

TCM/ TPEG

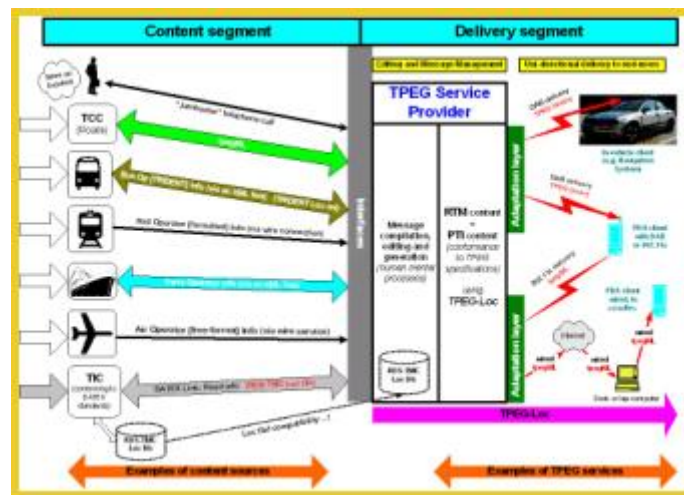
In the late 90s, an increasing demand for more accurate and timely Traffic and Travel Information (TTI) services were identified in the European community. Requirements for more customer added value, also covering the various modes of transport: Road traffic messages as well as bus and train operations. Language independence was essential. RDS TMC was in the middle of a successful rollout in various European countries, however showed also its limitations due to the limited bandwidth of RDS. The implementation of DAB and later on DMB offers a huge opportunity as a carrier for enhanced traffic and travel services.

Sufficient bandwidth is available and above all DAB technology is originally designed for interference free mobile reception.

TPEG Development

TPEG stands for Transport Protocol Expert Group.

The development started in 1997 in the EBU, by a joint effort from broadcasters and consumer electronic industry. The two identified main segments within the TTI domain Content and Delivery is illustrated in the figure below.



The most relevant design principles:

- Bearer independence; byte oriented.
- Language independent applications.
- Permit multi-modal TTI, covering all forms of travel information.
- Support a wide range of products.

- Full backwards compatibility with RDS-TMC.
- Location referencing methods suitable for each service provider, and independent from location tables.

TPEG Project 2000 - 2003

The TPEG technology has extensively been validated and tested in the TPEG project, partially funded by the European commission under the IST program. In a number of countries TPEG test services have been put on air on a DAB broadcast system through the transparent data channel (TDC) without data groups as the generally applied mechanism. Signaling is done in FIG0/13. FIG 0/10 provides the UTC time reference, essential for various elements of TPEG. DAB has proven to be a reliable system for receiving a large number of data in a mobile environment. TPEG has also successfully tested via the internet.

TPEG Standards

The work carried out in the TPEG development and later on the in the TPEG forum went through the standardization process of CEN/ISO. The figure below gives the status of the standards published and submitted in 2007. A number of new applications have been identified as new work item and some are already on its way for standardization.

TPEG Binary – originally developed for Digital Radio delivery	CEN ISO/TS 18234-series Published: 2006-06-01		Parts 1 - 6
tpegML – developed for Internet bearers and message generation using XML	CEN ISO/TS 24530-series Published: 2006-04-20		Parts 1 - 4
CEN ISO/TS Part - topic	CEN ISO TS18234-series	Mapping	CEN ISO TS 2530-series
Introduction, Numbering and Versions**	Part 1 *		
Syntax, Semantics and Framing Structure **	Part 2		
Service and Network Information **	Part 3		
Road Traffic Message	Part 4	<mapped>	Part 3
Public Transport Information	Part 5	<mapped>	Part 4
Location Referencing for applications **	Part 6 *	<mapped>	Part 2
Parking Information	Part 7		
Congestion and Travel-Time Information	Part 8		
Traffic Event Compact	Part 9		
Introduction, common data types and tpegML **			Part 1
Note: Light orange shading shows published CEN ISO TS Parts Light green shading shows submitted CEN ISO Parts * Replacement submitted CEN ISO Part ** see TPEG Forum de facto specifications			

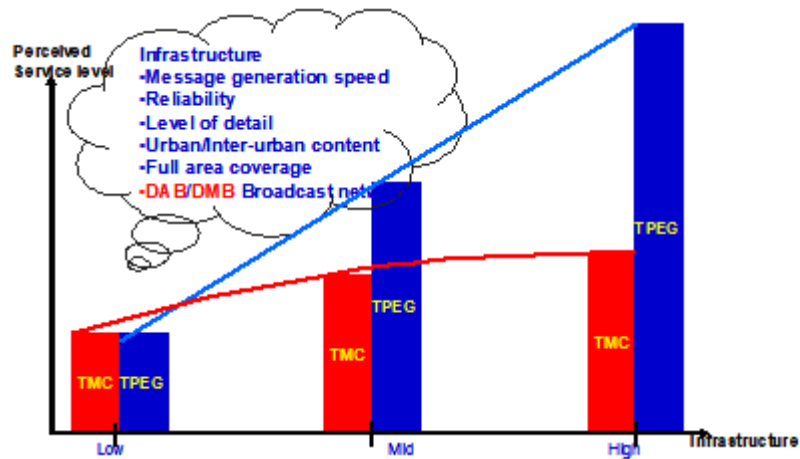
Mobile Info

Over the last couple of years the partners in the mobile.info project led by BMW developed a new application based upon the best elements from both TMC and TPEG technology. The Mobile Info project has defined the TPEG Automotive Profile TAP with a focus on car navigation with dynamic route guidance. A new standard known as TPEG TEC (Traffic Event Compact) contains a structured format of traffic events and route cause information. The DNL Dynamic location Referencing system uses TMC locations as well as codes for on the fly location referencing. TPEG TEC has been submitted to CEN ISO for standardization. At the end of the project more than 20 TPEG test and pre-commercial services were on air

Further roll-out of TPEG

On 21 November 2007 The Traveler Information Service Association TISA has been established.

TISA will continue the work carried out in Mobile Info, TMC forum and the TPEG forum. TISA with a clear focus on market and business models will develop new applications and carry forward issues started in the TPEG form like Weather for Travelers.



As shown above, DAB and DMB in particular have a great potential for high level traffic and travel services.