

# Conclusions of the Executive Seminar on Speed and Speed Management

8 October 2020

## Introduction

The Transport Area of the Florence School of Regulation and the European Commission organised an executive seminar with applied experts, researchers and stakeholders on **speed and speed management in European road safety policy**, which met on 8 October 2020. The conclusions were agreed by the participants but they should not be seen as binding either for the participants or for the organisations they belong to.

A number of participants contributed to an “input paper” on various aspects of speed and speed management. This document constituted a very helpful underlying basis to our discussions. **With the agreement of the authors of that paper, this paper is being published separately on both the FSR and European Commission websites**, along with a – recently received – thematic report from the European Road Safety Observatory<sup>1</sup>.

The following are the agreed conclusions of the seminar:

## Part 1 - Overview

### (a) The importance of speed and speed management in the Safe System

Speed plays a key role in causing road crashes and in their severity in terms of deaths (K) and serious injuries (SI). “The higher the speed of traffic, the greater and more serious the number of crashes; and the higher the speed of a driver, the greater are his/her chances of becoming involved in a crash with a serious outcome.”<sup>2</sup> The exponential model demonstrates this clearly.

Evidence suggests that speed as a factor is more important now than it was 20 or 30 years ago, even with the considerable advances in vehicle safety, for example, during this period. In addition, a large number of cases of relatively “small” levels of excess speeding (exceeding a speed limit by only a few km/h)

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<sup>1</sup> ERSO Thematic Report on Speed

<sup>2</sup> Rune Elvik, input paper, p. 59.

can have much more effect on K/SI overall than a small number of people driving at massively excessive levels of speed.<sup>3</sup>

Speed and its management is therefore “at the core of a Safe System<sup>4</sup> approach and cuts across most Safe System intervention categories”<sup>5</sup>, i.e., to prevent people from being exposed to risk; reduce the risk level; and protect people from harmful energy in the event of a crash. Speed limits therefore need to be designed in relation to the vehicle and the infrastructure, based on human vulnerability inside and outside the vehicle.

There are multiple psychological and social factors linked to speed, and thus resistance to its management, such as the notion that higher speed is “better”<sup>6</sup>. Factors such as optimism bias, driver over confidence and an over-reliance on personal experience lead us to speed. There is also a role that enforcement and associated awareness raising activities can play in actually changing attitudes to speeding (much as visible enforcement has played a part in ending the cultural acceptance of drink driving).

The principal issue relates to speed limits which are too high for the road environment (see below). At the same time, the credibility of speed limits needs to be taken into account, both in assessing existing limits and in their revision. Credibility in itself must, however, not become an argument for resisting change. Where roads have median barriers, “forgiving roadsides” and segregation of vulnerable road users, and do not have dangerous intersections, operating speeds of 100 km/h or even higher can be considered. So where the infrastructure and pattern of road use justify it, a case for higher speed limits might be made. There are also issues related to speed differential (e.g., speed-limited trucks mixed with cars going at much higher speeds). Communication to the public about crash history on particular roads and better explanation of risk factors generate greater acceptance of changes in speed limits, as do well publicised evaluations of outcomes after changes.

Speed and its role both in causing crashes and more severe crash outcomes have a clear economic impact. Recent work published by the European

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<sup>3</sup> Soames Job, input paper, p. 6.

<sup>4</sup> The principles of the Safe System are sometimes described as Vision Zero or Sustainable Safety etc

<sup>5</sup> Anna Vadeby, input paper, p. 10.

<sup>6</sup> Policy makers over the years have tended to trade off safety against slightly shorter journey times for economic reasons, while we are now learning that more predictable journey times are preferred and more economically optimal.

Commission<sup>7</sup> shows that road crashes have an external cost of 1-2% of EU GDP. There is also a linkage of speed (and road safety more generally) to other policy areas, such as health, air quality, CO2 emissions and noise – all areas where the study cited above also shows that external costs have not been fully “internalised”. The broader relationship of road safety to other societal aspects has been insufficiently appreciated – for example in particular in relation to sustainable urban mobility, occupational health and safety, and the promotion and safety of healthy, societally beneficial activities such as cycling and walking.<sup>8</sup>

Whether private or public sector, fleet owners have an important role in line with the requirements of Directive 89/391 on work related risk assessment, for example in setting a policy of zero tolerance for speeding as they already often have for drink/drug driving or mobile phone use. The potential role of public procurement is also clear in terms of ensuring that fleets are equipped with the latest speed management technology.

### **(b) The evidence on speeding in Europe**

Although Europe as a region has the lowest global level of K/SI, many roads – of all types – in the EU allow speeds which are too high for the safety of all road users present, given the level of protection afforded by the quality of the infrastructure and the vehicles involved. In addition, there is considerable variation of speed limits within the EU on similar types of roads, sometimes even within a country, and great diversity of enforcement practices, e.g., in terms of toleration of excessive speed above a limit before enforcement action is taken. An ETSC (2019) report shows that a high percentage of vehicles are generally exceeding the speed limits on all types of road – on urban roads (by between 35% - 75% depending on the country), on rural roads (by 9% - 63%) and on motorways (23% - 59%). Overall, ETSC estimates that around 2000 lives could be saved each year if the average speed dropped by just 1km/h on all roads across the EU.

The evidence in different European countries generally shows that, where speed limits are reduced, mean speed decreases, and there are consequent

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<sup>7</sup> European Commission (2019): Study on Sustainable Transport Infrastructure Charging and Internalisation of Transport Externalities, and Handbook on the external costs of transport, [https://ec.europa.eu/transport/themes/sustainable/internalisation-transport-external-costs\\_en](https://ec.europa.eu/transport/themes/sustainable/internalisation-transport-external-costs_en)

<sup>8</sup> Margie Peden and Jeanne Breen, input paper p. 50.

declines in K/SI. For example in Sweden, where the speed limit was reduced from 90km/h to 80 km/h on a large portion (21%) of the state road network (mainly unprotected rural roads), the mean speed was found to have reduced by more than 3 km/h and the number of fatalities was reduced by about 40%. In a bigger sample size, in France, where speed limits on similarly unprotected rural roads were reduced in 2018 from 90 km/h to 80 km/h, fatalities were reduced by 12% on the relevant part of the network, an overall reduction of 331 deaths on an annual basis compared to the previous 4 years. As to 30 km/h zones, a SWOV factsheet of 2018<sup>9</sup> reports that many of the effect studies date back to the last century, when such zones were introduced on a somewhat larger scale. In the Netherlands in 1993, an analysis of 150 30 km/h zones without through traffic and with sufficient speed-reduction measures found an average decrease in the number of injury crashes of 22%. Research also shows a direct correlation between the speed of impact in a car-pedestrian/cyclist crash and the risk of fatality for the Vulnerable Road User, even at low speeds. Oslo and Helsinki have both deployed 30 km/h zones effectively as a key part of the success in reducing cyclist and pedestrian deaths to zero in 2019.

Star ratings can be a useful tool in exploring the relationship between road features and speed limits. For example, as regards pedestrian safety, a road would receive the highest rating at all speeds if pedestrian movements were fully managed with footpaths, pedestrian fences and grade-separated crossings. But any road would also receive the highest rating if speeds were 30 km/h or less.<sup>10</sup>

### **(c) Latest developments in the EU and globally**

There have been a number of relevant policy developments in the EU over the last few years. Although the 50% fatality reduction target for 2011-20 will be missed, the EU has re-confirmed this fundamental target to reduce deaths (and now also serious injuries) by 50% by 2030, as well as its longer term goal to eliminate fatalities and serious injuries by 2050. The Commission has set out a Strategic Action Plan for road safety<sup>11</sup> for the next decade, fleshed out in a longer paper<sup>12</sup> in 2019. This document stresses that the Commission has

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<sup>9</sup> SWOV (2018). [30 km/h zones](#). SWOV Fact sheet.

<sup>10</sup> Marko Sevrovic, input paper, p. 35.

<sup>11</sup> COM(2018) 293 final Annex I

<sup>12</sup> SWD(2019) 283 final

decided to base its road safety policy framework squarely on the Safe System approach, which in turn makes speed a central factor. The 2019 paper sets out for the first time Key Performance Indicators including one on speed on which Member States will gather data beginning in 2021 on “the percentage of vehicles travelling within the speed limit”.

Similarly, the Stockholm Declaration<sup>13</sup>, adopted by the Third Global Ministerial Conference on Road Safety in February 2020, called strongly for a focus on speed management. The Declaration references the importance of law enforcement, the specific importance of 30 km/h maximum speeds in cities to protect vulnerable road users, and also noted that efforts to reduce speed will have a co-beneficial impact also on air quality and climate change as well as reducing K/SI. This Declaration has been endorsed by a UN General Assembly resolution<sup>14</sup> in August 2020 which also calls for an action plan to lead us towards a 2<sup>nd</sup> UN Decade of Action for Road Safety, with many stakeholders reiterating the need to make speed management a predominant factor in any new action plan.

## **Part 2 – Future steps to improve speed management at the EU level**

### **(a) What does the EU do at the moment?**

Transport policy, and road safety policy in particular, is not an area of “exclusive EU competence” in EU jargon. In other words, rules are set at different levels of government. Road traffic law (e.g., on speed limits, drink/drive rules, enforcement) lies predominantly with Member States: in particular, it is for the individual countries to set, manage and enforce speed limits. In other areas with direct relevance for speed (such as vehicle safety and road infrastructure safety management, in more detail below) the EU has made use of its competence by taking ambitious legislative action. In any case, a fundamental precept of the Safe System is for all levels of government to play their part in a coordinated manner, and indeed to work closely with all stakeholders.

Areas where the EU is playing an important role in relation to speed management include:

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<sup>13</sup> <https://www.roadsafetysweden.com/about-the-conference/stockholm-declaration/>

<sup>14</sup> <https://undocs.org/en/A/RES/74/299>

- Vehicle safety in successive upgrades of the General Safety Regulation, which contain mandatory safety requirements for all vehicles, such as seat belts and air bags. The EU has required speed limiting (90 km/h) devices to be fitted to new trucks since 2005, which have played an important role in reducing serious crashes involving trucks particularly on motorways.<sup>15</sup> The GSR is now increasingly turning to “active” safety management, such as Intelligent Speed Assistance (introduced in the latest GSR upgrade in 2019), which will be mandatory in all new models from 2022, and in all new vehicles from 2024.
- Road Infrastructure Safety Management (RISM), where the rules were revised in 2019. The scope of the RISM Directives is now expanded to all motorways, other primary roads, and roads that are built using EU funding; to take systematic account of vulnerable road users in road safety management procedures; and sets out a proactive approach to provide a “toolkit” for national safety authorities, e.g., to carry out network-wide risk mapping.
- Enforcement: although this is a Member State competence, the EU made a Recommendation on Enforcement as far back as 2004, and in the Cross-Border Enforcement Directive (2011, republished in 2015), set up a system that allows Member States to identify and share information on vehicle owners who commit road traffic offences abroad, of which a very large share relate to speeding offences.
- Funding infrastructure improvements in Member States through regional funds, and through the Connecting Europe Facility. The Commission and the EIB have worked together to launch the “Safer Transport Platform”, a one-stop shop for road safety investment, and the Commission have also made road safety actions more eligible in other instruments such as InvestEU and the CEF2 Regulation.
- Supporting the development of new technology including through research and innovation framework programmes in areas such as C-ITS which may well be the speed management systems of the future.

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<sup>15</sup> The evaluation of the measure found that speed limiting devices reduced the number of fatal crashes with trucks on motorways by about 9% and crashes leading to serious injuries by about 4% ([https://ec.europa.eu/transport/road\\_safety/sites/roadsafety/files/pdf/vehicles/speed\\_limitation\\_evaluation\\_en.pdf](https://ec.europa.eu/transport/road_safety/sites/roadsafety/files/pdf/vehicles/speed_limitation_evaluation_en.pdf)).

- Helping Member States implement the Safe System – in particular by developing a series of Key Performance Indicators for which data will be gathered by Member States from 2021, including on speed (see above).

**(b) What could the EU do in the future ?**

This was the main area of discussion during the seminar. It was agreed in particular that guidance from the EU level on speed would be very valuable (for example, a Recommendation, as has been used successfully in the EU on blood alcohol levels and related issues). Any such guidance should offer clear guidelines for safe, credible, speed limits for different road types based on clear Safe System criteria, such as on:

- urban speed limits, not least given the growing body of evidence of relatively higher cyclist / pedestrian K/SI in urban areas, and the very specific reference to the need for a 30km/h limit in the Stockholm Declaration, see above. This could cover, for example:
  - (i) guidance targeted to both national and local authorities (depending on who has competence on local speed limits) to set a default 30 km/h limit in urban areas, allowing exceptions only when fully justified on safety grounds or indeed where lower speeds such as 20 km/h are necessary;
  - (ii) encouragement to apply RISM tools (see above) to urban / suburban road networks even if not required to do so by the Directive; and
  - (iii) encouragement / incentivisation of the observance and enforcement of 30 km/h speed limits as part of a broader sustainable urban mobility planning process (SUMP) linked to other urban mobility issues such as health, air quality, CO2 emissions, congestion.
- unprotected rural roads given the likely continued ubiquity of car use outside towns and cities and the relatively high continued level of deaths on non-motorway, non-urban rural roads, e.g., to encourage investment in improved roadside safety, to encourage the separation of slow moving or unprotected road users from vehicles travelling at a high speed, to explain criteria for safe default speeds.

- top speeds on motorways and other main through roads, but stressing:
  - (i) the need for 120/130 km/h upper limits only for roads with specific and demanding technical characteristics; even on these roads, 100 km/h or less may be required on particular stretches of road;
  - (ii) that 120/130 km/h should be the upper limit on all EU-funded (e.g., TEN-T) roads;
  - (iii) the need for dynamic (i.e., lower) speed limits depending on e.g., weather/congestion/ other local conditions such as a high proportion of vehicles travelling at different speeds.

In summary form, guidance could build on this table<sup>16</sup>:

Type of infrastructure and traffic	Risk of crash type (for example)	Recommended maximum speed limits (km/h) based on Safe System
Urban roads with possible conflicts between cyclists/pedestrians (VRU) and motorised vehicles.	Motorised vehicle with pedestrian or cyclist	Default 30 (though could be lower eg 20 in highly mixed traffic eg in city centres, or around schools)
Urban / suburban roads with fully segregated protection for VRU (including at intersections) but with remaining intersections risking side impact for cars	Between motorised vehicles (side impact)	50
Rural roads without median barrier protection risking possible frontal impacts	Between motorised vehicles (head-on)	70/80 (though lower limits may be needed if the roads in question are used regularly by pedestrians or cyclists)
Protected “through” roads i.e., with no possibility of a side impact or frontal impact (only impact with the infrastructure) but other factors eg high traffic volumes	Between motorised vehicles	100
Fully protected “state of the art” motorways		120/130

In addition, any such guidance should cover:

<sup>16</sup> Drawing on different contributions by Anna Vadeby (input paper, section 2.2), Ingrid van Schagen & Letty Aarts (input paper, section 3.1), Marko Sevrovic (input paper, section 3.2) and others.



- the development and use of the EU Key Performance Indicator(s) on speed over time within the overall EU Road Safety Strategy to cover more detail on speed compliance by road type and for different speed limits, and in the future setting KPI *targets* as opposed to just data collection. There is also a role for national development of KPIs to buttress national road safety plans.
- enforcement<sup>17</sup>,
  - (i) cross reference to any forthcoming revision of the EU Cross-Border Enforcement Directive to improve implementation and enforcement of speeding fines, etc., at the EU level;
  - (ii) updated recommendations / guidance on best technical practices such as safety cameras, time-over-distance cameras (“section controls”), automatic number plate recognition (ANPR) systems, targets for safety checks, tolerance thresholds in enforcement etc.;
  - (iii) guidance on follow-up to enforcement actions that is effective, proportional and dissuasive (i.e., updating where possible the 2004 EU Recommendation on Enforcement).
- further development and regulation of technology in both vehicles and embedded in infrastructure at the European / national / local level, as appropriate, to help future management of speed. For example, use of developing Cooperative-ITS technology; or exploring the potential of geofencing particularly in urban and suburban locations.

One key issue discussed was the future development of Intelligent Speed Assistance (ISA)<sup>18</sup>. Dynamic ISA, adapting its speed limits to prevailing conditions, could be used to support dynamic speed management on all categories of road. Consideration should also be given, particularly in the context of future vehicle automation, to non-overridable ISA, as the Commission has already indicated.<sup>19</sup> There is also a need to take a

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<sup>17</sup> George Yannis, input paper, section 2.3, and Ellen Townsend, input paper, section 4.1.

<sup>18</sup> Oliver Carsten, input paper, section 3.3.

<sup>19</sup> SWD(2019) 283 final p. 12.

systemic approach to ISA – for example, it is not just for vehicle / parts manufacturers to integrate ISA in vehicles, but for infrastructure managers to develop signage capacity, software developers to bring forward digital mapping, etc. And the EU should in the future reflect on what is needed to ensure ISA works effectively cross border / transnationally.

- the need for speed and speed management to be placed at the centre of national road safety strategies, including through improved data collection for the future development of KPIs at EU and national (and perhaps in the future, global) level, and again through public procurement.
- private sector engagement on speed management in line with requirements of Directive 89/391 on work-related risk assessment<sup>20</sup>, through adoption of ISO 39001 on road traffic safety management and through a stronger focus on road safety in procurement and fleet management, through voluntary commitments and in occupational safety planning more generally.

### **Part 3 - Final conclusions**

As a final conclusion, the participants at the seminar stressed the central importance of:

- high quality communication on the centrality of speed and speed management at all levels of government;
- the importance of data and data collection methods as this is the key support tool for developing evidence-based road safety policies, such as KPIs; noting that we increasingly have the potential to gather data to radically transform crash investigation involving K/SI; to make more use of dynamic speed limits (linked to future developments of dynamic ISA) and for better enforcement more generally (see above) and for driver support; and

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<sup>20</sup> See also <https://etsc.eu/wp-content/uploads/PRAISE-Thematic-Report-8-Driving-for-Work-Managing-Speed.pdf> and ETSC PIN Report on Work Related Road Safety [https://etsc.eu/wp-content/uploads/PIN\\_FLASH33-final.pdf](https://etsc.eu/wp-content/uploads/PIN_FLASH33-final.pdf) (p. 25)

- the need for partnership between all levels of government and with stakeholders and industry in order to make speed a central issue in road safety, including through encouragement and dissemination of best practices as well as public procurement.

## Participants of the Executive Seminar

Name	Organisation
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