improve the robustness of the system to reduce appeals against fixed penalties for speeding violations.

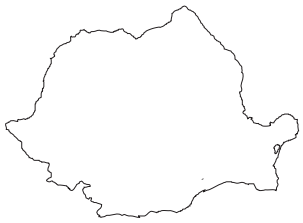
Recommendations to EU institutions

- Include best practice guidelines on speed limit enforcement and sanctions to encourage Member States to achieve high standards on enforcement methods and practices and a greater convergence of road-safety-related traffic rules, building on the EC 2004 Recommendation on Traffic Law enforcement.
- Initiate a technical assistance programme to support less well-performing Member States to develop and pilot a national strategy on speed management. The approach might also include technical exchanges and twinning with other better-performing countries.
- Encourage EU countries to collect data on the number of checks performed by the police and safety cameras in enforcing legal speed limits.



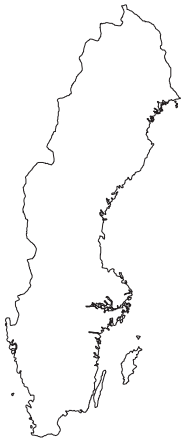
For more information and ETSC recommendations on traffic law enforcement read ETSC's PIN Flash 31 (2016) "How traffic law enforcement can contribute to safer roads".
The report is available at www.etsc.eu/pinflash31

[72] EC Recommendation on Enforcement in the Field of Road Safety 2004/345, http://goo.gl/Vw0zhN



Romania: loopholes in the national legislative framework prevent automatic speed limit enforcement

A lack of funding is seen as a barrier to higher levels of traffic law enforcement in Romania. The number of tickets for traffic offences issued manually went down from more than one million in 2011 to 710,520 in 2017. The number of speeding tickets after detection by fixed safety cameras gradually decreased from 25,705 in 2010 to 4,552 in 2014 and to zero after 2014. While there are some functioning fixed safety cameras in Romania, loopholes in the national legislative framework prevent the police from sanctioning traffic law offenders detected by fixed safety cameras.



Sweden: objective of 80% of traffic complying with speed limits by 2020

In order to achieve the national target of no more than 220 road deaths by 2020, progress in relation to 13 road safety performance indicators (SPI) is monitored and presented to stakeholders annually. Two of the 13 targets monitored is to reach 80% of the traffic volume complying with speed limits on urban and rural roads by 2020. Sweden is currently extending the safety camera network to improve levels of speed compliance.

The number of speeding tickets per thousand inhabitants in Sweden is one of the lowest in Europe (Table 3), only 30% of the offences detected by camera are followed-up with a ticket. The strict driver liability in place in Sweden requires the identification of the driver as a precondition for issuing a fine.[73] To limit the number of cases to a level that the enforcing authorities can handle, safety cameras only record speed offences for a few hours per day on average, but drivers passing by a camera do not know whether it is on or off. Mobile police checks, where the driver is stopped, are therefore a crucial complement to safety camera to increase the subjective risk of being checked. 51% of all speeding tickets in Sweden follow a mobile police check, where the driver is stopped, one of the highest proportions among the countries that could provide data (Table 3).

"Despite the low number of detected speed offences that result in a ticket, significant speed reductions are observed on the roads where safety cameras are installed. We are monitoring speed compliance at camera sites to ensure that our system continues to be effective and actually cuts speeds on the most dangerous sections of road."
Anna Vadeby, Road and Transport Research Institute (VTI), Sweden

Cyprus: more speed limit enforcement efforts as a response to an increase in the number of road deaths

"The growth in the number of speeding tickets issued in 2016 and 2017 is a result of instructions given by the Chief of Police, as a response to a sharp increase in road deaths from 45 in 2015 to 57 in 2016. The daily speed controls and the speed enforcement campaigns were thus significantly increased and consequently the number of issued speeding tickets grew."
Cyprus Traffic Police statement

Malta: almost all speeding tickets issued after detection by safety camera, but since 2018 more use of speed guns by the police to enforce speed limits more widely

"The increase in the number of speeding tickets from 37 per thousand inhabitants in 2013 to 145 per thousand inhabitants in 2014 can be mostly attributed to the fact that all safety cameras were replaced with new devices which are better calibrated and more sensitive than the previous ones. However, in 2013 there was also a dip in the number of infractions because a number of the previous cameras were not in operation due to technical issues. In addition, two new speed cameras were installed in 2014, bringing the total number from 18 to 20."

"To supplement the operation of fixed safety cameras, in 2018 the police have been equipped with portable speed guns to allow more mobile speed checks. Therefore, we expect the proportion of speeding tickets issued by police to gradually increase."
Patrick Cachia Marsh, Transport Malta

[73] Sweden and Germany apply strict driver liability, i.e. the enforcement authorities cannot require the owner/ holder of the vehicle to identify the driver because this would contradict the privilege against self-incrimination. The privilege against self-incrimination forbids a government from compelling any person to give testimonial evidence that would likely incriminate this person in a subsequent criminal case.

PART II
THE ROLE OF THE EU IN EFFECTIVE SPEED MANAGEMENT

2.1 A unique opportunity to save thousands of lives: Intelligent Speed Assistance

The EU has the exclusive authority to set minimum safety standards for all new vehicles sold on the EU market. The standards were last updated in 2009.

The EU's Third Mobility Package, a set of policies and legislative initiatives designed to make a major contribution to cutting road deaths and serious injuries in half by 2030, is currently working its way through the legislative process.[74]

Research shows that the overridable ISA would help to achieve a high level of compliance with speed limits and eventually cut road deaths by 20%.

The package includes a legislative update to minimum vehicle safety standards.[75] The proposed standards include mandatory fitment of overridable Intelligent Speed Assistance (ISA) on all cars, vans, buses and heavy goods vehicles. Research shows that this single technology could help to achieve a high level of compliance with speed limits and eventually cut road deaths by 20%.[76]

ETSC is calling on the European Parliament, the Council and Member States to support the Commission's proposals in full.

Intelligent Speed Assistance (ISA) is already available on several models of new cars in the EU.

ETSC is calling for ISA systems that use a sign-recognition video camera and a GPS-linked speed limit database to help drivers keep to the current speed limit.[77]

Such a system will limit engine power when necessary to help prevent the driver from exceeding the current speed limit. The system can be overridden or temporarily switched off. As well as improving road safety, reducing emissions and saving fuel, the system can help drivers avoid speeding fines.

Mobileye, a major supplier of traffic sign recognition and ISA systems, told a European Parliament workshop in November 2018 that state-of-the-art systems have an accuracy rate of 95% in most EU countries, and added that any outstanding issues could be overcome before ISA is set to become mandatory according to the European Commission's proposed timeline.[78]

[74] An ETSC briefing on the EU's Third Mobility Package can be found at http://etsc.eu/mobilityiii

[75] Proposal for a regulation of the European Parliament and of the Council on type-approval requirements for motor vehicles and their trailers, and systems, components and separate technical units intended for such vehicles, as regards their general safety and the protection of vehicle occupants and vulnerable road users, amending Regulation (EU) 2018/… and repealing Regulations (EC) No 78/2009, (EC) No 79/2009 and (EC) No 661/2009, https://goo.gl/CX3e9U

[76] Calculations by Carsten, O. based on Carsten O., Fowkes M., Lai F., Chorlton K., Jamson S., Tate F., & Simpkin B. (2008), ISA-UK intelligent speed adaptation, Final Report.

[77] ETSC, ISA https://etsc.eu/intelligent-speed-assistance-isa/, ETSC (2017), Briefing: Intelligent Speed Assistance (ISA), https://etsc.eu/briefing-intelligent-speed-assistance-isa/

[78] ETSC, Twitter, https://twitter.com/ETSC_EU/status/1069545103662956545

TomTom, a major supplier of digital maps has said that it now carries out more than 1.5 billion map updates each month. The updates, which could include speed limit changes, can be uploaded over-the-air directly to the car.[79]

Under the TN-ITS platform, a number of national authorities in cooperation with map makers have launched pilot projects to create digital map databases which include speed limit information on various kinds of roads. If ISA becomes a standard in all new cars sold in the EU, it would give a clear incentive for Member States to invest in even more reliable digital speed limit information.

The European Parliament's Transport and Tourism (TRAN) committee gave their support to the file in a vote in January, calling for the measures it covers to be introduced one year earlier than originally planned. Because vehicle regulations are part of EU single market legislation – the Parliament's Internal Market (IMCO) committee will take the lead role in defining the final vehicle safety rules – starting with a vote in February 2019.[80]

INTELLIGENT SPEED ASSISTANCE

Recommendations to Member States

Within the context of the update of the EU General Safety of Motor Vehicles Regulation and the Pedestrian Safety Regulation[81]:

- Support the introduction of overridable Intelligent Speed Assistance.
- Set up and regularly update digital maps with information on speed limits on all kinds of roads.
- Improve speed limit signs.

Recommendations to EU institutions

Within the context of the update the EU General Safety of Motor Vehicles Regulation and the Pedestrian Safety Regulation:

- Fit all new vehicles with an overridable Intelligent Speed Assistance system that defaults to being switched on.[82]

2.2 Towards common safety performance indicators

Road safety performance indicators (SPIs) are causally related to collisions that lead to road deaths or injuries. SPIs reflect operational conditions of the road traffic system which influence the system's safety performance.[83] In a Safe System approach, information is needed on the amount of distance travelled (such as traffic volumes and population data), final outcomes (deaths and serious injuries) and intermediate outcomes (e.g. mean speeds).[84]

Among the most important SPIs are those related to speed. As a first step, SPIs should be well-defined, representative, observable, reliable, valid and precise.[85] A comprehensive list of speed related SPIs should consist of:

[79] TomTom press release, 2018, https://bit.ly/2MrsCDw
[80] Last Night the EU Saved My Life: ETSC's campaign in support of new vehicle safety measures: https://etsc.eu/last-night-the-eu-saved-my-life/
[81] Proposal for a regulation of the European Parliament and of the Council on type-approval requirements for motor vehicles and their trailers, and systems, components and separate technical units intended for such vehicles, as regards their general safety and the protection of vehicle occupants and vulnerable road users, amending Regulation (EU) 2018/… and repealing Regulations (EC) No 78/2009, (EC) No 79/2009 and (EC) No 661/2009, https://goo.gl/CX3e9U
[82] ETSC (2017), Position paper: Revision of the General Safety Regulation 2009/661, https://goo.gl/MQTKyN
[83] SafetyNet, Deliverable D3.8: Road Safety Performance Indicators Manual (2007), https://goo.gl/YVrLeB
[84] Road safety study for the interim evaluation of Policy Orientation on Road Safety 2011-2020, https://goo.gl/nUhXLoe
[85] Ibid

- An SPI for the proportion of roads with safe and credible legal speed limits by road type. This indicator addresses road authorities whose responsibility is to make sure that legal speed limits are safe and credible. It requires a criteria for the safety and credibility of limits.
- An SPI for the proportion of actual travelling speeds within the legal speed limit by road type. This indicator aims to measure the road user behaviour in relation to the legal speed limits.
- An SPI for the proportion of actual travelling speeds within their legal speed limits for certain vehicle categories (e.g. HGVs, buses and mopeds) by road type. This indicator aims to measure the actual behaviour of certain road user groups who are driving vehicles that have a special legal speed limit which is often lower than the posted speed limit. These vehicles might be observed travelling within the posted speed limit but they might actually be exceeding the maximum speed limit allowed for their vehicle category.

Regularly and systematically collected SPI data can contribute to effective speed management strategies.

Regularly and systematically collected SPI data can contribute to effective speed management strategies. SPIs help to get direct feedback on road safety stakeholders' efforts in implementing road safety measures, helping with the evaluation of the outcome of interventions and contribute to well-informed policy decision-making. Setting SPI targets based on former indicator values is an important tool to motivate action in narrowing the gap between the current performance level and the target.

The EU's Third Mobility Package of road safety legislation contains a Strategic Action Plan on Road Safety that suggests putting forward key safety performance indicators (SPIs) in the EU road safety policy framework 2021-2030. A set of key performance indicators directly linked to preventing deaths and serious injuries for all road users will be defined in 2019 following close consultation with Member State authorities. The European Commission will encourage countries to collect SPI data based on a common measurement methodology and an agreed baseline and will, to the extent possible, link SPIs to outcome targets.[86] If implemented by the Member States, this European Commission initiative will allow monitoring of Member States' performance in improving various road safety areas and will enable better understanding of the reasons behind the progress or lack of it. Some of the indicators that are currently being discussed will focus on driving speeds.

11 PIN countries have adopted speed-related SPI targets already. Six more are currently discussing the possibility of introducing speed–related SPI targets in upcoming road safety programmes.[87] Yet, among countries that have SPI targets, definitions and the scope of the targets as well as the level of ambition and feasibility differ substantially (Table 4).

[86] European Commission (2018), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Europe on the Move, Sustainable Mobility for Europe: safe, connected and clean, https://goo.gl/1jYzkj
[87] Austria, Denmark, Finland, Greece, Italy, Malta.

Table 4. Speed-related SPI targets and progress towards the targets.

Country	Speed SPI target	Progress towards the target
BE Wallonia	Target 1: reduce average speed by 3 km/h on all types of roads by 2020 Target 2: reduce the proportion of vehicles going above the relevant speed limit by 50% on all types of roads by 2020.	The targets were set in 2017, results on progress are not yet available.
CZ	85% of drivers not exceeding the speed limit by 10 km/h or more on all kind of roads by 2020.	94% of drivers did not exceed the speed limit by 10 km/h or more on urban roads in 2018; 88% of drivers did not exceed the speed limit by 10 km/h or more on rural roads in 2018.
EE	The proportion of road users exceeding the speed limit by more than 10% should not be higher than 35% on urban roads, 30% on main highways and 30% on local highways by 2025.	The progress has not been measured yet.
ES	50% reduction in light vehicles going above the speed limit by more than 20 km/h outside urban areas.	The progress will be measured by 2020.
FR	The main SPI is the evolution of average speed.	In 2016 average speed on rural roads was 80.9 km/h, expected at 80.8 km/h in 2017 and expected at slightly lower in 2018. Target for 2019 is not quantified but is set lower than the previous years due to a global reduction of speed limits from 90 km/h to 80 on non-urban single carriageway roads.
IE	100% of traffic volume travels within the speed limit on all types of roads by 2020.	n/a
LV	50% reduction in the number of road deaths and serious road traffic injuries caused by speeding. Target period 2010-2020.	32% decrease in road deaths caused by speeding in 2017 compared to 2010. 24% increase in the number of serious road traffic injuries caused by speeding in 2017 compared to 2010.
SE	80% of traffic volume travels within speed limits on the municipal road network and on the national road network by 2020.	67% of traffic volume travels within speed limits on municipal road network in 2017; 45% of traffic volume travels within speed limits on national road network in 2017.
SI	50% reduction in the number of road deaths caused by speeding on urban and rural roads over the period 2013-2022.	6% reduction in the number of road deaths caused by speeding on urban and rural roads in 2017 compared to 2013.
NO	70% of traffic volume travels within the speed limit on all types of roads by 2022.	59.9% of traffic volume travels within the speed limits.
RS	Maximum 19% of cars, HGV and buses travel above the speed limit in daylight by 2020.	49.4% of cars, 28.2% of HGVs and 29.8% of buses travelled above the speed limit in daylight in 2017.

SE

Sweden: close relationship between developments in speed-related SPIs and road deaths

"We know that reduced mean speeds are very important to increase traffic safety and therefore we have two speed-SPIs in our annual follow up. We have seen that the development of these SPIs follows the development of the number of road deaths closely."

Anna Vadeby, Road and Transport Research Institute (VTI), Sweden

SAFETY PERFORMANCE INDICATORS

ETSC recommendations to Member States

- Monitor speed patterns (including mean speeds and the proportion of observed vehicles going above the speed limit) and publish regular overviews of changes by different kind of road and road user group.
- Set national SPI targets, including special SPIs related to speed.
- Collaborate with the EC in developing and systematically collecting SPI data.

ETSC recommendations to EU institutions

- Prioritise measures to reduce speed in the 5th EU Road Safety programme.
- Set SPI targets in the 5th EU Strategic Road Safety programme, including these:
  - The proportion of roads with safe and credible speed limits by road type (e.g. 30 km/h);
  - The proportion of motor vehicles travelling within the speed limit by road type (urban, rural non-motorway, motorway);
  - The proportion of actual travelling speeds within the legal speed limits for certain vehicle categories (e.g. HGVs, buses and mopeds) by road type.
- Set SPI targets to match the performance of the three best performing countries for each indicator.
- Provide technical and financial support to Member States in collecting SPI data.

2.3 Self-explaining and self-enforcing roads

Self-explaining and self-enforcing roads are concepts of road design that seek to reduce the number of collisions on the whole road network. Self-explaining roads seek to prevent driving errors and aim to prevent motorists from committing traffic offences.

The objective in self-explaining road design is that different classes of roads should be distinctive in design and function and, within each class, features such as the width of the carriageway, road markings, signing and use of street lighting should be consistent throughout a route. The self-explaining road concept is inherent in design for the highest and safest road class – motorways. Yet on lower class roads, which are the most dangerous by their characteristics, consistency in design is often lacking, and progress towards it will take time and substantial investment because of the extent and variety of the inherited road network.[88]

The layout of self-enforcing roads aims to prevent road users from driving at inappropriate speeds. Self-enforcing roads employ engineering measures such as alignment, markings, road narrowing, rumble-strips, chicanes, and road humps.

2.3.1. Revision of EU Infrastructure Safety rules

The EU's Third Mobility Package of road safety legislation also contains a proposal to update the road infrastructure safety management rules.[89] The existing directive, which requires the application of four instruments designed to improve road safety, dates back to 2008 and only covers the major European motorways and other roads that form the Trans-European Road Network (TEN-T) representing around 4% of the entire EU road network.

The proposal envisages extending the scope of the Directive beyond the TEN-T network to motorways and primary roads, as well as all roads outside urban areas that are built using EU funds. It improves transparency and introduces a proactive approach to assess crash and severity risk. It proposes to set general performance requirements for road markings and road signs, making it easier for cooperative, connected and automated mobility systems.

The report voted by the European Parliament's Committee on Transport and Tourism (TRAN), asks the Commission to set out guidelines with precise technical characteristics for the provision of forgiving roadsides and self-explaining and self-enforcing roads in the initial audit of the design phase. For this purpose the Commission should provide technical and financial assistance to support Member States in the implementation of the guidelines.

The representatives of the European Parliament and the Romanian Presidency of the Council of the European Union aim to reach, by the end of February, an interinstitutional agreement on the file.

The infrastructure system should provide a safe framework for every road user in every EU Member State. However, knowledge about safe road design and effective risk management may well not be fully applied on all road types, even in the best performing countries in Europe. The revision of the infrastructure safety rules could help improve disparities in infrastructure safety management across EU Member States.

[88] ETSC (2018), Position on the Revision of the Road Infrastructure Safety Management Directive 2008/96 and Tunnel Safety Directive 2004/54, https://goo.gl/EKtveu

[89] European Commission (2018), Proposal for a Directive of the European Parliament and of the Council amending Directive 2008/96/EC on road infrastructure safety management, https://goo.gl/EkRnsh

INFRASTRUCTURE SAFETY MANAGEMENT

Recommendations to Member States

Within the context of the revision of the Road Infrastructure Safety Management Directive 2008/96:[90]

- Support extension of the scope of the Directive to all motorways, main rural and urban roads during negotiations between the European Parliament, Commission and Council.
- Improve infrastructure safety on the whole network by applying progressively the concepts of self-explaining and self-enforcing roads in the procedures of road safety infrastructure management.
- Replace dangerous intersections, typically by roundabouts. Other intersections with or without traffic signals should provide protection for vehicles turning across the path of opposing traffic.

Recommendations to EU institutions

Within the context of the revision of the Road Infrastructure Safety Management Directive 2008/96:

- Support EU-wide extension of the scope of the Directive to main rural and urban roads.
- Set EU guidelines with, for example, the input of the new Expert Group, for promoting best practice in traffic calming measures, based upon physical measures such as roundabouts, road narrowing, chicanes, road humps and techniques of space-sharing, to support area-wide urban safety management, for example when 30 km/h zones are introduced.
- Set EU guidelines implementing the concept of self-explaining and self-enforcing roads, matching speed limits and road characteristics and functions with one another.
- Provide technical and financial assistance to support EU Member States in the implementation of the guidelines.

2.4 Cross-border enforcement

According to the European Commission, non-resident drivers account for approximately 5% of road traffic in the EU, but a foreign-registered car is around three times more likely to commit a traffic offence than a domestically-registered one. The Commission also gives the example of France, where speeding offences committed by foreign-registered cars account for approximately 25% of the total, with the figure going up to 40-50% of the total during periods of high transit and tourism. The automated detection of a violation by safety cameras and automated identification of vehicles and owners are being used increasingly across the EU.[91]

In order to address the issue of non-resident road traffic offenders and guarantee the principle of non-discrimination, the EU adopted a Directive on Cross-border Enforcement 2015/413 (CBE)[92] which covers the main offences causing road death and serious injury in the EU.[93] The CBE Directive aims to facilitate the enforcement of financial penalties against drivers who commit an offence in a different EU Member State to the one where the vehicle concerned is registered.

[90] European Commission (2018), Proposal for a Directive of the European Parliament and of the Council amending Directive 2008/96/EC on road infrastructure safety management, https://goo.gl/EkRnsh
[91] European Commission (2010), Cross border enforcement, Memo 10/642, https://goo.gl/QIP1fd
[92] Directive (EU) 2015/413 of the European Parliament and of the Council facilitating cross-border exchange of information on road-safety-related traffic offences, http://goo.gl/JF1bAW
[93] Eight major road safety related offences are included in the text of the EU Directive: speeding; not using a seat belt; not stopping at a red traffic light or other mandatory stop sign; drink driving; driving under the influence of drugs; not wearing a safety helmet (for motorcyclists); using a forbidden lane (such as use of an emergency lane, a lane reserved for public transport, or a lane closed down for road works); illegally using a mobile phone, or any other communications device, while driving.

Enforcement is supported by EUCARIS, the European Vehicle and Driving Licence Information system, allowing Member States to exchange vehicle and driving licence registration information.[94]

The CBE Directive is a tool that can help achieve greater compliance with traffic laws, improve road safety and ensure equal treatment of resident and foreign drivers by reducing the impunity of the latter.[95]

It is for the Member State where the offence is committed to decide on the follow-up and sanctions for the traffic offence.[96] In case of non-payment of a fine, the Council Framework Decision on mutual recognition of financial penalties[97] enables a judicial or administrative authority to transmit a financial penalty directly to an authority in another EU country and to have that penalty recognised and executed.[98] Moreover, drivers who have not paid a fine and return to the country in question may also face action – in the same way as a local resident with an unpaid fine.

According to the EC impact assessment, the full implementation of the CBE would save between 350 and 400 road deaths each year. A major reduction could be achieved in mitigating the three most risky behaviours that cause offences: speeding, drink driving and non-use of seatbelts.[99]

CROSS BORDER ENFORCEMENT

Recommendations to Member States

Within the context of the revision of Directive 2015/413 concerning Cross-border Exchange of Information on road safety-related traffic offences:

- Apply the Directive in full, setting targets for a high level of follow-up of non-resident offenders and applying all means to reach the target as soon as possible.
- Raise awareness of EU citizens with regard to road safety traffic rules in force through organising regular information campaigns using partners such as NGOs and other road safety stakeholders linked to police enforcement.
- Regularly inform the European Commission of any changes to road safety-related legislation so that this can be communicated reliably at an EU level.
- In case of non-payment, apply the Council Framework Decision 2005/214.[100]
- Support the recast of the Framework Decision 2005/214, especially if this provides the opportunity to include civil/administrative offences as this would provide an important final part in the enforcement chain.
- Support the preparation of best practice guidelines on road safety enforcement and the review of strengthening sanctions, as foreseen under Article 11 of the Directive.

[94] ETSC (2015), Frequently Asked Questions EU Cross Border Enforcement Directive, http://goo.gl/rU1Tks
[95] ETSC (2015), Enforcement in the EU – Vision 2020, http://goo.gl/5NFGNW
[96] European Commission (2013), Road safety: Clamp-down on traffic offences committed abroad – FAQ, http://goo.gl/7IVilk
[97] Council Framework Decision 2005/214/JHA of 24 February 2005 on the application of the principle of mutual recognition to financial penalties, http://goo.gl/ApxVo0
[98] European Commission, Financial Penalties, http://goo.gl/2iDhyB
[99] European Commission (2008), Commission Staff Working document accompanying the Proposal for a Directive of the European Parliament and of the Council facilitating cross-border enforcement in the field of road safety, Full impact assessment, http://goo.gl/gLo6il
[100] Council Framework Decision 2005/214/JHA of 24 February 2005 on the application of the principle of mutual recognition to financial penalties, https://goo.gl/dthrhr

Recommendations to EU institutions

Within the context of the revision of Directive 2015/413 concerning Cross-border Exchange of Information on road safety-related traffic offences:

- Revise the Directive to strengthen the enforcement chain, including mandatory notification by the State of Offence in accordance with their national legislation.
- In case of non-payment of fines, encourage Member States to apply the Council Framework decision 2005/214.
- Recast the Framework Decision 2005/214 to include civil/administrative offences as this would provide an important final part in the enforcement chain.
- Develop common minimum standards on enforcement equipment.
- Collect and publish EU countries' enforcement plans to facilitate the exchange of best practice on enforcement across the EU and work towards developing a common road safety enforcement strategy as outlined by the Road Safety Policy Orientations 2011-2020 under Objective 2. Continue exchanging best practice via the expert group on enforcement.
- Evaluate the barriers preventing a full implementation of the CBE Directive.

ANNEXES

Country	ISO Code
Austria	AT
Belgium	BE
Bulgaria	BG
Croatia	HR
Cyprus	CY
Czech Republic	CZ
Denmark	DK
Estonia	EE
Finland	FI
France	FR
Germany	DE
Greece	EL
Hungary	HU
Ireland	IE
Israel	IL
Italy	IT
Latvia	LV
Lithuania	LT
Luxembourg	LU
Malta	MT
Norway	NO
Poland	PL
Portugal	PT
Romania	RO
Serbia	RS
Slovakia	SK
Slovenia	SI
Spain	ES
Sweden	SE
Switzerland	CH
The Netherlands	NL
United Kingdom	UK

Table 1. National guidelines for setting speed limits.

	Are there national guidelines on setting speed limits and are they implemented? Are there regular speed limit reviews in your country?
AT	Yes, the Austrian guidelines (RVS) for safe road design and maintenance mention speed at various instances. There is a regular check of all traffic signs (condition, usefulness) foreseen in the Austrian Highway Code. It can be assumed, however, that authorities do not always and entirely implement the request.
BE Wallonia	Service Public de Wallonie (SPW) has several guides on setting speed limits.
BE Flanders	The Flemish government has published speed-limit guidelines "Speed on Flemish roads outside built-up areas" in 2016. The guidelines describe when road authorities have the possibility to deviate from the general speed limit of 70 km/h on local and secondary roads and in which exceptional cases a higher or lower speed regime may be introduced.
BG	No. Speed limits for different road types are regulated according to the Highway Code.
EE	No. Speed limit reviews are made only for high risk road sections.
CY	Yes, the guidelines are closely related to the road design standards for setting speed limits based on road design. There are no regular speed limit reviews. Road authorities together with the police review road section speed limits on a case by case basis.
DE	Yes, the FGSV (Forschungsgesellschaft für Straßen-und Verkehrswesen) has developed guidelines for the design and the construction of roads, bridges etc. Based on the road design, speed limits are defined. The responsibility of the implementation of a road construction lays on different levels depending on the road hierarchy. The guidelines are implemented.
DK	There are guidelines to make a speed plan for municipalities produced by the Danish Road Directorate and local police. Local speed limits and revisions can be initiated locally in cooperation between the local road municipality and local police. Guidelines are implemented.
EL	Yes. Guidelines are partially implemented. There are no regular speed limit reviews.
ES	Yes, guidelines for setting speed limits in specific road segments (junctions, curves) are provided in the handbook of vertical signalling. These guidelines are mandatory for road authorities. In addition, public authorities may establish specific speed limits to reduce accidents and/or pollution.
FI	Yes, there are guidelines which take into account the traffic volumes, forward visibility, amount of intersections, land use, road design and geometry. Guidelines are generally implemented. The existing speed limits are evaluated when needed, for example when regional traffic safety plans are updated, when safety situation and accident numbers are worsening (accidents, accident history analysis), when the purpose of land use changes and when the citizen have given feedback on speed limits. In addition, the speed limits are often evaluated after a suggestion given by accident investigation teams.
FR	Yes, there are several guidelines that apply for construction of new roads and already existing roads. The configuration of the road should attempt safe conditions for a speed limit defined by law. Public authorities may reduce the speed limit in order to reduce the number of collisions or levels of pollution. Local councils together with road operators and citizens discuss possible discrepancies.
HR	No. Speed limits for different road types are regulated according to the Road Safety Act.
HU	No. Speed limits for different road types are regulated according to the Highway Code.
IE	Yes, the National Legal Guidelines (www.speedlimits.ie) came into effect in 2015. Road Authorities are in the process of implementing these guidelines. Road authorities are required to review/update speed limits every 5 years. There have been some limited financial incentives and assistance provided to road authorities to implement revised/updated speed limits.
IT	No. Speed limits for different road types are regulated according to the Highway Code. However, there are Directives and other documents concerning the speed, by the Ministry, local authorities and research bodies addressed to road authorities and technical offices.
LU	Yes. The Traffic Commission of Luxemburg established guidelines for the zone 30.
MT	Yes, the latest national guidelines, the "Speed Management Policy" were published in 2012. All new road designs are reviewed internally to ensure that they adhere to these guidelines. In addition, new national legislation published in 2018 (L.N 291 of 2018), sets a framework for the systematic review of the road network in terms of safety. Following the result of on-site inspections, measures can be taken to improve safety such as lowering of the speed limit, amongst others.
NL	The Dutch safe system approach includes a clear set of guidelines for speed limits. 30 km/h for residential streets where people live, shop, children play and cross the street anywhere. 50 km/h for more important higher volume urban roads, in principle with separate bicycle lanes, difficult to cross the street anywhere (except at intersections).
PL	Yes, in 2017, the National Road Safety Council published only the "Guidelines for speed management on local roads". The guidelines were prepared by the Cracow University of Technology and Gdansk University of Technology. The study also contains rules for determining local speed limits. Lack of information whether these recommendations were implemented in practice by local road administrators.
PT	Yes, there are guidelines (Cardoso, JL, 2009, Recomendações para definição e sinalização de limites de velocidade máxima, https://goo.gl/G7LZ7T) but there are no speed limit reviews.
SE	Yes, the entire speed limit system of Sweden was reformed in 2008 and guidelines were established for different types of roads. The implementation of the guidelines is ongoing.
SI	No
CH	No
UK	Yes
IL	Yes, there are guidelines on setting speeds on the road network, published by the Ministry of Transport in 2010. They introduce target speeds according to the road hierarchy for four types of rural roads and six types of urban roads. Guidelines are partially implemented.
NO	The NPRA circular 05/17 from 2005 provides guidelines for using 30 km/h and 40 km/h speed limits in cities and towns (https://goo.gl/2Aadxu).
RS	No

Information source: PIN Panelists.
Note: information not available from the Czech Republic, Latvia, Lithuania, Romania and Slovakia.

Table 2 (Fig. 1, 2). Proportion (in %) of observed speeds of cars and vans higher than the speed limit on 50 km/h urban roads and mean observed driving speed on these roads in free flow traffic.

Note: data presented in this table are only from countries that were included in the Fig.1 and 2 of the report. More countries could provide some data sets for urban roads. All data received for this report, including information on data collection methodologies, are available in an excel format online at www.etsc.eu/pinflash36

	Speed limit (in km/h)	2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017			Fig.1 Average annual change (in %) in the observed mean speed of cars and vans on urban roads	Period covered
		Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit			
Cars/taxis and vans (below 3.5t)																										
AT[1]	50	52.1	56%	51.2	50%	50.7	51%	51.9	56%	49.4	43%	49.1	41%	48.4	37%	49.2	38%	49.2	45%	49.3	45%	49.5	46%	AT[1]		
BE[2]	50	54.7	66%	55.6	70%	53.4	60%	53.6	61%			52.5	56%					48.5	36%					BE[2]		
CY	50																					47.0	37%	CY		
CZ	50	46.0	30%	45.0	18%	41.0	21%									49.0	42%	45.0	30%	50.0	45%	49.0	43%	CZ		
GB	48									50.0	55%	50.0	56%	50.0	55%	50.0	55%	50.0	55%	50.0	50%	50.0	52%	GB	0.0%	2011-2017
FR	50					49.2		48.8		49.5		49.2		48.6		48.4	43%	49.4	46%	48.1		47.8		FR	-0.3%	2009-2017
IE[3]	50	75.0	86%	60.0	78%	62.9	83%			60.9	82%	61.8	85%	60.0	82%	58.0	76%	58.0	75%	57.0	68%			IE[3]	-2.0%	2007-2016
IE[4]	50	45.0	23%	35.0	4%	34.4	4%			39.1	9%	39.8	10%	41.0	15%	42.0	17%	42.0	16%	41.0	10%			IE[4]	1.0%	2007-2016
SE	50											46.9	39%	47.3	40%	46.8	40%	46.4	35%	45.6	32%	46.5	35%	SE	-0.5%	2012-2017
RS	50															53.4	58%	51.4	51%	52.0	54%	50.8	49%	RS		
All traffic																										
DK	50	52.0	62%	53.0	63%	52.0	62%	51.0	58%	51.0	57%	51.0	58%	51.0	58%	51.0	56%	50.0	53%	50.0	52%	50.0	50%	DK	-0.5%	2007-2017
PL[5]	50	64.2		63.1										61.7	82%	55.9	67%	58.5	75%					PL[5]		
SI	50			56.0	77%	58.2	82%									53.0	56%	53.0	56%					SI		
IL	50					54.0	59%	54.0	60%	53.0	57%	54.0	60%	54.0	61%	54.9	65%	55.1	64%	54.6	58%			IL	0.3%	2009-2016
NO	50	52.5	69%	52.3	67%	52.1	66%	51.3	62%	50.0	53%	49.4	48%	49.5	50%	49.2	47%	49.0	46%	48.8	44%	49.2	46%	NO	-0.8%	2007-2017

Data source: PIN Panelists.
AT[1] - new data collection methodology was introduced in 2015, thus Austrian data are not included in Fig.1.
BE[2] - data collected differently in 2015 than in 2007-2010.
IE[3] - national urban roads, cars only.
IE[4] - national residential roads, car only.
PL[5] - data collected differently in 2013 than in 2014-2015.

Table 3 (Fig.3 and 4.1-4.4). Proportion (in %) of observed speeds of cars and vans higher than the speed limit on rural non-motorway roads and mean observed driving speed on these roads in free flow traffic.

Note: data presented in this table are only from countries that were included in Fig.3 and 4.1-4.4 of the report. More countries could provide some data sets for urban roads. All data received for this report, including information on data collection methodologies, are available in an excel format online at www.etsc.eu/pinflash36

	Speed limit (in km/h)	2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017			Fig 3.Average annual change (in %) in the observed mean speed of cars and vans on rural non-motorway roads	Period covered
		Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit			
Cars/taxis and vans (below 3.5t)																										
AT[1]	70	69.3	41%	69.2	41%	67.9	35%	69.7	43%	68.9	39%	67.2	31%	69.2	40%	68.3	37%	68.9	43%	68.1	41%	67.1	38%	AT[1]		
AT[1]	100	88.4	16%	89.3	20%	88.3	15%	87.1	16%	83.8	13%	91.5	24%	91.1	15%	89.8	17%	85.1	15%	82.4	12%	83.2	12%	AT[1]		
BE[2]	70	74.0	60%	74.0	60%	74.2	61%	71.2	50%			71.9	52%					71.8	41%					BE[2]		
BE[3]	90																	88.0	29%					BE[3]		
BE[4]	90																	97.3	57%					BE[4]		
CY	80																					74.0	18%	CY		
CZ	90	70.0	15%	69.0	14%	69.0	17%									83.0	34%	79.0	20%	84.0	29%	86.0	35%	CZ		
DK	80	84.7	65%	84.8	66%	85.0	65%	83.0	60%	84.0	62%	83.0	61%	83.0	60%	83.0	60%	83.0	57%	82.0	56%	82.0		DK	-0.3%	2007-2017
EE	90																					88.7	27%	EE		
ES	90											92.6	44%											ES		
ES	100											94.2	37%											ES		
FI	80	82.0		81.0		81.5		82.7		82.4		82.2	62%	82.5	63%	83.2	66%	82.8	64%	82.8	64%	82.7	63%	FI	0.2%	2007-2017
FI	100	98.0		97.0		98.1		98.4		98.2		98.1	46%	98.2	46%	98.7	49%	97.9	46%	98.2	46%	97.9	46%	FI	0.0%	2007-2017
FR	90					81.5		81.6		81.3		82.3		79.8		81.5		81.4		81.6	31%	82.1	32%	FR	0.0%	2009-2017
FR[5]	110					100.2		102.7		102.9		102.4		101.5		103.1		105.3		105.2	19%	104.1	20%	FR[5]	0.5%	2009-2017
GB	97									79.0	8%	79.0	8%	79.0	8%	79.0	8%	79.0	8%	79.0	8%	80.5	9%	GB	0.2%	2011-2017
IE[6]	100	89.0	20%	91.0	19%	92.1	23%			90.2	15%	89.7	16%	92.0	19%	92.0	18%	94.0	23%	92.0	20%			IE[6]	0.4%	2007-2016
IE[7]	80	73.0	34%	76.0	34%	79.0	41%			76.8	33%	75.8	34%	77.0	36%	79.0	45%	78.0	41%	78.0	39%			IE[7]	0.3%	2007-2016
PT	90													85.8	43%									PT		
SE	70											67.8	53%							68.3	55%			SE		
SE	80											81.7	58%							81.9	58%			SE		
SE	90											88.5	46%							88.9	48%			SE		
RS	80															78.3	40%	76.3	35%	75.9	34%	75.7	33%	RS		
All traffic																										
PL[8]	90	89.8		91.8										88.4	60%	78.5	38%	81.1	40%					PL[8]		
SI	90			64.0		64.0										64.0	14%	64.0	14%					SI		
IL	90					92.0	60%	91.0	54%	92.0	59%	93.0	56%	94.0	61%	94.0	56%			91.0	54%	92.0	63%	IL	0.0%	2009-2017
IL	80					85.0	67%	86.0	69%	86.0	70%	86.0	70%	84.0	63%	84.0	63%			85.0	65%	86.5	70%	IL	0.0%	2009-2017
NO	70	71.0	58%	70.4	49%	70.3	47%	69.6	49%	69.1	45%	68.6	43%	68.4	43%	68.7	42%	69.0	43%	68.3	40%	68.3	40%	NO	-0.4%	2007-2017
NO	80	78.8	46%	78.9	47%	78.5	45%	78.1	45%	78.1	43%	77.5	42%	77.6	42%	77.4	42%	77.4	42%	76.9	41%	76.1	36%	NO	-0.3%	2007-2017

Data source: PIN Panelists.
AT[1] - new data collection methodology was introduced in 2015, thus Austrian data are not included in Fig.3.
BE[2] - data collected differently in 2015 than in 2007-2012.
BE[3] - cars on two-lane rural non-motorway roads.
BE[4] - cars on four-lane rural non-motorway roads.
FR[5] - dual carriageway.
IE[6] - national primary roads, cars only.
IE[7] - regional roads, cars only.
PL[8] - data collected differently in 2013 than in 2014-2015.

Table 4 (Fig.5 and 6.1-6.4 in the report). Proportion (in %) of observed speeds of cars and vans higher than the speed limit on motorways and mean observed driving speed on these roads in free flow traffic.

Note: data presented in this table are only from countries that were included in the Fig.5 and 6.1-6.4 of the report. More countries could provide some data sets for urban roads. All data received for this report, including information on data collection methodologies, are available in an excel format online at www.etsc.eu/pinflash36

	Speed limit (in km/h)	2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017			Fig 5. Average annual change (in %) in the observed mean speed of cars and vans on motorways	Period covered
		Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit			
Cars/taxis and vans (below 3.5t)																										
BE[1]	120									117.9	41%							123.0	53%					BE[1]		
CY	100																					105.0	63%	CY		
ES	120							117	49%			118	38%											ES		
FI	120							114.0		114.3		113.6		113.2		116.2		115.0		113.0		114.8		FI	0.1%	2010-2017
FI	100							99.5		99.2		98.8		98.7		99.8		100.5		99.8		99.5		FI	0.1%	2010-2017
FI	80							82.1		75.3		82.1		82.5		83.0		82.4		82.7		81.9		FI	0.6%	2010-2017
FR[2]	110					107.3		104.6		101.6		101.5		101.0		102.1		103.9		103.3	30%	103.5	29%	FR[2]	-0.2%	2009-2017
FR[3]	130					120.4		117.2		115.6		116.7		120.0		120.7		121.4		121.8	28%	120.6	23%	FR[3]	0.4%	2009-2017
IE[4]	120	108.0	14%	107.0	15%	107.6	18%			109.0	16%	109.0	15%	111.0	21%	115.0	28%	114.0	21%	113.0	23%			IE[4]	0.8%	2007-2016
NL	100	95.4		95.9		96.4		96.8	43%	98.6	47%													NL		
NL	120	114.0		113.8		113.9		112.5	33%	113.8	35%													NL		
PT	120													126.0	64%									PT		
SE	110											109.5	53%							111.6	60%			SE		
GB	113									111.5	49%	111.0	48%	110.0	47%	111.0	49%	110.0	47%	110.0	46%	111.0	48%	GB	-0.1%	2011-2017
RS	120															119.1	45%	119.4	47%	116.1	37%	112.1	28%	RS		
All traffic																										
DK[5]	110	111.0	55%	112.0	56%	112.0	56%	110.0	50%	110.0	52%	110.0	54%	110.0	53%	111.0	52%	111.0	50%	111.0	52%	111.0	50%	DK[5]	0.0%	2007-2017
DK[6]	110	117.0	69%	117.0	70%	117.0	70%	116.0	68%	116.0	66%	117.0	69%	117.0	68%	115.0	63%	115.0	61%	114.0	61%	114.0	59%	DK[6]	-0.3%	2007-2017
DK	130	122.0	31%	122.0	31%	123.0	32%	122.0	30%	121.0	29%	120.0	24%	120.0	24%	120.0	24%	120.0	24%	121.0	25%	120.0	23%	DK	-0.2%	2007-2017
FI[7]	120	106.8		106.2		106.3		105.8	43%	106.9	46%	106.7	44%											FI[7]		
FI[7]	100	98.4		97.7		97.0		97.0	41%	96.9	41%	96.1	40%											FI[7]		
LT	110	105.3	42%	105.0	41%	105.2	41%	103.1	33%	104.0	37%	99.9	33%											LT		
LT	130	112.5	22%	111.4	19%	111.9	21%	110.9	20%	111.5	21%	109.5	19%											LT		
PL[8]	140													128.9	62%	114.0	53%	121.5	62%					PL[8]		
SI	100			110.5	89%	109.8										102.0	48%	101.0	46%					SI		
IL[9]	120					108.0	48%	106.0	41%	109.0	49%	110.0	52%	108.0	46%	108.3	49%			106.2	31%	102.5	32%	IL[9]	-0.4%	2009-2017
NO	100	98.7	50%	99.8	53%	99.1	53%	98.8	52%	98.7	52%	98.9	53%	99.2	55%	99.2	57%	99.5	56%	99.7	56%	100.1	53%	NO	0.1%	2007-2017
NO	110																					102.3	34%	NO		

Data source: PIN Panelists.
BE[1] - data collected differently in 2015 than in 2011.
FR[2] - bypass motorways.
FR[3] - intercity motorways.
IE[4] - cars only.
DK[5] - in Copenhagen area.
DK[6] - outside Copenhagen area.
FI[7] - data on proportion of observed vehicles above the speed limit are average of winter and summer measurements.
PL[8] - data collected differently in 2013 than in 2014-2015. General speed limit on motorways was increased from 130 km/h to 140 in 2011.
IL[9] - general speed limit on motorways was increased from 110 km/h to 120 in 2015.

Table 5 (Fig.7). Proportion (in %) of observed speeds of HGVs higher than the speed limit on rural non-motorway roads and mean observed driving speed on these roads in free flow traffic.

	Speed limit (in km/h)	2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017	
		Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit
AT[1]	70	71.0	55%	71.0	57%	69.0	48%	70.0	48%	68.0	43%							72.3	26%	67.1	14%	68.2	15%
CY	90									88.0	55%											79.0	6%
CY	70									55-65												64.0	9%
CZ	80															76.0	41%	74.0	27%	77.0	42%	77.0	41%
ES[2]	70											81.1	44%										
ES[3]	80											82.2	25%										
FI	80	80.3		80.0		80.2		79.2	53%	79.3	53%	80.6		80.7		81.0		80.9		81.0		81.1	
IE[4]	80	80.0	48%	81.0	59%	82.4	61%			81.0	59%	89.6	69%	83.0	70%	62.4	82%	81.0	58%	82.0	61%		
IE[5]	80	82.0	48%	81.0	57%	80.5	57%			79.6	52%			81.0	60%	63.8	81%	81.0	54%	81.0	59%		
PT	80													77.3	42%								
SE	70											66.7	56%							65.9	52%		
SE	80											78.6	53%							77.4	47%		
SE	90											80.2	62%							81.4	67%		
GB	80									74.0		73.0		71.0		71.0		73.0	24%	74.0	26%	76.0	31%
IL	90					84.0	42%	83.0	35%	80.0	39%	85.0	37%	83.0	37%								
IL	80					79.0	52%	80.0	56%	81.0	59%	81.0	57%	79.0	53%								
RS	80															87.5	66%	86.5	61%	87.7	65%	85.5	63%

Data source: PIN Panelists.
AT[1] - data on HGVs and buses together.
ES[2] - when the legal speed limit for an HGV is 70 km/h, it is 80 for a bus.
ES[3] - when the legal speed limit for an HGV is 80 km/h it is 90 for a bus.
IE[4] - dual carriageway roads.
IE[5] - narional primary roads.

Table 6 (Fig.8). Proportion (in %) of observed speeds of HGVs higher than the speed limit on urban roads and mean observed driving speed on these roads in free flow traffic.

	Speed limit (in km/h)	2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017	
		Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit	Mean speed	% above speed limit
AT[1]	30	30.0	49%	31.0	65%	31.0	55%	31.0	54%	25.0	28%							29.2	47%	29.5	50%	29.7	53%
AT	50	49.0	40%	48.0	37%	48.0	35%	50.0	49%	47.0	39%							43.6	24%	43.5	26%	45.1	29%
CY	50																					42.0	23%
CZ	50															48.0	42%	45.0	31%	49.0	49%	48.0	41%
IE[2]	50	66.0	74%	55.0	68%	58.1	77%			54.7	64%	59.0	78%	56.0	77%	53.0	63%	56.0	66%	55.0	66%		
SE	50											43.0	28%	41.6	16%	43.2	16%	40.9	13%	43.6	31%	40.2	13%
GB	48									49.0	50%	50.0	53%	49.0	53%	49.0	52%	49.0	52%	49.0	50%	49.0	49%
IL	50					45.0	22%	54.0	61%	51.0	49%	55.0	61%	54.0	58%								
RS	50															47.7	36%	46.6	32%	46.8	31%	46.2	28%

Data source: PIN Panelistss
AT[1] - data on HGVs and buses together.
IE[2] - national roads.

Table 7 (Fig.9, Table 3 in the report). Total number of speeding tickets and the number of those sent after an offence was detected by a fixed or time-over-distance safety camera.

	2010		2011		2012		2013		2014		2015		2016		2017	
	Total number of speeding tickets	Speeding tickets from fixed or time-over-distance camera	Total number of speeding tickets	Speeding tickets from fixed or time-over-distance camera	Total number of speeding tickets	Speeding tickets from fixed or time-over-distance camera	Total number of speeding tickets	Speeding tickets from fixed or time-over-distance camera	Total number of speeding tickets	Speeding tickets from fixed or time-over-distance camera	Total number of speeding tickets	Speeding tickets from fixed or time-over-distance camera	Total number of speeding tickets	Speeding tickets from fixed or time-over-distance camera	Total number of speeding tickets	Speeding tickets from fixed or time-over-distance camera
AT[1]	4,161,855	3,458,389	4,930,614	4,116,504	4,808,288	4,026,095	4,865,842	4,111,248	4,863,612	4,075,045	4,962,189	4,258,779	5,179,485	4,487,004	5,205,417	4,529,343
BE	2,805,437	n/a	3,252,378	n/a	3,010,797	n/a	3,183,072	n/a	3,364,047	n/a	n/a	n/a	3,297,228	n/a	3,398,975	n/a
BG	n/a	n/a	139,442	n/a	267,344	n/a	300,339	n/a	85,817	n/a	212,157	n/a	336,952	n/a	386,107	n/a
CY	84,402	n/a	93,845	n/a	114,818	n/a	72,713	n/a	76,501	10,664	91,088	26,594	105,428	9,129	103,626	6,555
DK	274,349	n/a	297,729	n/a	264,362	n/a	353,937	n/a	249,705	n/a	465,928	n/a	561,133	n/a	557,287	n/a
EE	30,697	30,697	58,405	58,405	93,574	43,739	100,089	57,575	124,496	81,008	133,853	88,008	166,388	121,038	152,585	118,766
ES[2]	2,104,561	1,736,157	1,923,863	1,582,392	2,308,993	1,985,350	2,170,185	1,769,277	2,456,203	2,080,080	3,283,861	2,986,086	2,897,850	2,619,297	2,883,171	2,600,197
FI[3]	533,816	330,691	525,092	350,500	432,372	295,169	447,932	284,665	414,216	290,269	507,728	279,899	608,906	392,369	613,402	402,548
FR	10,096,626	9,059,730	10,741,848	9,649,052	12,589,223	11,557,352	11,527,436	10,593,787	12,836,313	11,941,725	13,607,233	12,728,539	16,314,896	15,495,390	n/a	n/a
EL	263,382	n/a	238,033	n/a	186,675	n/a	178,816	n/a	156,892	n/a	173,476	n/a	176,592	n/a	214,132	n/a
HR	206,060	n/a	224,883	n/a	218,478	n/a	218,552	n/a	264,237	n/a	279,813	n/a	323,564	n/a	296,666	n/a
HU	538,667	n/a	429,224	429,224	453,208	406,459	297,744	230,219	285,636	216,443	275,433	234,208	279,406	259,761	501,986	462,179
IE	158,123	n/a	262,799	n/a	225,041	n/a	207,920	n/a	226,130	n/a	217,931	n/a	171,717	n/a	147,875	n/a
IT[4]	892,587	773,643	958,833	840,528	770,279	660,041	711,740	606,502	702,092	595,477	792,694	696,475	888,583	725,788	798,608	624,151
IT[5]	1,463,910	n/a	1,416,276	n/a	1,397,850	n/a	1,470,455	n/a	2,777,503	n/a	2,659,205	n/a	2,660,970	n/a	2,843,552	n/a
LV	90,609	0	97,592	6,016	411,016	346,663	129,640	667	107,131	101	148,065	42,450	228,108	97,257	363,047	234,341
LT	119,856	118,524	87,591	85,924	89,046	87,009	120,342	118,038	148,864	146,318	146,347	143,651	166,930	163,296	266,933	245,025
LU	n/a												270,921	254,733	252,632	241,016
MT	33,565	33,433	27,684	27,509	23,770	23,400	15,478	15,242	62,170	62,046	74,241	74,101	73,380	73,257	78,481	78,388
NL	8,303,605	8,175,359	7,403,549	7,315,579	7,600,173	n/a	8,442,360	n/a	6,730,443	n/a	6,636,096	n/a	7,972,227	6,280,217	7,814,043	6,028,911
PL	1,318,970	0	1,551,811	35,000	1,633,986	126,000	1,750,467	262,000	2,102,005	427,000	1,918,959	328,000	2,077,420	430,000	2,125,646	415,000
PT[6]	191,492	n/a	230,828	n/a	262,763	n/a	244,939	n/a	262,424	n/a	n/a	n/a	94,251	n/a	417,620	291,195
RO	962,071	25,705	1,107,655	32,679	750,983	19,222	871,002	21,024	775,615	4,552	754,422	0	824,774	0	710,526	0
SE	220,876	53,073	211,119	50,860	214,025	73,515	203,159	62,578	186,756	72,024	168,207	80,693	144,502	74,352	139,455	70,548
SI	125,848	n/a	103,650	n/a	72,878	n/a	87,166	n/a	99,009	n/a	90,814	n/a	77,255	n/a	117,029	n/a
SK	242,613	0	266,894	0	302,087	0	323,708	0	339,894	6,057	298,248	6,346	257,397	5,747	243,358	7,293
GB[7]	986,744	783,666	738,528	884,749	729,299	609,216	711,739	611,849	743,054	668,081	984,178	933,523	n/a	n/a	n/a	n/a
GB[8]	1,434,468	n/a	1,510,958	n/a	1,655,400	n/a	1,665,171	n/a	1,928,914	n/a	1,938,892	n/a	2,153,000	n/a	n/a	n/a
RS	140,908	n/a	103,341	n/a	114,197	n/a	142,320	n/a	176,243	n/a	267,179	n/a	332,423	n/a	367,022	n/a
IL	200,438	44,512	151,328	44,512	104,166	59,057	140,190	100,633	101,512	65,650	145,080	105,890	155,942	104,667	369,999	283,058
NO	308,822	127,396	291,740	107,721	281,119	98,630	271,539	95,764	256,398	93,123	248,223	90,524	260,569	92,801	237,720	91,546
CZ	n/a															
DE	n/a															
CH	n/a															

	Fig.9 Annual change (in %) in the number of speeding tickets over the period 2010-2017	
MT	20.6%	
RS	20.0%	
LV	13.6%	
LT	13.4%	
IT'	13.1%	
EE	12.2%	2012-2017
BG	12.0%	2011-2017
DK	11.9%	
FR	7.1%	
PL	6.7%	
ES[2]	6.7%	
GB[8]	6.7%	2011-2015
HR	6.5%	2010-2016
IL	6.3%	
FI[3]	2.6%	
AT[1]	2.3%	2011-2015
BE	2.1%	
CY	1.6%	
PT[6]	0.8%	
SK	-0.2%	
NL	-0.9%	
IT[5]	-1.3%	
SI	-1.4%	
IE	-3.1%	
EL	-3.8%	
RO	-4.3%	
HU	-4.8%	
NO	-5.1%	
SE	-6.8%	
CZ	n/a	
DE	n/a	
LU	n/a	

Data source: PIN Panelists.
AT[1] - data refer to offences detected but not the number of speeding tickets.
ES[2] - speeding tickets from offences detected by mobile speed cameras are included in the % of offences detected automatically if the driver was not pulled over and the ticket was issued automatically, data on the number of tickets following checks on roads in urban areas and in the region of the Basque country and Catalonia are not available.
FI[3] - written warning letters, fines, petty fines and crime reports are included.
IT[4] - speed tickets following checks by national police only.
IT[5] - speed tickets following checks by national police, Carabinieri and police in main cities (provincial capitals).
PT[6] - data on % of offences detected by safety camera in 2017 refers to July-December 2017.
GB[7] - number of speeding tickets for England and Wales only. Data on the number of tickets in Scotland and Northern Ireland are not available. Due to changes in reporting system, data prior to 2011 are not directly comparable with subsequent years.
GB[8] - total number of speeding tickets and the number of alternative sanctions imposed as an alternative to a speeding ticket in England, Wales and Northern Ireland. Data for 2016 provided by Road Safety Support Limited. Due to changes in reporting system, data prior to 2011 are not directly comparable with subsequent years.

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European Transport Safety Council

20 Avenue des Celtes
B-1040 Brussels
dovile.adminaite@etsc.eu
Tel: +32 2 230 4106
www.etsc.eu/pin
@ETSC_EU

ETSC
European Transport Safety Council