

**THE ROYAL SOCIETY FOR THE PREVENTION OF ACCIDENTS  
RoSPA**

**RESPONSE  
TO THE DEPARTMENT FOR TRANSPORT CONSULTATION**

**“REVIEW OF IN-VEHICLE  
INFORMATION SYSTEMS LEGISLATION”**

**January 2007**

## **Consultation Document on Review of In-Vehicle Information Systems Legislation**

This is the response of the Royal Society for the Prevention of Accidents (RoSPA) to the Department for Transport's "Consultation Document on Review of In-Vehicle Information Systems Legislation". It has been prepared following consultation with RoSPA's National Road Safety Committee and its Road Safety Advisory Group.

This section contains the extended answers from the questionnaire supplied with the consultation paper, and should be read in conjunction with our responses marked in the questionnaire.

RoSPA welcomes the opportunity to comment on the consultation paper.

### **12b) What in your opinion is the best way to tackle driver distraction and/or routeing concerns?**

#### **RoSPA Response:**

In Vehicle Information Systems that could potentially cause driver distraction is a road safety issue that must be addressed, as IVIS will become increasingly common in vehicles.

Whilst drivers are expected to deal with a degree of general distraction – effective prioritisation of information is something that drivers should have learnt in order to pass a driving test – IVIS systems can create a more selective withdrawal of attention resulting in mental distraction ('cognitive workload').

Cognitive workload is characterised by a decrease in a driver's ability to effectively scan the environment around the vehicle, specifically from the periphery of driver's usual (un-distracted) observations. The ability to identify, and therefore safely respond to, a hazard is reduced.

There are two questions that are, therefore, raised:

- what tests should be conducted to show whether a product is safe or unsafe
- who is responsible for conducting the assessment and certification process.

The tests could be either qualitative, based on expert assessment and opinion, such as The European Statement of Principals on HMI (ESoP), or quantitative, such as the regime being developed as part of the Human Machine Interface and the Safety of Traffic in Europe (HASTE) project. Another difference between the two is that the ESoP sets design goals which ensure that the driver can receive and use the information given without it causing distraction, where as HASTE assesses the effect that the amount and predictability of information has on driving safety.

Several safeguards need to be considered:

- 1) A method to prevent unsafe products from being sold to consumers (much like how child car seats must meet ECE R44.03 or later, and to sell a seat which does not would be a criminal offence).
- 2) A method to facilitate the removal of unsafe products from the market place.
- 3) A method to help consumers identify the relative safety of each product.

Regulation would be the strongest tool to ensure unsafe products are not sold. This would involve products having to be tested at an independent facility – thus allowing for greater repeatability of the certification process. Repeatability of the evaluation is highly important if the procedure relies on experimental process or individual judgment.

Whilst RoSPA would not rule out other options, such as manufacturer self-testing, the repeatability of the process would need to be guaranteed. Spot checks and written evaluations could be used to ensure that manufacturers achieve certain standards, but what would happen if a manufacturer believed a function on the product does not require a *“long and uninterrupted sequence of interactions”*, but an official inspector did?

It may certainly be the case that a manufacturer's judgment may be different to an independent expert on HMI, and it cannot be assumed that self-compliance will lead to the same level of compliance with standards as a regulatory approach. A TRL report<sup>1</sup>, which assessed the compliance of IVIS to the ESoP, found that *“knowledge of the SoP has not always been reflected in system design”*.

It identified three key areas of non-compliance,

- Documentation
- Driver-input controls
- Excessive demands for interaction with the system during operation, often exacerbated by a large and complex menu facility.

If, on the other hand, self-testing requires an experimental process to test the product against pass/fail variables, what would be done to ensure that the testing procedures in different locations are comparable? It would certainly seem that this route would require regulation.

The current method to remove products that cause significant distraction, due to poor/unsafe design, from the market place would be through the General Product Safety Regulations 2005. This is enforced through Trading Standards Officers.

**24a) Do you think DfT should have a role in examining the safety and routing of route guidance devices on the UK market? Please explain your choice.**

**RoSPA Response:**

The issue needs clear leadership from a single Government Department, rather than scattered responsibilities, and the DfT is best placed to do this in the UK. The role that the DfT can take is either co-ordination of stakeholders or direct control of the licensing.

**26b) Is the current licensing system fit for purpose? Please give the principle reason for your answer.**

**RoSPA Response:**

The aim of the initial legislation was to provide an enabling mechanism to help route guidance companies requiring access to roadside infrastructure. It was not designed to ensure that the routing algorithms impede certain routes to prevent the driver receiving poor information about how that infrastructure should be used.

Assessment protocols for HMI have also improved since the legislation was brought into place.

**27c) Would you prefer a self-compliance scheme to the current licensing regime? If yes, which of the following do you believe are appropriate to form the basis of such a scheme?**

**RoSPA Response:**

An effective self-compliance scheme which will be relevant into the future is preferable to the current legislation. This is not to say that a self-compliance scheme is the only effective way to ensure the safety of IVIS, as discussed in 12b. A combination of regulation and self-compliance may be needed.

The European Statement of Principals on HMI is a good tool for manufacturers to use to ensure that the design of an IVIS is not overly distracting, and that the information that it gives a driver is predictable and manageable. It contains a number of design goals that give a good framework to make a judgment on the safety of a system and its HMI.

The ESoP on HMI also contains design goals for the accompanying manual. It is important that the manual is clear and concise, and gives the driver necessary information. The manual essentially acts as the training course on the IVIS use, in lieu of seeking further driver training with the system. It is important therefore, that the manual should also be a vital part of any compliance scheme. TRL released two reports in 2004 to aid in the assessment of IVIS manuals – '*Design guidelines for usability and safety of In-Vehicle Information System (IVIS) user manual*' and '*In-Vehicle Information System (IVIS) user manual usability and safety checklist*'

However, the ESoP may not be robust enough approach to form the basis of a compliance scheme. Many of the goals do not have pass-fail criterion, and significantly, the principals are designed to test a system while static in a vehicle rather than looking at the effects of an IVIS on safety whilst driving.

Empirical data is a much better tool to assess a systems safety because it can then be compared against a benchmark level of safety. This is where RoSPA believes the assessment of HMI must head in the future, as also stated in *Intelligent Transport Systems (ITS): The Policy Framework for the Roads Sector*<sup>ii</sup>.

Human Machine Interface and the Safety of Traffic in Europe (HASTE) is the best tool currently in development to provide an objective assessment.

**33b) Which of the options presented in Chapter 4.2 of the Consultation Paper would you favour?**

**RoSPA Response:**

The options are:

1. Do nothing - leave the legislation and the licensing regime as it stands
2. Extend the licensing regime to cover all static and dynamic devices
3. Fully deregulate; completely remove the licensing regime
4. Partially deregulate; remove the licensing regime except for systems requiring use of the roadside infrastructure, and introduce non-regulatory mechanisms to encourage self-regulation.

RoSPA would support a combination of Option 2 and Option 4 as a way of ensuring that all systems are designed so as to not distract the driver.

It is clear that the current regulations are not suitable, yet this does not necessarily mean that there should be no criterion that manufacturers should pass before releasing IVIS. RoSPA would certainly support an approach that prevented relatively unsafe, or unsafe, devices from reaching the market initially, and it seems the best way to do this would be by setting standards for the HMI – whether it is a dynamic or static device.

As well as a standard, incentives could be set to encourage manufacturers to go above the minimum requirements – and this is discussed in RoSPA's response to 35a.

**35a) Should DfT incentivise self-compliance to Good Practice criteria? Which of the suggested incentives would you favour?**

**RoSPA Response:**

An excellent way to promote good practice criterion in design is through equipping consumers with the information about a product's relative safety to similar products, and the best comparative information that can be given to consumers is empirical data based on a proven assessment process.

Improving consumer awareness has two effects in improving good practice; it helps consumers make informed choices about their safety, and it encourages manufacturers to design safer devices – as safety becomes a competitive issue within the industry.

Looking at another area of vehicle safety – crashworthiness – we can see how a combined approach between legislation (setting a basic standard which vehicles must pass in order to be type approved) and consumer information (about a vehicles performance above that standard) has consistently improved safety performances in the tests year-on-year.

We also see annual improvement for car manufacturers in the IIWPG crash tests, which have encouraged safer head restraint design<sup>iii</sup>. Between 2005 and 2006, the proportion of seat and head restraints rated 'good' increased from 16% to 22%, and the proportion rated 'poor' fell from 36% to 28%.

RoSPA would therefore suggest that the best way to ensure that all devices on the market are designed so as not to cause danger would be a two-step system as described above.

Firstly, products would have to meet a required minimum safety standard before they are sold. This standard could be from a self-compliance standard based on expert judgment (least favoured by RoSPA) to a regulatory test based on safety related empirical evidence (most favoured by RoSPA).

The second tier would be a consumer assessment program to give devices a star rating; this would need to be an empirical test.

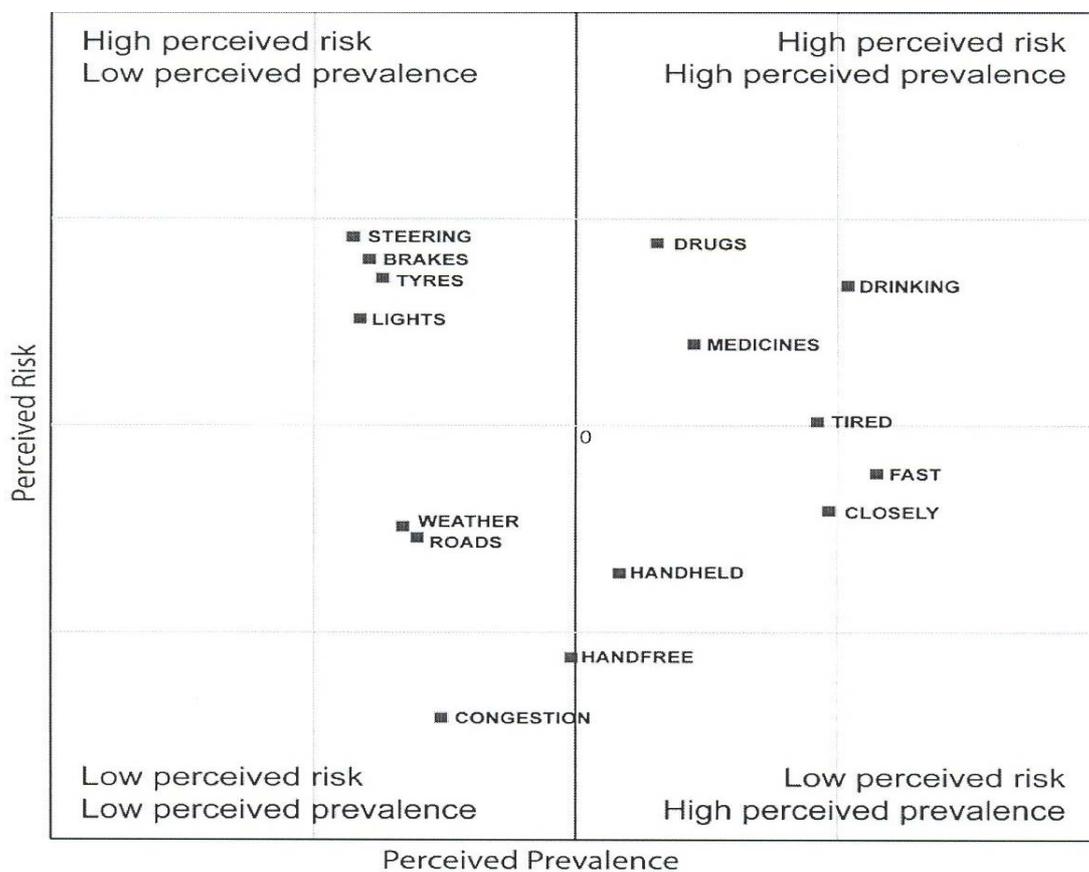
RoSPA believes that this approach has been proven to work well in other fields, and will prevent dangerously distracting devices from entering the market place, whilst also giving consumers information and confidence about what they are buying.

### 36) Do you have any further comments?

#### RoSPA Response:

Education, training, and publicity measures will play a large part in reducing the risk of driver distraction. It is important to focus on ensuring that drivers know about the risks of distraction, and have the skills to deal with and manage the information that IVIS provide.

In terms of informing drivers about the risks of distraction – there is evidence to show that drivers consider it a much smaller risk than other forms of impairment (the two objects on the graph which cause distraction are hands free and hand held mobile phones).<sup>iv</sup>



Organisations have the legal requirement to manage the risk of driver distraction to their employees. RoSPA, with the support of the DfT and the Challenge Fund, has produced a document entitled Driving for Work: Vehicle Technology. This covers many of the aspects contained in the ESoP on HMI: Recommendations for Safe Use and can be downloaded for free, at [www.rospa.com/roadsafety/info/vehicletech.pdf](http://www.rospa.com/roadsafety/info/vehicletech.pdf).

## Conclusion

In Vehicle Information Systems could have a positive impact on driving and change the way we use the road for the better. They assist the driver in making better and more informed decisions. Ensuring that the HMI of the IVIS gives the driver a predictable amount of information at the appropriate time is key to reducing the risk of driver distraction.

If this potential for distraction is not effectively controlled then many of the potential benefits of IVIS could be lost or diminished. Driver distraction connected with IVIS is a major concern of RoSPA.

The present Regulations connected with IVIS are clearly not suitable for the modern day and will become less relevant in the future. It is important that as part of this review, a new system is put into place that cannot foreseeably require replacing or frequently updating.

RoSPA believes that the ESoP is a good resource for IVIS designers, and a system which is designed to achieve most of the goals set will be less distracting than an IVIS which is not. A key part of the ESoP is ensuring that the manual gives the driver the information they need to use the IVIS safely.

The ESoP does not contain pass/fail criterion however, and it depends on the judgement of an expert in HMI. This creates an element of subjectivity in any certification, or self-certification, process.

RoSPA believes that there should be a clear assessment process to ensure that IVIS, which are put on the market for sale, will not create unnecessary distraction. This could potentially lead to an increase in the number of accidents connected with drivers becoming overloaded with information.

In addition to this approach RoSPA is highly supportive of a consumer information program that allows comparisons to be made between different products. This approach has been highly effective in many areas of passive safety.

RoSPA thanks the DfT for the opportunity to comment on this consultation. We have no objection to the contents of our response being reproduced or attributed.

RoSPA  
Road Safety Department  
Edgbaston Park  
353 Bristol Road  
Birmingham B5 7ST  
U.K.  
[www.rospa.com](http://www.rospa.com)

---

<sup>i</sup> EU Statement of Principals for HMI: Final Report, AC Board and A Stevens, TRL540, 2002

<sup>ii</sup> Intelligent Transport Systems (ITS): The Policy Framework for the Roads Sector, DfT, November 2005

<sup>iii</sup> Dynamic testing of vehicle seats to reduce whiplash injury risk: an international protocol, M Avery and A M Weekes, ICrash 2006, Athens, Greece, 2006.

[http://www.thatcham.org/safety/pdfs/ICrash\\_2006\\_Avery\\_Weekes\\_Whiplash.pdf](http://www.thatcham.org/safety/pdfs/ICrash_2006_Avery_Weekes_Whiplash.pdf)

<sup>iv</sup> Results of Social Attitudes to Road Traffic Risk of Car Drivers In Europe, SARTRE consortium, September 2004

<http://sartre.inrets.fr/documents-pdf/repS3V2E.pdf>