TPEG – what is it all about?

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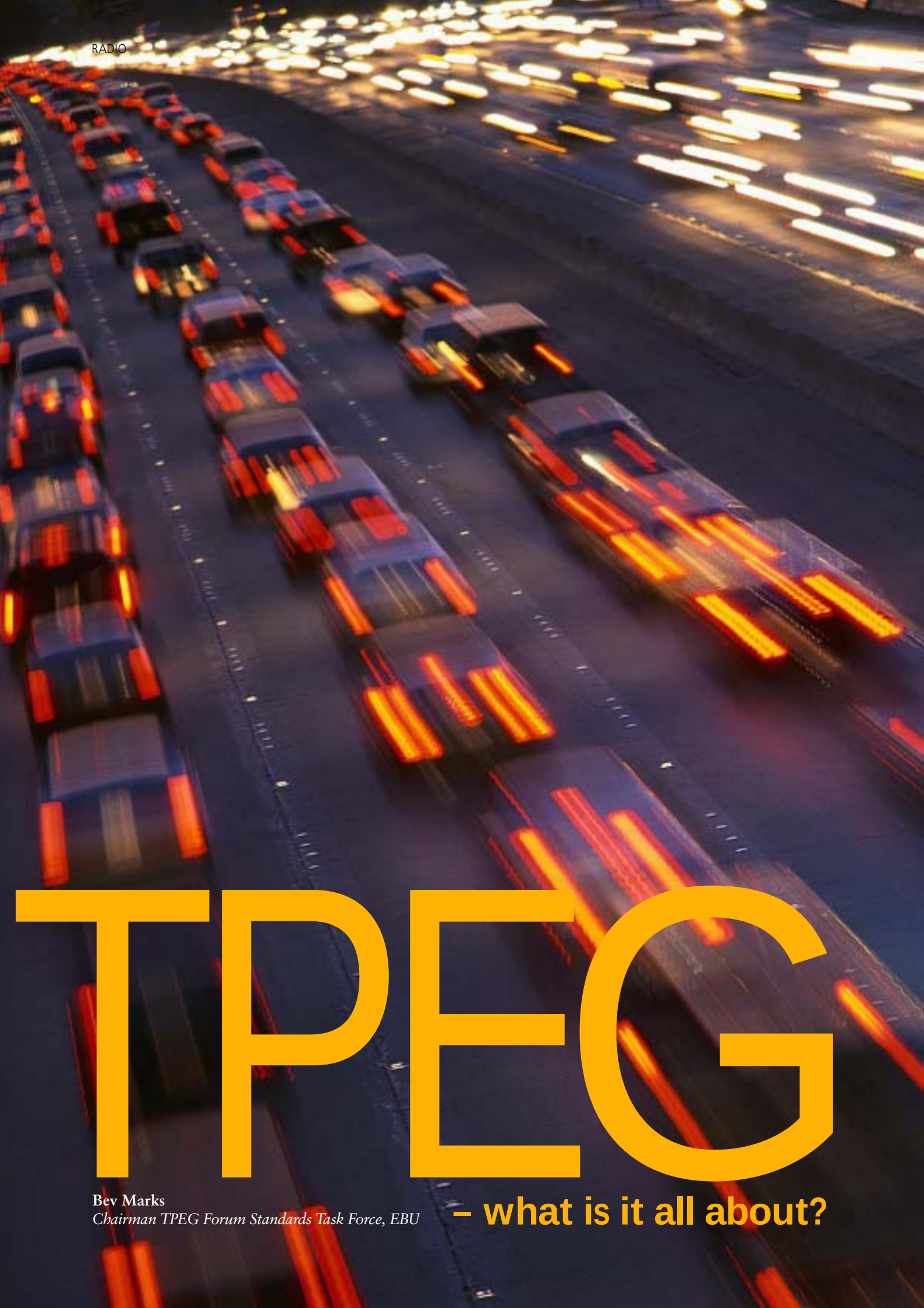

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TPEG means Transport Protocol Experts Group.

The EBU Technical Department, its industry partners and the EBU Traffic and Travel Information Group have been working on an important new technology for the delivery of Traffic and Travel Information for some six years. It is now possible to delve into a newly developed technology called TPEG (this strange name is explained later!) and see what it is all about, and why it is so very interesting for broadcasters.

TPEG technology was originally motivated by the desire to develop a 21st-century multimodal TTI data protocol for delivering content to the end-user. Already it has proved that it can satisfy a wider remit covering content exchange and other applications such as weather information. A common location referencing methodology has been developed to allow any client device to take advantage of the content with no prior installation of a location database. This is a major step forward in comparison to TDS-TMC, which is now quite common throughout Europe.

Language independence was one of the principles behind its design: the BBCi website already carries TPEG content in one of Europe's minority languages: Welsh! Several other languages are also available on this website, as well as English, of course. This concept of providing a locally based service is attractive for a broadcaster in a country with borders, which is the case in mainland Europe. It is also very useful to travellers who do not master the language(s) of neighbouring countries.

When the EBU experts met for the first time they were determined to work on systems suitable for broadcasting information to end-users, with a particular focus on Traffic and Travel Information. From these discussions was born the idea of TPEG (Transport Protocol Experts Group). 'Transport' was a *double entendre*; 'Transport' in the context of traffic and travel, and 'Transport' in the context of moving information (data) from a service provider to an end-user. It was foreseen that TPEG technology would be able to handle information delivery outside the traditional TTI domain, as well as very effectively within this domain.

Tool-kit

In the early days of TPEG technology, it was planned to develop applications that could extend multimodal information services far beyond anything attempted by technologies such as RDS-TMC. As TPEG technology gradually developed, the Radio Traffic Message application was joined by the Public Transport Information application, both of which shared a common Location Referencing method.

Today, TPEG technology is already recognized as providing a 'tool-kit' for delivering various types of content (with location referencing). Already developments for providing parking information, congestion and travel time are underway. In the future it

seems quite possible that environmental and weather information will be delivered (data 'transported') using TPEG technology.

In the domain of TTI, the public broadcaster's remit to deliver services free, at the point of reception, to all European citizens is a key objective. Many EBU Member broadcasters have realized the importance of TTI services in providing high quality (accurate and timely) information about multimodal traffic events, such as road accidents, road works, bus and train operations. With this objective, the expansion of data services has been a critically important technology development area for a number of years.

Traffic and Travel Information content is delivered to end-users by many mechanisms, especially from the public service broadcasters who deploy spoken announcements, RDS-TMC, teletext and the Internet to deliver such content. But, of course, the content has to be collected and edited according to rigorous standards to ensure it is timely and accurate. TTI service provision is therefore all about collection, editing and delivery of information.

To facilitate a good understanding of the processes, we have coined the idea of two segments that are shown in Figure 1. The *Content segment* covers all possible sources of information that must be collected and processed before the *Delivery segment* can be deployed to send the information to the end-user.

Cars, bus', trains

TPEG is the first European TTI application that covers all modes of transport across the entire transport landscape. It can serve the motorist in an urban area as well as the bus passenger, the intercity traveller and the long distance driver.

TPEG-RTM has been designed to cover Road Traffic Messages regardless of location. It is ideally suited to urban information because of the richness of content that it can offer. Furthermore, TPEG technology is designed to facilitate many more applications covering many other aspects of the TTI domain. Already TPEG-PTI allows a service provider to deliver comprehensive Public Transport Information about airplane, bus, ferry, tram and train services. It does not attempt to deliver full timetable information, which can be obtained from any other sources already, but it does allow very detailed service/disruption information changes to be delivered to end-users. With the ability to link information, it is possible to deliver various alternate routings to a particular destination.

TPEG technology extends multi-modal information services far beyond anything so far attempted by such technologies as RDS-TMC and puts the delivery of TTI back on track to being a ubiquitous source of information that ideally suits Europe's mobility objectives.

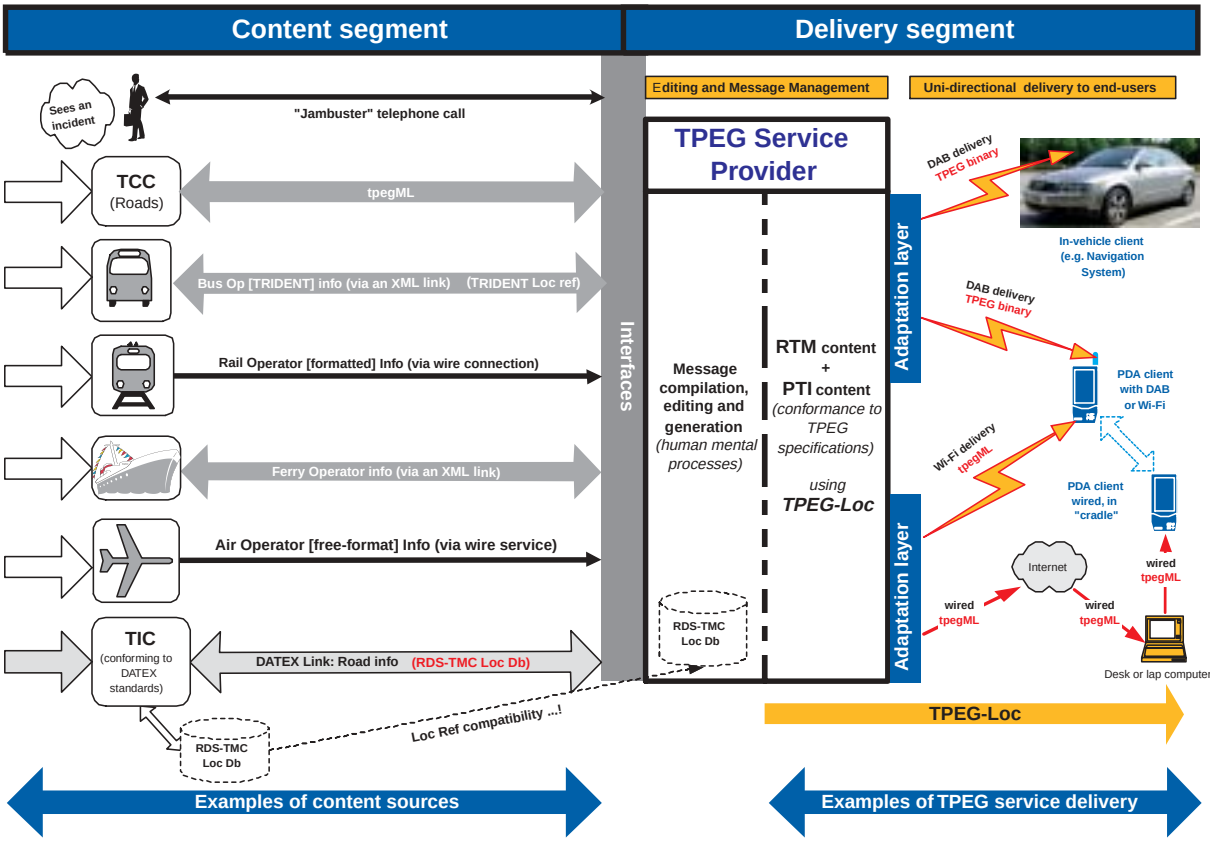

Figure 1

Not content with the developments in the Delivery segment, the developers have turned their attention to the Content segment and developed another 'flavour of TPEG' called tpegML, an up-to-date version using the latest XML technology. This is perfectly suited to the exchange of TTI content between broadcasters and will form the backbone of a new EBU TTI Exchange service starting this winter, which allows the exchange of internally important TTI content between broadcasters. It has the huge advantage that content can be generated in *any* language and read in *any* language, thus making the editors job far easier.

Easy

TpegML formatted information is easy to exchange via the Internet and it can be the source of both Internet services and digital radio services, simultaneously, with a single generation process which leads to considerable economies given the language independence also inherent in it.

The long-term aspiration for TPEG is that it will be universal and provide TTI services, via digital radio and the Internet, for the end-user regardless of what she or he is doing. It should be able to provide TTI services on a PDA, while at home or in the street, in a vehicle supporting the navi-system to make dynamic route changes according to road conditions, on a desk computer helping to plan a multimodal route for the following day, or in a portable radio giving simple text messages, filtered for the end-users pre-determined needs.

TPEG is designed to be end-user centric and provide seemless TTI services.

A PDA with an Internet navigator that can use XML, like the Compay iPAQ, can easily be used to display tpegML messages.

RDS-TMC = Radio Data System – Traffic Message Channel (in FM radio)