Intelligent Speed Assistance - Myths and Reality

ETSC position on ISA

European Transport Safety Council

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The European Transport Safety Council

The European Transport Safety Council (ETSC) is an international non-governmental organisation which was formed in 1993 in response to the persistent and unacceptably high European road casualty toll and public concern about individual transport tragedies. Cutting across national and sectoral interests, ETSC provides an impartial source of advice on transport safety matters to the European Commission, the European Parliament and, where appropriate, to national governments and organisations concerned with safety throughout Europe.

ETSC brings together experts of international reputation and representatives of a wide range of national and international organisations with transport safety interests to exchange experience and knowledge and to identify and promote research-based contributions to transport safety.

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Introduction

Illegal and inappropriate speed is the single biggest contributory factor in fatal road crashes. It increases both the risk of a crash happening and the severity of injuries resulting from crashes. Managing speed is therefore the most important measure to reduce death and injury on our roads.

But the concern for safety is not the only reason why speed management is important. Following the oil crisis of the 1970s, many lower speed limits were introduced in an attempt to reduce fuel consumption and improve fuel efficiency. Current concerns over climate change and CO_2 emissions have once again stirred arguments for lowering speed limits and improving their enforcement[1].

Modern technology offers substantial improvements to the management of speed and the compliance with speed limits. Intelligent Speed Assistance (ISA) is the term given to a range of devices that assist drivers in choosing appropriate speeds and complying with speed limits.

ISA technologies are however not used on a wide scale and there are a number of ideas circulating as to why this is so. Some of the arguments advanced by opponents of early ISA application deny that speed is a priority. Others state that the technology is problematic, unreliable, or that the data requirements are too demanding. Further arguments surround issues such as liability or data ownership that offer legal obstacles to ISA application.

Following a brief description of ISA technologies and the steps needed to implement them, this publication will outline why such arguments are false and why work on ISA technologies now needs to move on from evaluation to implementation.

1 What is ISA and what are its effects?

Intelligent Speed Assistance technologies bring speed limit information into the vehicle. Navigation devices in the vehicle (typically GPS or GPS enhanced with additional information) give a precise location and heading, whilst an on-board map database compares the vehicle speed with the location's known speed limit. What is then done with this information varies from informing the driver of the limit (advisory ISA), warning them when they are driving faster than the limit (supportive ISA) or actively aiding the driver to abide by the limit (intervening ISA)[2]. All intervening ISA systems that are currently being used in trials or deployment can be overridden.

As a first step, ISA has been developed to help drivers abide by the static speed limits as posted by the roadside. Drivers receive the same information that they see on traffic signs through an onboard communication system, helping them to remember the legal speed limit all along their journey. In the future, this technology will however also be able to indicate at any moment the optimum speed within the legal limit adapted to traffic conditions, road features and weather conditions as well as temporary restrictions such as those for roadworks.

The safety effects that current ISA technology can deliver are already impressive. Research has shown that advisory ISA can achieve an 18% reduction, and non-overridable intervening ISA a 37% reduction in fatal accidents in the UK[3]. In other EU countries, up to 50% of traffic deaths could be avoided if all cars were equipped with supportive ISA[4].

The emissions benefits from such successful speed management are similarly impressive. ISA studies have indicated that CO_2 emissions could fall by 8% from cars using ISA[5]. To date efforts to improve the climate impact of the road sector have focused on the fuel efficiency of new vehicles. Yet how much CO_2 is emitted from the road transport sector as a whole is dependent upon many more factors than the emission of new cars on a test cycle.

1 IEA 2001, IEA 2005. For an overview of other environmental implications of vehicle speeds see Tobias 2004.

2 For a classification of ISA systems, see Bauer and Seeck 2004.

3 Carsten and Tate 2001.

4 Carsten 2005.

5 Carsten estimates improved fuel economy for petrol cars at 8% (urban) and 2% (highway).

Indeed, even if the Community is successful in achieving average new car CO_2 emissions of 120g/km, emissions from road transport would still grow by more than 30% during the Kyoto commitment period[6]. This is because of the addition of a plethora of on board equipment – particularly air conditioning – which offsets gains in fuel efficiency for new cars alongside a growth in the amount driven. Therefore, if we are to face up to our climate challenge, then our transport policies need to be as systemic as our road safety policies; incorporating improvements to cars, the behaviour of drivers, and the infrastructure they use to drive[7]. Additionally, improvements to average fuel efficiency only effects new vehicles. A large penetration of ISA equipped cars will affect the speeds driven by much of the rest of the fleet, though not to the same degree as the ISA cars.

Calls from both sides of the current environmental debate therefore have merit. There needs to be a comprehensive approach to reducing CO_2 emissions from road transport (a call frequently made by vehicle manufacturers) and more needs to be done to improve new car fuel efficiency (a call frequently made by environmental campaigners). But these two objectives do not exclude each other, nor do they preclude a contribution to CO_2 road transport emissions from ISA. Too often in the past a call for a comprehensive approach has been seen as a reason to do less on any one particular element. In fact the scale of the problem of road transport CO_2 emissions is such that much more efforts are needed across the board, including improving the contribution speed management can make via ISA applications.

2 The need for action

There has been extensive research into ISA carried out over the last two decades, including field trials in ten countries from Northern, Southern and Eastern Europe (Austria, Belgium, Denmark, Finland, France, Hungary, Netherlands, Spain, Sweden, U.K.)[8]. This research has shown that

- ISA can bring substantial safety benefits.
- ISA can also reduce fuel consumption and other pollutant emissions from cars – including noise.
- ISA is a cost-effective road safety measure.
- Test drivers show a high acceptance of the different types of ISA trialled and often wanted to keep the system after the trial.
- ISA technologies are robust, reliable and ready to be implemented.

Yet it has also been clear that so far none of the relevant actors have made ISA a priority.

- Most automobile manufacturers have been skeptical towards ISA technologies[9].
- Most European governments have had little ambitions to implement ISA.
- European level action has been limited to financing research.

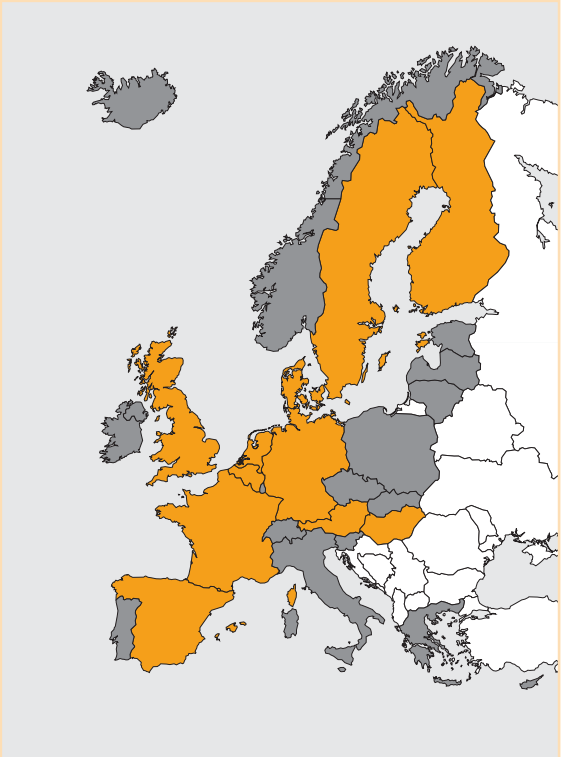


Fig. 1 Countries where ISA trials have been run

6 The Auto-Oil Programme undertaken by the European Commission, Member States and stakeholders estimated that road transport emissions in the EU15 would grow by 34% from 1990 to 2010 assuming compliance with the EU target for new car fuel efficiency.

7 Including the supporting electronic infrastructure.

8 Carsten and Fowkes 2000, Vägverket 2002, Tapio and Peltola 2003, Carsten 2005, SpeedAlert 2005, PROSPER 2005.

9 See ACEA 2005. The position of German manufacturers is described in Huß 2004 and Müller-Merbach 2004. In France, two automobile manufacturers are involved in an ISA demonstration project (LAVIA), and the Volvo Car Corporation states that it is "positive to Informing and Supporting ISA development" (VCC 2005).

Unsurprisingly therefore, the CARS 21 High Level Group has not included ISA in its "wish list" for safety features to be made mandatory across Europe[10].

As a consequence, only nomadic speed warning systems are today on the market, and these systems cover only some parts of the network.

But the time has come to implement vehicle-based, high quality ISA technology on a large scale. To achieve this, the European Union should pass relevant legislation, including technical requirements and a timetable for fitting European cars with ISA.

Technical framework

Experience shows that only a few EU countries have started setting up the necessary structures to provide speed limit information. Only Sweden and Finland have established speed limit databases and have introduced legal requirements to ensure that data is complete and up-to-date. The U.K. and the Netherlands have started this process.

But ISA cannot work without continuous access to high quality speed data. Therefore, European level legislation is needed to set up a **harmonised technical framework** including data requirements, interface specifications (speed data-vehicle interface, human-machine interface) and criteria for system performance evaluation. Most importantly, this legislation must lay down the requirements for the provision of and access to up-to-date speed data.

Timeframe

Moreover, there are few signs of market-driven deployment happening and therefore an **ambitious but realistic timeframe** is needed to speed up implementation of ISA technology.

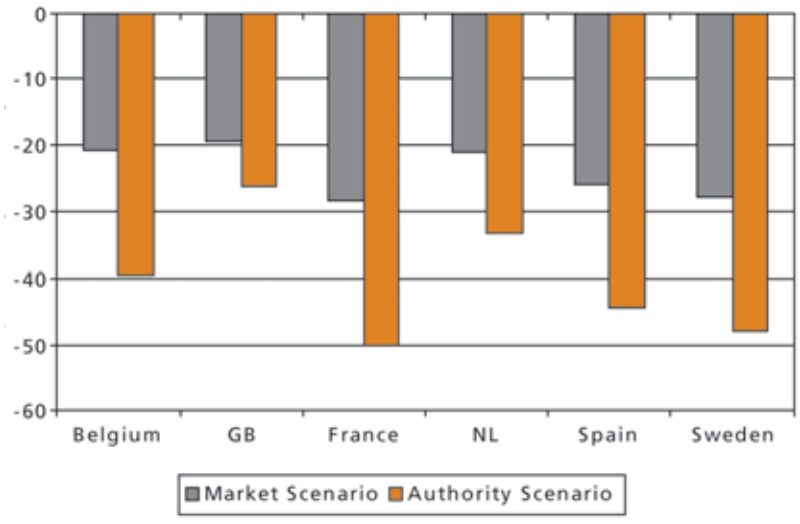
Recent research carried out under the PROSPER project has shown that requiring the fitment of ISA in new cars, rather than waiting for market forces to act, will both increase and accelerate the safety gains from ISA. The predictions for two different scenarios of implementing ISA in six EU countries (Belgium, Sweden, Spain, France, the U.K. and the Netherlands) show that

- If each country first encourages the use of ISA and then mandates it for all cars (authority-driven scenario), fatality reductions of 26-50% can be expected in 2050, depending on the country.

- If ISA is fitted to cars on a voluntary basis (market-led scenario), fatality reductions will however be no higher than 19-28% over the same period.

These calculations are based on the assumption that speed limit data are complete in 2010 for these six countries. In the authority-driven scenario intervening ISA would be introduced using 'sticks' (e.g. requiring ISA for persistent speeders or young drivers) and 'carrots' (e.g. tax cuts and installing it in public authorities' fleets). By 2035, 90% of the car fleet would be equipped with (mostly intervening) ISA and legislation would come into force that requires

Fig. 2 Reductions in road deaths in 2050 by country and scenario, Carsten 2005.



[10] Cars 21 High Level Group 2005.

compulsory usage of intervening ISA by all car drivers. In the market-driven scenario most cars would be fitted with supportive ISA in the first years while intervening ISA would be introduced more slowly. By 2035, about 70-80% of all passenger cars would be equipped with this type of ISA and the remaining 20-30% would have intervening ISA installed. By 2050, 70-80% of all cars would be fitted with intervening ISA and only 20-30% would have supportive ISA installed[11].

Moreover, speed management is a government task and the European governments will realise important economic benefits for their citizens if they decide to encourage and eventually require them to install ISA in their cars. EU countries should therefore wait no longer for industry to act but set the scene themselves. They should as a first step promote the industry's efforts by supporting additional research and standardisation, by introducing tax cuts as incentives to install ISA and becoming first customers of ISA technology. As a second step, they should require ISA by law. What type of ISA is introduced at that point will depend on the political decision makers. In any case, an EU Directive will only set out minimum requirements and EU countries will be able to introduce legislation that goes beyond these requirements.

The current approach to speed management relies on the regulatory requirement for the manufacturers to include speed instrumentation in a vehicle. It is the responsibility of governments and not manufacturers to allow and encourage a new approach to speed management by changing those requirements.

This is because the sooner ISA spreads across the European vehicle fleet, the sooner we can realise the technology's important safety and environmental benefits.

3 Ten ISA myths and why they are wrong

Despite research indicating the huge benefits and feasibility of introducing ISA, a number of criticisms have been put forward that have hindered a widespread use of Intelligent Speed Assistance technologies.

This chapter reviews ten of these arguments and examines the research evidence surrounding them. The results reveal that many of the criticisms are either unfounded or seriously flawed and do not accurately present the majority of research evidence. They are myths and they are wrong.

[11] Carsten 2005.

Myth 1: ISA is too immature a technology

CLAIM: "*Major work still needs to be done to develop this technology. For example, ISA technology is not yet accurate enough to cope with situations of roads next to each other with very different speed limits.*"

REALITY: ISA technologies have benefited from the recent advances in satellite navigation and the increasing IT applications found in vehicles today. The implementation of e-call technologies will further facilitate ISA technologies. The Memorandum of Understanding on the implementation of e-call technologies has already been signed by all the manufacturers.

Even before these advances, several studies evaluating ISA technologies had provided positive results and numerous field trials had confirmed the accuracy, efficiency and robust nature of the technology. In these field trials ISA processing electronics have been added to the host vehicle. What remains to be done is that ISA technology must be integrated into the original system architecture of cars and other vehicles. This requires some further examination at a pre-competitive level to ensure compatibility and rigorous analysis.

ISA technologies do work, are robust and reliable. They are technically simple, much simpler than other automatic devices such as collision avoidance systems.

Some more investigation is also needed into interfaces to both driver and vehicle systems. This will have a significant impact on driver satisfaction and safety. The experience in the various trials (e.g. in Spain, Hungary, Belgium) has shown that the various types of active accelerator pedal deliver satisfactory results here.

There is no "waiting for a perfect solution" – ISA will gradually improve in performance.

Myth 2: Accurate speed-mapping is too complex

CLAIM: *"Providing accurate and up-to-date map information based on a speed limit database is too complex to be undertaken."*

REALITY: The provision of updated speed limit data is complex, but it is not so complex or demanding that it cannot be undertaken.

The information on speed limits is currently held and stored, but in a variety of formats and by a variety of authorities. A first mapping of all speed limits in force is therefore required. Following this, an administrative structure will need to be created to ensure the collation, maintenance and quality assurance of this data source. How this is undertaken in each Member State will reflect the administrative structure of the authorities that currently are responsible for the data.

Once a speed map has been compiled, the updating of this data source need not add a great burden to the authorities that currently oversee the implementation of speed limits. It will however in all probability necessitate a revision of the way in which this data is processed and stored by these authorities.

At a later stage, a service will have to be set up by which the updated information can be downloaded into vehicles as they drive into an area. But this is not technologically problematic.

Delivering and maintaining the relevant map data for ISA is not a problem, provided that legislation is there to ensure action is undertaken in a harmonised way.

Alongside this process, it is of course important that speed data are compatible across Europe. There must be a common understanding of data requirements, interface specifications and system performance evaluation. ISA will therefore require action to ensure standardisation at EU or wider international level.

Myth 3: Not all countries can implement ISA

CLAIM: *"ISA is possible in small countries with few roads and a simple administrative structure e.g. Finland or Sweden."*

REALITY: The idea that countries like Sweden or Finland are small because they have a small population ignores basic geography. Although Sweden and Finland only have a total population of just over 14 million, they have a combined land area of 716,000 km² and a road network extending some 293,000 km. Clearly there will be a greater challenge to digitally map speed information for large countries with many isolated roads and low population density compared to countries with a smaller area and higher population densities. The fact that Sweden and Finland can succeed so rapidly should rather encourage countries with smaller, more densely populated areas that they are able to equally prepare their own digital speed maps.

It is of course true that mapping speed data will be more of a challenge for countries where speed limits are set by a variety of different administrative bodies. But it is not just in the area of speed management where differences in national administrations need to be overcome if European action is to be effective. Very different national administrative structures are evident in most policy fields, with different structures of administration overseeing various areas with differing authority delegated to them. This is the case for all the areas of EU activity, whether it is protecting the environment (from air to water quality) or regulating the internal market (from product standards to state aid). Indeed this is why the instrument of a European Directive was devised. Implementation of the goals and objectives outlined by this European action is left to the individual Member States, which elaborate their implementation appropriate to their own administrative structures.

The differences between EU countries are no more of an impediment for ISA than they are in the other policy areas that see frequent European legislation.

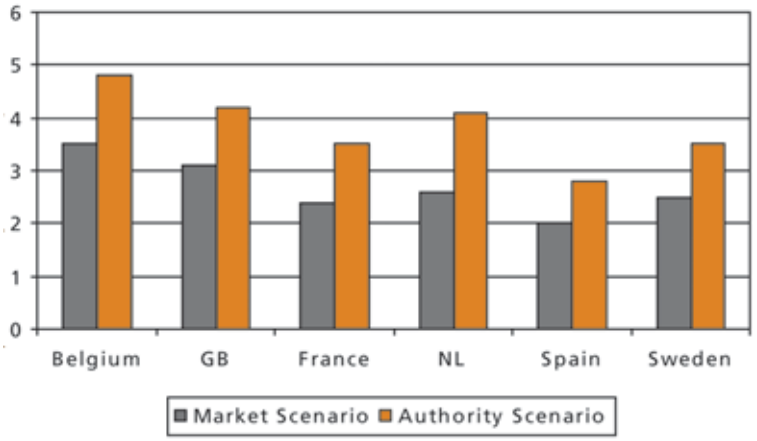
Myth 4: ISA technologies are too costly for society

CLAIM: *"ISA is too costly. The high up-front investments must be justified."*

REALITY: Research has found that gains substantially outweigh the costs of ISA implementation. The benefit-to-cost rates predicted for six EU countries range from 2:1 to 4.8:1, taken into account a period of 45 years from 2005 to 2050. But this depends on the implementation scenario[12].

- If each country first encourages the use of supportive ISA and then mandates it for the remaining 10% of the car fleet (authority-driven scenario, 100% penetration by 2035), benefit-to-cost rates of up to 4.8:1 can be expected, depending on the country.

Fig. 3 Benefit-to-cost ratios by country and scenario, Carsten 2005.



[12] Carsten 2005

- If only those who want ISA install it in their cars (market-led scenario, 40-60% penetration by 2015), the benefit-to-cost ratio will still range from 2:1 to 3.5:1, depending on the country.

In these calculations the cost of setting up and maintaining the speed limit databases has been included. This cost will be high at the beginning and will then decrease. Also the costs for the technology itself will go down over time. Current costs result from relatively low production levels. High volume production runs of the technologies that are needed for widespread application will result in economies of scale and thus unit cost reductions.

The substantial accident reductions to be gained from ISA outweigh its costs, particularly if ISA fitment was required by law. Doing nothing or achieving speed reduction by other means will turn out more expensive in the end than implementing ISA technology.

The predicted benefits from ISA result mainly from reducing death and injuries from road crashes. What has however not been taken into account is that ISA will also reduce the need for traditional police enforcement of speed limits and replace costly physical measures currently used to obtain speed compliance. ISA is much cheaper than any other means to enforce existing speed limits.

Myth 5: ISA puts big brother in the driving seat

CLAIM: *"Taking control away from the driver is just another way for big brother and the state to intervene."*

REALITY: ISA does not mean that complete control is taken away from the driver. The driver is still responsible for the control of the vehicle and ISA technologies are merely a tool to enable the driver to comply with the speed limit.

This is true also for supportive and intervening types of ISA. It is worth noting that the boundaries between these two types are not quite clear cut. Supportive ISA can issue a warning that the current speed limit is being broken in a number of different ways. It can send a visual or auditory signal ('beep') or can increase the upward pressure on the gas pedal (e.g. 'haptic throttle'). But the 'haptic throttle' ISA can also be seen as a mild form of intervening ISA. With the stronger form of intervening ISA such as the 'dead throttle', the driver can still override: he or she can push a button or use a "kick down" functionality if he or she wishes to exceed the limit. The fact that drivers receive more guidance does not fully prevent speeding.

Drivers not the authorities will remain in the driving seat even with ISA.

Moreover, the way in which ISA technologies work needs no central control or collection of data from individual vehicles. Indeed the information flow is in the other direction from a central source (the speed map data) to the vehicle so that the individual vehicle aids the driver in complying with the law. The alternative to improving compliance with speed limits is actually much more 'big brother' – more widespread application of both fixed and mobile speed cameras and of police speed checks.

Myth 6: ISA faces insurmountable liability issues

CLAIM: *"Manufacturers must not be held liable for incorrect speed limit information. They will not compensate customers either for speeding fines incurred or in case of an accident as speed enforcement is something the government should take care of. They cannot push it back to the industry."*

REALITY: ISA technologies intervene in the driving task to a varying degree. With most types, the intervention is no more than what drivers currently encounter from devices such as ABS, ESP, lane keeping support, cruise control, distance warning, etc. Many of the handling and engine management packages currently on offer intervene in some way between the driver and the controls of the vehicle.

Liability is a red herring: industry has already implemented other support systems (advanced cruise control, etc.) that intervene in vehicle control to assist the driver without being concerned about liability.

With all these devices, the driver still remains in control of the driving task. This is also the case with ISA technologies. So the clarification of product liability will not be problematic, certainly no more problematic than for those technologies that are currently promoted in the market place[13].

Myth 7: There is no public acceptance of ISA

CLAIM: *"Speed enforcement is not sufficiently supported by drivers and speed limits are not credible."*

REALITY: The SARTRE 3 survey among drivers from 23 European countries has shown that a majority of drivers recognise the risks involved in driving too fast and support measures to reduce speeding. Depending on the country surveyed, between 39% and 80% of drivers said they were in favour of greater levels of speed enforcement. Overall, 60% of drivers supported more severe penalties for speeding, even though they felt much more likely to encounter speed enforcement that other types of checks[14].

The SARTRE 3 survey has also demonstrated that across Europe, about 55% of drivers would find a system preventing them exceeding the speed limit "useful" or "very useful". A MORI poll carried out in the UK in 2002 has found that as large a majority as 70% of respondents supports a system that alerts them to the legal speed limit on residential roads and on trunk roads in built-up areas[15].

Moreover, when drivers are given the opportunity to try ISA technologies the acceptance of the technology increases rather than decreases. Across Europe, between 60% and 75% of drivers who have tried out ISA technologies said they would like to have the system in their own cars[16]. In all surveys advisory and supportive systems (e.g. with an 'active accelerator' or 'beep' warning) achieved the highest scores. In Sweden, where more than 10,000 people have tested ISA, one in three test drivers would have been prepared to buy the so-called 'active accelerator' ISA, and one in two would have been ready to pay for a sound warning system[17].

A majority of drivers are already in favour of ISA technologies and acceptance increases as they gain experience of using the technology.

This shows that it is only a vocal minority that continue to put the safety of the majority at risk by claiming that speed is unimportant, that drivers should be free to judge what speed is safe or that motorists do not support speed limits. There is actually a majority support for ISA technologies rather than a large hostile groundswell of public opinion.

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[13] Albrecht states that in Germany legal consequences are acceptable for all types of overridable ISA. Even though product liability is partly on the producer, automobile manufacturers are likely to include a disclaimer in their manual. Also it will be hard for costumers to prove that the damage has been caused by system failure (Albrecht 2005:18).

[14] SARTRE 3 2004.

[15] MORI 2002.

[16] Peltola and Tapio 2004.

[17] Vägverket 2002.

Myth 8: Voluntary market-led schemes are more likely to succeed than legislation

CLAIM: *"In-vehicle speed limit information can only be an option for the driver. It cannot be required for all drivers."*

REALITY: Experience has shown that only very few countries have made advances so far to set up the structures supporting ISA and most countries would not do so without facing a legal obligation. As long as no political decision has been taken to implement ISA the necessary structures will not be created and no resources freed.

Moreover, the different national approaches need to be harmonised at a European level so that ISA technology works also when crossing country borders. This will also require European level legislation. But the method for collecting the data and the identification of the responsible authority need not be part of this harmonisation. This can be determined by the individual Member State on the basis of which authorities have been delegated speed limit responsibilities in the past and whether they wish to continue such duties.

The decision whether to rely on legal, market based or industry instruments to apply safety technologies is the domain of policy makers in general and legislators in particular. There is nothing inherent in ISA technologies to undermine this.

Research carried out under the PROSPER project has shown that intervening ISA will increase its safety gains and lead to larger benefits for the same cost[18]. Member States will therefore not be able to take proper advantage of the technology until fitment of ISA is mandated at a European level.

Myth 9: Speed is just one small element in road safety

CLAIM: *"Only a very small part of accidents are related to speeds over the limit. Most accidents are caused by speeds that are inappropriate to the conditions, in combination with other factors such as aggressive driving, tailgating, fatigue etc. So we need to improve driver behaviour in general, not focus solely on speeding."*

REALITY: In fact there are many more accidents linked to speeding than official accident statistics reveal[19]. This is because in most cases, police will not include the accident cause "excess speed" in its crash reporting. Even experts cannot trace at exactly what speed a car was driven ahead of an accident happening, and police have to be able to prove in court that a speeding offence was committed. Therefore they will generally resort to "inappropriate speed" even if the speed was by far exceeding the limit[20].

To improve driver behaviour a comprehensive approach is needed that features education, enforcement and technological support. ISA technologies therefore should be viewed as an important element in a wider approach to improved driving rather than an option to choose instead of other activities.

Research carried out in Germany suggests that speed limits are broken by about 30-90% of all drivers[21], and data from other European countries supports this figure. It would be unreasonable to think that there is less speeding in accidents than there is in the general traffic flow.
Moreover, speeding is often linked to other risky behaviour. Drivers who exceed speed limits have a probability that they will not wear their seat belt that is 87% higher than for non-speeding drivers[22]. The relation between speeding and drink driving is also high.

[18] Carsten 2005.

[19] In Germany, only 1.9% of injury accidents that happened in 2004 were linked to "speeds over the limit", accounting for 8.2% of the total 5,842 people killed. However, 21% of all injury accidents were linked to both "speeds over the limit" and "inappropriate speeds", accounting for 45.5% of fatalities, according to official statistics.

[20] Köppel and Meewes 2003, Carsten and Tate 2001.

[21] Köppel and Meewes 2003.

[22] SARTRE 3 2004.

Myth 10: Other measures improving vehicle technology and infrastructure make ISA unnecessary

CLAIM: *"Car technology will improve so much in the coming years that ISA will no longer be needed."*

REALITY: Passive and active safety measures have greatly improved the safety of vehicles in the recent past. Multiple air bags, Antilock Brake Systems, Electronic Stability Control, enhanced side pillars and crumple zones have all contributed to large improvements in the safety of vehicles on the road. However, most of these improvements have enhanced the protection of car occupants. They have not yet been mirrored by similar improvements that aid the protection of vulnerable road users, nor do they prove adequate for survival if the collision speed is too high.

There is no single vehicle technology remaining to be implemented - neither on the market nor in development - that offers the same safety potential as ISA.

CLAIM: "*Improvements to the road infrastructure will allow current speeds to become safe, and the advent of smart infrastructure will allow speed limits variable to the conditions of the road in real time."*

REALITY: Whilst it is true that improving infrastructure is vital for improved road safety, it is not true that this is a substitute for limiting speed. There will always be the need for a legal speed limit no matter what the design of the road.

Drivers may have a perception that a road is safe because of the standard of design, but the posted limit reflects the time needed to react to a dangerous situation when something unexpected arises. This time increases as a function of speed and is hard for drivers to estimate reliably, and thus it is entirely appropriate that a speed limit appears more conservative than some skilled or confident drivers may consider necessary.

The application of ISA does not impede progress on the other actions needed, whereas blocking speed management and ISA impedes improved road safety.

Driving faster than the posted limit will always therefore increase road risk whatever the design standard of the road in question. This is also true for variable speed limits. which will also be picked up and made more widely feasible by ISA technology in the future. ISA and variable speed limits are therefore not in conflict but are related technological advances.

CLAIM: *"Reducing transport CO2 emissions should focus on ways to further improve fuel efficiency."*

REALITY: It is true that the average fuel efficiency of new cars is improving, but it is improving so slowly that it is unlikely even to reach the modest target established in the European strategy for CO_2 from new cars. Moreover, it is also true that even if the fuel efficiency of new cars were to dramatically improve beyond these levels, road sector emissions are still set to increase rather than decrease. In fact the scale of the problem of road transport CO_2 emissions is such that many more efforts are needed across the board, including the contribution speed management can make via ISA applications.

Reducing the emissions of the transport sector will require a systemic approach with action in all relevant areas and ISA will be an invaluable tool in delivering part of this systemic approach.

4 Conclusion

This publication has reviewed and debunked ten myths that are commonly used to argue against the development of ISA from the research area into the policy domain. Their rebuttal can be summarised as follows.

- ISA technologies do work, are robust and reliable. They are technically simple, much simpler than other automatic devices such as collision avoidance systems.
- Delivering and maintaining the relevant map data for ISA is not a problem either, provided that legislation is there to ensure action is undertaken in a harmonised way.
- The differences between EU countries are no more of an impediment for ISA than they are in the other policy areas that see frequent European legislation.
- The substantial accident reductions to be gained from ISA outweigh its costs, particularly if ISA fitment was required by law. Doing nothing or achieving speed reduction by other means will turn out more expensive in the end than implementing ISA technology.
- Drivers not the authorities will remain in the driving seat even with ISA.
- Industry has already implemented other support systems (advanced cruise control, etc.) that intervene in vehicle control to assist the driver without being concerned about liability.
- A majority of drivers are already in favour of ISA technologies and acceptance increases as they gain experience of using the technology.
- The decision whether to rely on legal, market based or industry instruments to apply safety technologies is the domain of policy makers in general and legislators in particular. There is nothing inherent in ISA technologies to undermine this.
- ISA technologies should be viewed as an important element in a wider approach to improved driving rather than an option to choose instead of other activities.
- The application of ISA does not impede progress on the other actions needed, whereas blocking speed management and ISA impedes improved road safety.
- A comprehensive systemic approach to reducing emissions from the road sector should not impede improvements in any one area, rather it should facilitate greater efforts in all areas including the management of speed and the application of ISA.

Having cleared the road of these obstacles we can now drive forward quickly the implementation process – the only time increased speed will enhance road safety.

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