

Satellite Navigation Devices

A report by the County Transportation Manager to the Highways Advisory Board on 13 November 2007

Introduction and Background

1. A Satellite Navigation device is becoming the 'must have' accessory of today's motorists. Despite their many strengths there are concerns regarding their accuracy and the tendency of drivers to blindly follow the computer's instructions regardless of the suitability of that route. Sat-Navs have been criticised for sending an unsuspecting driver down unsuitable roads including farm tracks, narrow lanes and closed roads. Reported incidents whereby a rural village has been wrecked by an invasion of heavy traffic and lorries, because drivers have been given this as a through-route by their Sat-Nav, is on the increase. Occasionally lorries have become wedged in narrow lanes as a result of being guided there by a Sat-Nav.
2. Over recent years residents in postcard villages of Kent have experienced the problems with these devices at first hand when lorry drivers have followed the wrong directions on their Sat-Nav systems. The villagers of Mereworth, near Maidstone were in the spotlight this summer when a foreign lorry driver found himself being directed down increasingly narrow roads until his 40ft vehicle became wedged between houses along Beech Road in the village.

In-Vehicle Information Systems (IVIS) Consultation

3. The Department of Transport (DfT) is fully aware of the issues surrounding inappropriate routing of Sat-Nav devices and they are committed to introducing improvements to these systems. Back in January 2007 the DfT produced a consultation on the review of In-Vehicle Information Systems (IVIS) Legislation for which the consultation received responses from a variety of sources. A key element of the IVIS questionnaire was the type of legislation that would be appropriate for regulating the Sat-Nav devices. The information has been used to create a database and the information is being analysed by the DfT. It is expected that a paper will be presented to the Transport Minister later this year.

Sat-Nav Guidance Issues

4. The Sat-Nav Guidance Issues is being looked into by a Network Management Board sub-group set up by the National Traffic Managers Forum that are reviewing some of the traffic management issues that have arisen as a result of inappropriate routing guidance from Sat-Nav systems. The work by this sub-group is focussed initially on understanding the processes that are required to keep base map data and the associated road characteristics up to date. The sub-group currently comprises of the Highways Agency, Transport for London, Ordnance Survey, and various local highway authorities.
5. Access to and updating the Road Routing Information (RRI) is one of the main underlying issues behind poor guidance from Sat-Nav systems. In summary, the data, which is primarily the responsibility of Local Highway Authorities, has to be collated from many sources and is collected in diverse ways by the map and Sat-Nav system suppliers. Data ownership issues further complicate a difficult technical issue. The RRI has a comprehensive restriction and advisory route information facility that includes mini roundabouts, width restrictions, weight restrictions, bridge heights, traffic calming, vehicle restrictions, one-way roads, and vehicle type access restrictions.

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6. The sub-group have been looking at the option of establishing a single, shared Clearing House repository for RRI, to be updated by the Highways Agency and Local Highway Authorities and accessed by the map and Sat-Nav suppliers. This model has been used in Japan to address similar issues. Some of the data under discussion is already being introduced into Ordnance Survey's main Integrated Transport Network (ITN) product and this has highlighted both the technical and commercial issues associated with establishing a Clearing House. While these are not considered insurmountable, it has been recognised that the Clearing House option would need strong central policy from the DfT.
7. An alternative approach for guidance systems would be a "Preferred Route" option as this is based on developing a set of network routes that are suitable for specific types of vehicle. Guidance systems would then use the Preferred Routes as the basis for route selection. This approach removes the need for guidance systems to reference micro-level RRI (for example bridge heights and width restrictions) in journey planning and thus avoids the associated accuracy and update issues. It would, however, introduce a different set of liability issues for the owners and maintainers of the Preferred Route.
8. Freight Routes, which can be provided as a mapping overlay, would be used as a key identifier of the Preferred Route option. Other sets of Preferred Routes identified at this stage included:
 - By vehicle type (including powered wheelers and cycles)
 - Diversion routes, to be activated when a major route is blocked
 - Seasonal variations
9. Systems providers (e.g. TomTom) have led the development of business requirements for navigation, based on some reasonable assumptions of the consumer need. What is now being discussed is putting some business requirements from the network management point of view into that process. If network management issues are to drive the developments then there will be a need for guidance and specification from the DfT to the supplier market.
10. The proposed next steps for the sub-group is to:
 - Obtain feedback from the National Traffic Managers Forum on the need for network management issues to play a greater role in driving the development of navigation devices;
 - Review the two options identified (Clearing House and Preferred Route) in more detail and, in particular, involve one or more of the guidance systems providers;
 - Present the results to the DfT for a discussion of the overall policy issues identified;
 - Review the findings from the IVIS consultation and consider how legislation might be developed.

Sat-Nav Mapping Providers

11. Ordnance Survey (OS) is one of the leading mapping providers to the Sat-Nav industry. OS have started discussions with Local Highway Authorities, Highways Agency, freight associations and other stakeholders to create a master freight map of Great Britain. So far OS have support from several local highway authorities, the Freight Transport Association and the DfT's Freight Best Practice Programme.
12. Some of the Road Routing Information comprehensive restriction and advisory route information data (such as width restrictions, weight restrictions, bridge heights) is being introduced into Ordnance Survey's main MasterMap Integrated Transport Network (ITN) Layer product. The OS MasterMap ITN Layer is used as the base road network for many Sat-Nav devices.

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The Freight Best Practice Programme

13. The Freight Best Practice programme is funded by the DfT to promote operational efficiency within freight operations in England. A key area that is being investigated is the use of Sat-Nav systems for more freight operations. This programme has already highlighted the positive and negative findings of using Sat-Nav and has made some recommendations to the DfT that further enhancements to the route data within these devices is essential for these devices to be 'freight friendly'.
14. The Freight Transport Association (FTA) is already in talks with the suppliers to produce satellite navigation systems that are more compatible with freight operations. The FTA is inviting the mapping and telematics industry to remedy this situation before any more goodwill is lost to the public. The FTA has provided the Sat-Nav industry with a list of data items that its members say are necessary additions to a Sat-Nav system, which includes recommended lorry routes and HGV restrictions.

Sat-Nav Route Signing

15. The Vale of Glamorgan Council in Wales has begun trialling a new road sign, which is designed to stop lorry drivers with Sat-Nav devices from getting stuck on unsuitable country roads. The signs, which picture a lorry and a satellite with a red line through them, have been erected near St Hilary in the Vale of Glamorgan. The signs will be in place for 12 months and if successful, could be used at other locations in Wales. KCC can see the benefit of trialling a new sign informing large vehicles (HGV's) to ignore their Satnav system when approaching unsuitable roads, however we must be mindful that a number of drivers continue to use routes clearly signed as unsuitable for HGV's. Should the trialled sign prove to be a success, then KCC may consider introducing a similar sign onto its highway network.

Conclusion

16. The concerns with the Sat-Nav guidance issues are already being looked at and addressed by a variety of groups and organisations throughout the country. Notwithstanding this KCC must be committed to improving the developments of the satellite navigation systems to provide up-to-date and reliable information that addresses the increasing problems with these devices. Whilst KCC cannot do anything alone to improve the current problems associated with these in-vehicle devices, we can take some appropriate action, as follows:
 - Lobby the Transport Minister and the DfT on the introduction of legislation to improve the technology and information exchange with the developers and suppliers of these devices.
 - Task the Kent Transport Board with setting about developing an action plan towards solving the current Sat-Nav problems. This board would invite representatives from KCC, Road Haulage Association, Freight Transport Association, Ordnance Survey, DfT, Sat-Nav Systems providers and the Royal Institute of Navigation to look at the Sat-Nav issues.
 - Provide Sat-Nav developers with a list of recommended lorry routes across the county and a list of roads that are unsuitable for HGV's or large vehicles.
 - Ensure that Sat-Nav providers are maintaining an accurate and up-to-date map feature on their systems.
 - Await the outcome of the trial of a new Sat-Nav roadside sign in Wales. Should the trial prove to be a success, then KCC may consider introducing similar signs onto its highway network.

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- Work with the Road Haulage Association and Freight Transport Association to encourage haulier's to purchase Sat-Navs that set the instructions for route selection.
- Produce an up-to-date version of a map-based leaflet showing recommended lorry routes across the county with an aim to make up for shortcomings in 'Sat-Nav' systems.

17. Members are asked to consider this report and offer their views of the problems associated with these devices, the progress made to date and the recommended actions to be taken by KCC.

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