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## **NOT IN MY CAR!**

### **POLITICAL PERSPECTIVES ON INTELLIGENT SPEED ADAPTATION**

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## **ABSTRACT**

In Denmark an experiment with Intelligent Speed Adaptation (ISA) based on Pay As You Speed principles was undertaken. The experiment was planned for 300 cars but in the end only 153 drivers were recruited. For the 153 the results were very positive, e.g. results show that the speeding percentage on e.g. rural roads decreased from 17% to 4%. With the hope of recruiting 'ambassadors' or 'role models' for the cause local politicians were under the trial asked to test the equipment. Afterwards the politicians were interviewed. In this paper results from the interviews are revealed and the political perspectives are discussed. ISA has proven to be an effective means to control inappropriate speeding, but also that voluntary ISA probably not it the way to a large scale implementing of ISA. An important question now is how to convey the positive results. How do we go on with the promotion of ISA, and which actors are likely to participate in the future debate about and implementation of ISA?

## **BACKGROUND**

Is now a good time to talk about the problems related to excessive speeding? In the United States traffic kills as many people every month as were killed in the 9-11 attack on the World Trade Centre. (1) Speeding is one of the reasons why this happens: The European Transport Safety Council has made the assessment that inappropriate speeding is involved in around one third of accidents resulting in vehicle occupant fatalities. (2)

In Denmark the number of people killed in road accidents had for some years been decreasing. The Danish Traffic Safety Commission was expecting the annual number of traffic deaths to go down to 200 by the end of 2012. However, during the latest two years the number has been increasing. In 2008 almost 400 people died in traffic accidents on the Danish roads. (3)

For all of Europe the European Commission in 2001 set a target of halving the number of persons killed on the roads by 2010. However this goal is far from being reached. 41,600

people were killed and 1.7 million were severely injured in the 1.3 million accidents that occurred on Europe's roads in 2005. (4)

The topic 'traffic deaths' is often on the agenda in Denmark. Excessive speeding plays a serious part in the fatal accidents on the Danish road system. One could ask whether now is a good time to do something more fundamental about this problem. The answer to this depends on whether the perspective is idealistic or strategic. *Idealistically* any time is a good time. Traffic fatalities due to speed are tragedies and should be dealt with and most preferably totally avoided. Moreover cars consume more fuel when speeding. *Strategically* it would be a good thing to allocate energy, politically and scientifically, to solutions which are realistic solutions to real problems. The problem is real - which solutions are realistic?

People who drive cars are responsible for their own behaviour - or are they? Being on the road in your car you might feel a sense of freedom and solitude – but you are not alone. Hundreds or thousands of car drivers, bike riders and pedestrians together make up a structure: Traffic. In traffic there are laws and rules to abide by and one's behavior is of importance to many other people than one self.

When it comes to politics the question of regulating excessive speeding in Denmark is not one to be answered at exclusively one political level. *Local politicians* decide on local measures to lower speed such as where to put up physical barriers and which kinds of roads to build and, in cooperation with *the police*, which speed to allow on the different local roads. *The national politicians* take decisions about allocation of financial resources to campaigns, to the police, to the national roads and to new measures to deal with excessive speeding. *The Traffic Safety Commission* supplies the politicians with facts and suggestions as to measures and means of road safety and *The Danish Road Safety Council* is another actor in this field, although their main purpose is informing and educating the public. On the *international level* the European Union support networks between European actors within the area of traffic safety. On every level *citizens and civil society organizations* have different possibilities for influencing the policy process and the political decisions.

When it comes to speeding and traffic accidents in which speeding is involved as a factor people sometimes seem to be kind of 'schizophrenic'. Being in one's car makes one feel safe. And the statistics show that this feeling is understandable since the risk of being involved in a serious accident is actually very small. Thus many drivers do not realize that driving and speeding inappropriately can be a very risky affair for themselves and their surroundings. There is, however, no question as to whether excessive speeding is an extremely important factor in many serious traffic accidents. Göran Nielsson stated in his 'power model' that the numbers of fatalities are changed with the 4<sup>th</sup> power of the speed change and the number of severe injuries with the 3<sup>rd</sup> power of the speed change. (5)

Until now the means to reduce excessive speeding have been mostly physical. However the development of new technology has now made it possible to implement new speed reducing means. *Intelligent Speed Adaptation (ISA)* is a general term used for technical systems, which help a driver adapt her speed to the speed limit at any given spot. An ISA system for instance establishes the geo-spatial position of the car, compares the car's current position and speed with a digital road map of the local speed limit, shows the speed limit and prompts the driver if the speed limit is exceeded. The prompting can be visual and/or audible and the system can include the opportunity of registering the speed limit violation. Some systems have a built in resistance in the accelerator with the opportunity of making it impossible to exceed the speed

limit. An ISA system can therefore be classified as informative, advisory, recording or intervening.

ISA projects have been carried out in many different countries. Trials in Sweden, Denmark, Belgium, UK, France, Australia and the Netherlands have been promising. A very large scale trial took place in urban areas in 4 Swedish cities during the years 1999 to 2002. More than 4,000 cars were involved in this. An average speed reduction of 3-5 km/h was found and it was estimated that if everyone had ISA in these areas road injuries could be lowered by 20%. (6)

In the PROSPER project a policy Delphi survey tried to gather opinions about ISA from different stakeholders in eight European countries, but only 8% of the participating stakeholders was political stakeholders, the rest was primary researchers and representatives from pressure groups and mobility actors. In the survey the stakeholders agreed that ISA will contribute to better traffic safety and they preferred “all vehicle types” to be installed with ISA, but private cars should only have an informative and advisory ISA system. On a longer term an evolution from a voluntary use to a mandatory use was considered to be the best. But there was no agreement on an evolutionary process from an informative and advisory system to an intervening system. (7)

In the city of Ghent in Belgium 37 vehicles were involved in a test drive which included 6 ‘role-model-test-drivers’. These were all public figures from institutions involved in the ISA-project and as such assumed to be positive towards the idea of ISA. The researchers assumed that well known public figures taking part in the test drive made it easier to get the attention of the media. However, the result of the role-model-part of the project has not been reported particularly. (8)

The first Danish ISA project, INFATI (named after the Danish words for ISA: Intelligent Fart Tilpasning), had an informative and an advisory part – a voice reminding the driver of the actual speed limit and saying “*You are driving too fast*”, whenever the driver exceeded the speed limit by more than 5 km/h. The voice would repeat itself every 6 seconds, until the driver lowered her speed. A display would show the speed limit and a small, red light would shine if the speed limit was exceeded. The project was led by the Traffic Research Group at Aalborg University in a period from 1998 to 2001. A trial with 22 test drivers was carried out in Aalborg for 6 weeks.

The INFATI project took place in both urban areas and rural areas, which made it differ from the other trials carried out until then. The decrease of speed was largest in rural areas. An interesting result, because the most severe accidents happen in rural areas (9). The INFATI project also showed that the voice was a quite effective tool for reducing the speed of the test drivers (10). Another part of the project was a web-based questionnaire with more than 1,800 respondents where statements showed that the respondents agreed that speed control in the cars would improve road safety and that the respondents had little respect for the speed limits - especially on motorways and countryside roads. On the other hand the respondents also agreed that ‘the pleasure of driving’ would be reduced with such equipment in the car. (11) During the latest phase of the INFATI project in the autumn 2001 several politicians from the Transport Committee of the Danish Parliament had the opportunity to test the system themselves by driving the ‘project-car’ for half an hour. Afterwards a press conference was set up and the parliamentarians tooled the press about their experiences. In general they were positive to ISA, but however, this did not lead to a ‘political breakthrough’ of ISA in Denmark. (12)

## **PAY AS YOU SPEED**

Instead the INFATI project was followed by a new research project called The 'Pay As You Speed' (PAYS). Compared to INFATI PAYS had many more test drivers, ran over a much longer period and added a financial incentive.

PAYS included an on-board-unit for cars, where a small display showed the actual speed limit and a voice reminded the driver to slow down every time she exceeded the speed limit by more than 5 km/h. After two reminds the system logged the speeding

Young people between the age of 18 and 24 years were the original target group as test drivers and the incentive was a discount in the relatively high car insurance rate that young drivers in Denmark pay. If speeding excessively the PAYS equipment gave penalty points that reduced a promised bonus of 30 % on the insurance. As it was not possible to find 300 young drivers who wanted to participate the project was opened to drivers of all ages and 153 test drivers had the system installed in their cars for between one and three years. The drivers' speeding behaviour was logged, they answered questionnaires and the whole research project will be described in a full report in the summer of 2010.

The results are remarkable. E.g. the proportion of distance travelled exceeding the speed limit by more than 5 km/h on 80 km/h roads decreased from 17 % to 4 %. (13)

ISA is without doubt an effective means against excessive speeding. Having concluded this and having seen that for a long period of time ISA systems have been reliable and ready for implementation on a broader scale, one can wonder why nothing substantial is happening. Why have the recorded effects not resulted in ISA being implemented as a means for fighting excessive speeding? E.g. Sweden has been a pioneer country in developing ISA, but in the latest Swedish traffic safety plan ISA is hardly mentioned as a means of reaching the traffic safety goals stated in the plan. (14). If ISA is to be implemented, in which way could this happen? Which kind of action will be necessary? And which actors are likely to participate in the future debate about and implementation of ISA?

## **METHODS**

An important question to answer before answering the questions above is what the public and the politicians think about a system influencing directly on the driver. Thus the title of the paper: 'Not in my car'. Does the individual driver feel about ISA like the individual neighborhood resident is prone to feel about having unpopular facilities in his or her backyard - called the NIMBY principle: 'Not In My Back Yard'? And what do politicians think about the political perspectives for implementing ISA on a broader scale?

We wanted to find out whether local politicians can be expected to be important actors when it comes to implementing ISA. Are local politicians aware of the new technical possibilities represented by Intelligent Speed Adaptation? Do they see ISA as realistic and ready for implementation? And can they be expected to work as role models or ambassadors for ISA on local and/or national level?

In the city of Ghent in Belgium the mayor, two aldermen, rector and vice-rector from the Ghent University and the general manager of Volvo Cars were involved in an ISA trial as role

models. As mentioned above these persons were positive towards ISA – as they were all working in institutions responsible for the trial. (8)

When we decided to elaborate on the political perspectives for ISA in Denmark the obvious thing to do seemed to be asking some local politicians about their personal and political opinions on ISA. Just like other people politicians' opinions are to a high degree shaped by acting and trying out things. Without having tried out the equipment it can be difficult to imagine what driving with ISA actually feels like and how it affects one's behaviour in traffic. The region of Northern Jutland where the PAYS trial took place consists of 10 municipalities. We therefore asked the 10 local politicians responsible for technical and environmental issues (including traffic safety) to try out PAYS in their own cars for a period of at least six months. Four of the ten local politicians accepted. One refused. The other five presented themselves as positive but in the end they had different excuses for not wanting to participate.

After the test drive we interviewed three of the local politicians who had the system installed in their cars and the one who refused. We asked them questions about traffic safety, speed, their own experiences with the system and their opinions on ISA in general and PAYS in particular. If the politicians turned out to be positive towards ISA they might in some way be able to act as ambassadors for the system – towards the public as well as towards the national politicians. In the next section statements from the interviews are reported and discussed.

## RESULTS

In order to find out whether the local politicians are aware of the new technical possibilities presented by ISA and if they see ISA as realistic and ready for implementation we asked the local politicians about their own experiences with 'Pay As You Speed', their opinions as to which kind of drivers should use it and when would be a good time for a possible legislation and implementation. We also discussed topics such as surveillance, road safety problems, measures to fight excessive speeding, budgets and the public opinion with the local politicians.

We started out by asking each of the four local politicians how they would characterize themselves as drivers. They all started by claiming to abide by the rules in traffic. However the three politicians who did the test drive gave us several statements which showed us that politicians are only human:

"With this machine in my car I found out that I actually do drive too fast. .. When I am busy and when I start my trip 15 minutes too late, I would like to be able to exceed the speed limit. And this is exactly the situation where this voice becomes very annoying." (A)

"This is one of the reasons why I find this system so useful. I used to be a 'quick' driver. Perhaps I was not exactly aggressive, but I was one of those drivers who always leave home a little too late. Thus I excused myself by thinking 'I have to go fast, because I have to reach my meeting'. I do not do that anymore." (D)

"I use my car a lot. .. I drive reasonably. But when I had the ISA equipment in my car, I was constantly reminded .. that I was exceeding the speed limits." (C)

The local politicians had different opinions on the different means of the system. To those who want to decide themselves whether to exceed the speed limits the PAYS was annoying.

**One politician (A)** said: "I do not want this voice in my car at all ... I want to be able to exceed the speed limit." Asked whether PAYS would be a good idea for others the only

useful situation this politician could think of is when a young person is learning to drive or has just had his driver's license.

Probably because she wanted to be positive she instead elaborated on the idea of using the system for something else – measuring car drivers' reactions and the flow of traffic.

Given that ISA should be a general means of fighting inappropriate speeding the national politicians would have to take action, this politician said: "In the municipalities we only have to implement national law. If we want to move things we have to talk to the national Highway Administration, to the Minister, to the members of parliament."

**The second politician (B)** did not want the system in his car at all. However he ended up saying that perhaps 'something' should be put in the cars. He was not at all optimistic about making young people use PAYS voluntarily. If ISA should in some way be implemented this politician thought everyone should have it as no particular group of drivers would then feel 'punished or exposed'. Finally he, like the first politician, mentioned using a system like this for other purposes - taxation, roadpricing and so on.

**The third politician (C)** was in favour of using a system like PAYS for helping drivers lower their speed - especially young men. Personally he found that the system was very supportive and had changed his behavior in traffic. He now uses the warning feature in his own navigation system to lower his speed and it has become a habit for him to react to the warnings. This politician thought the time was right for a system like this and talked about all the money spent in the health care system on victims of traffic accidents.

"If we put together this money, we could spend it on something like this. That could work. Prevention. ... The politicians should regulate and legislate in a way which shows consideration for both the environment, speed and road safety."

**The fourth politician (D)** was very enthusiastic about using PAYS. He had learned to calculate his travel time more precisely; the stress that he used to feel disappeared and it became almost unpleasant for him to exceed the speed limits.

As for the chances of implementing it on national level this politician said that the time will never be right if the politicians do not make the necessary decisions. According to him most people would not choose a system like PAYS voluntarily. Thus the politicians should make up their minds as to whether the number of traffic deaths is serious enough to make a decision.

Normally a common objection against using ISA is the fear of *surveillance*. This is why it is important to stress that a system such as 'Pay As You Speed' does not need to include logging. Of course if one wants to have the opportunity to use a financial incentive there has to be some kind of registration. However the data gathered with this purpose do not need to be kept permanently or to include positions and time. Even though surveillance is often mentioned as one of the most serious problems in connection with ISA by people who are not aware of this and even though two of the politicians were worried about the total amount of surveillance in society today, none of the four local politicians saw it as a problem in connection with ISA.

Asked about the most serious *road safety problems* in traffic today the local politicians talked quite a lot about inappropriate speeding as they were aware that most people drive too fast sometimes and that excessive speeding is a serious problem. The local politicians think that the *speed limits* are realistic and fair. This does not mean, however, that the politicians themselves always respect the limits. When the politicians speak as politicians they see the problem with excessive speeding and want speed reductions on the roads. When, on the other hand, the politicians speak as drivers they admit to be inclined to breaking the speed limit regulations. One of them claimed never to exceed the limits in the cities. On the other hand

this politician wants to be able to exceed the speed limits outside the cities. “You don’t want to be the one stopping everyone, because you abide by all the rules. You have to keep moving. Precisely in this regard the ‘Pay As You Speed’ system is very annoying. In many situations it is better to push the accelerator and clear the spot quickly”, she said. (A)

Another politician claims to be of the opinion that one should keep under the official speed limit. However in some road sections, he says, it is not reasonable to be driving as slowly as the signs tell you to. (B)

On the one hand the politicians would like the drivers to be able to control themselves. On the other hand speed limits, infrastructural measures and police control are mentioned as the most efficient *measures* to make drivers lower their speed. However police controls are not permanent and they are thus only temporarily efficient. Cameras might be permanent but these are not able to cover all of the road system. One of the local politicians describes it like this: The excessive speeding and the number of accidents decrease in road sections with control but outside these sections the average speed is unchanged or increased. (A) The politicians agree that ‘black spots’ in traffic are one of the most important problems and that these spots have to be dealt with. The black spots, more police control, more speed cameras, more information signs and bicycle paths are measures mentioned by the politicians when we ask them how they would spend an extra 2 million EURO on traffic safety. One of them wants to spend some money opening the eyes of the national politicians to the local problems. None of them says anything about spending money on ISA, e.g. by installing ISA in the municipality’s cars.

Like every public budget the *budgets* of the municipalities are under pressure. The local politicians sometimes have to choose between spending money on traffic safety or spending money on for instance the care of children and old people. When we ask the local politicians how they would spend 2 million EURO on Intelligent Transport Systems (ITS) they have difficulties imagining the municipalities as actors in the implementation of ITS or ISA. Spending money on ITS is often not an issue in the smaller municipalities and the local politicians all said that the development and implementation of ISA would not be something the municipalities could take part in. ”The problem in our municipality is lack of money for traffic investments. I do not know what is going to happen nationally, but locally it is a question of having enough money for bike paths, speed reducing measures, maintaining the roads. ... I do not think that has anything to do with the local municipality. .. One could of course go far with different intelligent systems. .. For instance variable speed limit signs.” (B)

The local politician from the biggest municipality in the region said that her municipality already spends money on ITS as they take part in an EU financed programme for traffic safety. (A) ITS has not historically been an area for which local authorities in the smaller municipalities have been responsible and thus they have no or few experiences with ITS. Politicians in the bigger municipalities often have some experience with ITS - however mostly the sort that help control congestion. As described all of the four local politicians in our case have difficulties imagining how ISA can help them in their road safety work.

The *public opinion* is an important factor in road traffic safety as well. One of the politicians says that on the one hand almost every driver exceeds the speed limits every now and then. On the other hand it is virtually a public demand that fast driving through the villages must be avoided. (C) Another politician says that the law has to be in accordance with peoples’ moral opinions or else the law will not be respected. (B) People’s opinions and attitudes can change, though, and as an example of changing attitudes the same politician mentions that drinking

and driving is no longer socially accepted in Denmark. He thinks this is partly due to the many campaigns against this. The local municipalities have the possibility of carrying out local campaigns and one of the politicians believes strongly in changing people's attitudes through campaigning. (D) It seems, though, that the local politicians prefer spending money on infrastructural measures and would rather leave the campaigning to the The Danish Road Safety Council.

The question (not to be answered in this paper) is, however, what comes first. Do peoples' opinions change independently of the legislation? Or does changing the law result in a change in peoples' opinions?

## **POLITICAL PERSPECTIVES FOR ISA**

We talked to four local politicians all together. Three of them tried out PAYS in their own cars and one of them did not want to try it. In conclusion two of the local politicians, who did the test drive, were quite positive towards PAYS. The third politician, who did the test drive, and the politician who did not try out the system were both rather negative. None of the four thought that *local politicians* can play an important role in promoting ISA. If a system such as PAYS were to be implemented, they all said, *national politicians* would have to be involved. Politicians on the regional or the international level were not mentioned by the local politicians. *National legislation* was mentioned as the most efficient means for promoting ISA.

When speaking as politicians the local politicians see the problem with excessive speeding and want speed reductions on the roads. When speaking as drivers, however, they admit to be inclined to breaking the speed limit regulations. Lack of experience, aversion against having the system themselves and the fact that local politicians are not seeing municipalities as actors in the implementation of ITS or ISA means that local politicians are probably not going to take the first steps themselves towards testing, promoting or implementing ISA in their municipalities.

Through research it has been proven that ISA is an effective means for controlling excessive speeding but not a means that is automatically loved by people and politicians. Many citizens are also car drivers and a lot of them value their 'freedom of speed', so even though ISA has proven to be effective, it does not 'sell itself'. The politicians do not, for the time being, feel urged to promote ISA and a commercial breakthrough does not seem to be on its way. Traffic safety can be considered as a kind of public good. Public goods are typical examples of benefits that individual actors - or the market - are unlikely to produce unless public authorities have intervened through regulations or incentives. (15) Thus the IT industry as well as the car industry will probably only be interested in developing ISA equipment or including ISA functions in new cars if the politicians have legislated in a way that makes it compulsory or very attractive to use ISA.

Summing up we see three main *barriers*: the fact that many people are sceptical towards having a system like PAYS in their cars; the prevalent wish for 'freedom of speed'; and the fact that no actors apart from the researchers and developers of the ISA systems seem likely to take any action. The *possibilities* for promoting ISA seem to be the recognized need to act in order to fight inappropriate speeding (16) and the proven effectiveness of ISA.

Sometimes scientists act as neutral observers – or try to do so. Other times scientists have developed and tested something which they think deserves to be promoted. In the case of Pay As You Speed – as presumably in the cases of the other ISA trials around the world - the research team wants the public and the decision makers to open their eyes to ISA as an effective means to control inappropriate speeding. In that sense the most important question now is how to convey the positive results of testing ISA equipment in a situation where neither politicians nor business life seem to be prone to take any initiatives in this area themselves. How do we go on with the promotion of ISA, and which actors are likely to participate in the future debate about and implementation of ISA?

Given that the implementation of ISA in a broader scale requires action from national politicians and some kind of legislation it can be beneficial to take a brief look at political decision making theory.

A policy cycle can include the stages: deciding to decide (agenda setting); deciding how to decide (issue filtration); issue definition; forecasting, setting objectives and priorities; options analysis; policy implementation, monitoring and control; evaluation; and policy maintenance, succession or termination. (17) If ‘road traffic safety’ is the goal, national politicians may decide to improve road traffic safety (set the agenda). They may then decide to leave it up to the municipalities to choose the means (filtrate the issues). The local politicians in the municipalities may then decide to concentrate on inappropriate speeding (define the issue); calculate the costs and benefits of different means (forecast); decide to put up different physical barriers for excessive speeding (set objectives and priorities); find out where to put these (options analysis) and; put them up (implementation). The municipalities may then monitor and control the physical barriers; evaluate the effects and decide to keep the barriers, introduce new ones or take them down (maintenance, succession or termination).

The process of policy making can, however, be seen as an open system or an ongoing process with many participants where some of the participants do not hold formal roles and where political demands, public support and different interests can act as inputs in the different stages and thus influence the outputs. In some processes stages can be skipped or compressed and policy sometimes emerges from small changes rather than from clear decisions and collective efforts to achieve shared goals. (18) In the case of fighting inappropriate speeding this can mean that the politicians on different levels, the public and/or developers of different solutions may influence the process which may result in new perspectives and thus change the outcome. If, for instance, the citizens of a village experience a fatal accident in their village they might make the local politicians spend more money on physical barriers in this village than originally planned – and more money than they spend on road traffic safety in other villages in the municipality. As to skipping stages the local politicians may decide not to calculate the costs and benefits of the different means. Having policy emerge from small changes rather than from clear decisions may be exemplified by a situation where physical barriers in order to fight inappropriate speeding are put up because an architect in the municipal department for techniques and environment initiates the building of roundabouts because she likes the look of them.

Also means for achieving goals on one level can on other levels be goals themselves and have associated means. For instance the goal of improving road traffic safety can be reached by using means such as stopping inappropriate speeding. Stopping inappropriate speeding can be a goal on another level and thus initiate another policy process to find suitable means to do that – one of these means being ISA. On yet another level ISA could be a goal and the

associated policy process could include finding suitable technology and possible actors to take part in the implementation.

Thus politics is not just something ‘politicians do’. Different groups in society have different possibilities of influencing the politicians and the politics. When it comes to Intelligent Speed Adaptation the main stakeholders are the developers, the car drivers and other road users, researchers, politicians on different levels, industry and business life.

ISA systems have been developed, tested and adjusted and are today fairly reliable and ready for some kind of implementation. Car drivers have tested the systems and many of them have been positive. However ISA systems are probably exposed to the problem that the drivers who like the systems most are often the drivers who exceed the speed limits the least. We have seen that drivers in general have little respect for the speed limits and that ISA is an efficient means for controlling this problem. But around the world there in the last years only has been taken a very limited number of actions in regards to promote ISA. The actors seem to agree that some kind of legislative action is a necessary condition for a broader implementation of ISA.

Earlier we asked ourselves the question whether changing the law results in a change in peoples’ opinions. The answer might be that public opinion contributes to changing the law as well as the other way round: that changing the law contributes to changing the public opinion.

Bearing in mind the nature of policy cycles, an implementation of ISA could be the result of a decision making process where road traffic safety is the main goal; the national politicians could decide to legislate on new means; being aware of the effects of ISA could make the politicians choose this as one of these new means and; legislation could be the outcome. The legislation could include ISA as mandatory for special groups of drivers or for special kinds of transport. Role models, test drivers and private as well as public companies with positive experiences could act as interest groups influencing the policy process.

Thus if we want the national politicians to support the implementation of ISA by some kind of legislation we could aim at spreading knowledge and awareness of ISA by means of a more deliberate communication strategy. We should perhaps direct our energy even more in the direction of communicating the results and showing the effects to the above mentioned actors: decision makers, politicians on different levels, the public, the press, industry and business life.

The different stakeholders could to be ‘tempted’ in different ways. Asking local politicians to be ambassadors of an ISA system was not the most powerful means in this respect. However, though the local politicians have difficulties imagining how to contribute to the implementation of ISA, the municipalities are not completely unable to contribute. Cars owned by the municipalities could have ISA installed in order to improve the economy of driving and to decrease the number of accidents. Local industry and business life owning company cars could be tempted by the same arguments and the same goes for public or private companies with different transport tasks – for instance private transport companies, public transport services and the mail services. (19) Also, as suggested by researches in the UK, the municipalities or regions could decide to let the owners of cars with ISA installed have different advantages such as discounts on the costs of on-street parking, discounts on congestion charges (where that may be relevant) and reductions of public transport fares. (20)

In Denmark it has now been decided to develop a digital road map with speed limits as one of the primary attributes. A grant of 3 million € has been given to start the development. (21) And a reliable speed map is a basis for any ISA system so maybe there is some light at the end of the tunnel.

## **CONCLUDING REMARKS**

Intelligent Speed Adaptation has shown to be an effective but not necessarily popular means for fighting excessive speeding. Some people – politicians as well as other citizens – like it, some do not. However, if decision makers seriously want to lower the number of deaths on the roads they will have to either strengthen the existing means or to implement new means as a supplement to the already existing means. Campaigns against speeding appeal to one's consciousness. Regulations such as speed limits can be followed by local police controls and sanctions if the regulations are broken. Physical means such as road humps effectively force drivers to slow down. On the rural roads, however, neither road humps nor too many police controls are efficient or secure. Thus a technical means installed in the cars - such as ISA - can be an effective supplement to the existing means.

If we were to wait for ISA to be commercially profitable without getting any support from important political decision makers we would most probably be waiting in vain. Though ISA probably has some support in the population the IT industry and/or the car industry would not be the ones to promote ISA. Thus public and political support on different levels will be needed in order to promote ISA.

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