



Intelligent Speed Adaptation

May 2007
Version 1

Intelligent Speed Adaptation

What is ISA?

ISA is a system designed to electronically control a vehicle so that it complies with the prevailing speed limit. It has also been known as External Vehicle Speed Control (EVSC).

How does it work?

ISA uses GPS data on the vehicles position and compares it with a map of the road network which contains information on the speed limit. If the vehicle is travelling too fast compared to the speed limit, the system may slow the vehicle to the speed limit by either closing the throttle or changing the fuel injection mixture (in some designs) or by closing the throttle and applying the brake (in others).

Does ISA always slow the vehicle down?

The UK design brief specifies three different applications. The first is an advisory system that informs the user that the vehicle is over the speed limit. The second allows the user to disable the system. In the third application, the system is automatic and will always slow the vehicle down. Some of the UK test vehicles allowed some leeway before slowing the vehicle down to facilitate overtaking.

Are there any technical issues?

There are some significant discrepancies between the physical road layout (i.e. where speed restrictions start and end) and the digital maps used in the trial. This can lead to vehicles slowing down or speeding up before the speed restriction starts or ends. There is also a question of the reliability of GPS data as this is not always available when there are poor atmospheric conditions or when in a tunnel. There has also been no mention of where and when maps in vehicles will be updated. If this is done during servicing, then the cost of servicing could increase, the frequency would probably be based on time not mileage and this will prevent motorcyclists from servicing their own vehicles.



There is also the significant issue that current systems rely on closing the throttle and/or applying the brake. Single track vehicles such as motorcycles are sensitive to throttle and brake inputs, especially when cornering. Current ISA systems could seriously destabilise a single track vehicle.

How long before ISA is compulsory on motorcycles?

The current research project was started in October 1997 and is headed by Leeds University and MIRA. The project so far has worked almost exclusively on cars and there was a brief test on motorcycles in August 2006. Trevor Magner, then the BMF's Senior Government Relations Executive, rode the test bike and said "no amount of development will make it practical for motorcycles."

Following this, the Department of Transport said that all research into ISA for motorcycles had been suspended. However, in March 2007 the Transport Select Committee suggested that speed limiters be fitted to motorcycles.

Intelligent Speed Adaptation

Is it already compulsory on any vehicles?

In the EU, goods vehicles over 10 tonnes and passenger vehicles which carry 8 or more passengers are fitted with compulsory speed limiters which limit the top speed of these vehicles to 100km/h (62mph). These provisions are currently being extended to cover even more vehicles. However, these speed limiters are not the same as ISA as they take no



account of the local speed limit, i.e. it is still possible to drive at 62mph in a 20mph zone.

Is the UK the only country trying ISA?

Other countries researching ISA are Sweden, The Netherlands, Belgium and Denmark. So far, only the UK has tested the system on motorcycles.

What is the BMF's policy on ISA?

"We will not accept any ITS [intelligent transport system] which takes control from the rider, such as Intelligent Speed Adaptation, without incontrovertible proof that it will not destabilise single track vehicles under any circumstances and that it will provide road safety benefits." As none of the systems developed so far appear to meet this criteria, we remain opposed.

Further Reading

UK ISA project website <http://www.its.leeds.ac.uk/projects/isa/index.htm>

Swedish ISA project website <http://www.tft.lth.se/research/ISA.htm>

Dutch ISA project report <http://www.rws-avv.nl/pls/portal30/docs/911.PDF>

Danish ISA project website <http://www.infati.dk/uk/index.htm>

2002 ISA workshop reports <http://www.ictct.org/workshops/02-Nagoya/Index.htm>

DfT papers on EVSC <http://www.dft.gov.uk/pgr/roads/vehicles/externalspeedcontrol/>