## Position Paper

The Traveller Information Services Association (TISA) wishes to provide advisory information to all concerned with Traffic and Travel Information services and products. TISA will issue Position Papers to cover and explain the Membership's agreed policy, as required, in areas of business and technology.

TISA operates within the following Mission:

- TISA offers an environment where the values and needs of service and content providers, broadcasters, public authorities and industry meet.
- TISA creates and maintains global, open traffic and traveller information standards and guidelines that increase the safety and efficiency of travelling.

TISA coordinates the concerns and contributions of its global membership with the aim to foster business, customer and society value of TISA standards-based services and products.

### Delivery Channels for Traffic and Travel Information (TTI) services

This Position Paper is intended to provide some background information about the delivery of TTI services and the issues that Radio Regulation needs to consider for the ubiquitous availability of TTI data services. It is issued jointly with ERTICO-ITS Europe.

TTI services may be delivered by "1-to-1" (point-to-point) or "1-to-a few" channels (point-to-multipoint) such as provided by mobile phone networks or they may be delivered by "1-to-many" channels such as provided by broadcast technology. There have been many studies regarding the business models of these delivery channels and there is no doubt that the former has significant cost. Nevertheless the perceived information value may not be appreciated or even evaluated by the end user because worthwhile content is obtained and thus the end-user will have little appreciation of delivery channel economics. This Paper does not wish to make any value judgement about the costs, but wishes to ensure that broadcast technology is retained as a viable delivery channel, in view of its highly economical capability.

Currently, broadcast TTI data services are delivered using a very narrow band channel, which is part of the RDS technology component of FM broadcasting. RDS-TMC services are delivered in a sub-carrier channel of fixed bandwidth that is added to existing FM transmissions with virtually no impact on the audio channel and with no specific need for regulatory intervention to add RDS features. (Although some regulators have chosen certain regulatory actions, they are not technically necessary.) Thus, in general, the provision of RDS-TMC services has been possible without consideration for extra measures in the broadcast delivery segment and consequently TMC based services have spread worldwide where FM radio is available.

ERTICO and TISA both support the need for RDS-TMC services to continue for many years to come, but gradual transition to TPEG based services delivered via Digital Radio is now required to deliver significantly more TTI content, with expanding aspiration for enhanced traveller info such as safety information, multi-modal information (e.g. Public Transport Information) and on-trip enhancements such as Traffic Flow and Prediction, Fuel Price Information (FPI) and Points-Of-Interest (POI) information. Currently TPEG based services are in the test phase in Europe and this Paper now addresses the longer term data capacity needed within Digital Radio that TTI data services will require.

Digital Radio is equipped to be the TTI data delivery channel for TPEG based services, providing increased information. It is needed extensively and now in Europe to make progress and to add TTI services that match expectations. TPEG services only require a very small part of any Digital Radio multiplex: say 12CU[1] per service = 1.4% only.

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[1] CU = Capacity Units – a way of measuring multiplex payloads

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ERTICO and TISA would like to draw attention to the fact that TPEG based TTI services must be delivered via Digital Radio to meet the objectives of the ITS Action Plan & ITS Directive.

The technical structure of Digital Radio is significantly different from FM Radio, thus some new considerations for the delivery of TTI become important. For RDS-TMC it was relatively simple to add within each allocated 100kHz channel a data sub-carrier at 57 kHz that carries RDS and in turn add the TMC feature – in essence this could all happen with no conflict and no new regulation. Whereas in Digital Radio, due to the audio services and data services multiplexing a more complex managed structure is required to accommodate all services within a particular transmission area, which due to the use of Single Frequency networks will be often at least regional and may even be country wide. Thus in planning Digital Radio services there must be consideration for both audio and data services capacity within a multiplex and planning for frequency availability to provide suitable coverage for both audio and data services. TISA studies have shown that Service Providers establishing TPEG based services currently have a need for 12CU per data service stream.

From these observations we can make the assumption that all national multiplexes should have a reservation for at least one public and one commercial TPEG service. It is suggested that every multiplex shall have a minimum of 24CU reserved by National Regulators for TTI data service deployment. For similar reasons it would make sense that both regional and local multiplexes have similar reservations, to facilitate localised service provision, not requiring national coverage, such as local FPI, POI and Weather information services.

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