PROJECT

TPEG

Achieving technical consensus and supporting standardisation of TPEG applications, targeted at rapid implementation of enhanced multi-modal information services and navigation systems for European travellers

Funding: European (5th RTD Framework Programme)
Duration: Oct 2000 - Sep 2003
Status: Complete with results

Background & policy context:

A range of European Commission policies addressed already previously the provision of better traffic and travel information to the citizen, with the view to promote the growth of the Information Society. These policy objectives also demanded better and more efficient use and integration of the transportation systems and networks. Additionally, they aimed at improved quality of life for the citizen by better protection of the environment and ultimately also improved safety on the roads. The TPEG Project aimed to validate and build a consensus on the European scale and offered an open innovative TTI broadcast technology that supported well all those objectives.

Prior to the TPEG Project, there was already a pre-operational TPEG service from the British Broadcasting Corporation BBC that started in 1999, first on DAB and later also on the Internet. Through the TPEG Project’s activities TPEG signals were also to be put on air using the Digital Radio DAB infrastructures, already developed in Munich, Stuttgart and other parts of southwest Germany, as well as in Stockholm.

Objectives:

This project aimed to develop a new and open international standard for broadcasting language independent and multimodal traffic and travel information. It covers all modes such as road, bus, train, ferry, air traffic and may be distributed over a wide range of digital media (Digital radio/DAB, Internet, DVB, etc).

The major objective of this project was to test and validate the TPEG data stream on the DAB broadcast network and the Internet with specifically developed TPEG software decoders from the Consumer Electronics industry that would permit to test the wide range of TPEG functionalities specified in the European pre-standards of CEN TC 278.

Methodology:

The work will be organised in five Work packages:

WP 1: Project management:
Deliver a smoothly run beneficial informative project for the benefit of Europe and the IST programme;

WP 2: Definition of test environment:
Define the testing procedures by evaluating the whole information chain from message origination, processing, routing, broadcasting, reception and end-user presentation and define requirements for message encoding & decoding;

WP 3: Assessment and Verification:
Implement TPEG within existing broadcast infrastructures and realise the whole information chain from message origination, processing, routing, encoding to broadcasting on DAB and Internet and then test the functionalities for all possible options of the TPEG service. Reach industry consensus on TPEG decoder and produce platform independent TPEG decoder software module, implement geographical
location referencing; and adapt all this then to receiver products. Carry out receiving tests in the validation areas;

WP 4: Guidelines and Standardisation:
Provide Guidelines ready for service implementers for the start of a fully operational TPEG Traffic and Travel Information services. Achieve early coherent standards that allow smooth integration with existing TTI services;

WP 5: Dissemination and Implementation:
Provide information on the plan for dissemination of the project results, describe the technology used and indicate the exploitation of project results expected by the project partners.

Parent Programmes:
FP5-IST KA1 - Systems and services for the citizens

Institute type: Public institution
Institute name: European Comission, DG Information Society
Funding type: Public (EU)

Partners:
- EBU (CH);
- MVA (UK);
- IR (DE);
- SR (SE);
- CETEM (FR);
- SWR (SE);
- BBC (UK);
- Alpine Electronics (DE);
- Bosch/Blaupunkt (DE);
- Clarion (DE);
- Panasonic (DE);
- Pioneer (DE);
- Sony (DE);
- Siemens (DE).

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Key Results:
TPEG can support a number of different TTI applications, specifically for all modes of transport (trains, trams, busses, ferryboats, airport arrivals and departures - and not just only road traffic messages).

Many TTI experts consider TPEG as the most innovative technology in Traffic and Travel Information broadcasting that will also support a wide range of receivers, simple ones without a map database and more complex ones as car navigation systems.

TPEG Project demonstrated how the TPEG specifications could be tested in a Traffic and Travel Information (TTI) message generation environment for both, road-based traffic information and public transport information. An automatic conversion from RDS-TMC to TPEG was achieved and air-traffic arrival and departure information was parsed from the internet and distributed via TPEG. RDS-TMC and TPEG can co-exist. Language-independent TTI was broadcast via DAB and via Internet using the binary version of TPEG.

TPEG permits to reach very economically many people and to distribute messages of a general interest.
The end-user may filter the messages according to his/her specific interest. The messages are machine-readable and there exist many possibilities on how to present the messages.

The TPEG Project demonstrated various ways on how to implement language independent TTI on the Internet. Two different approaches are very interesting: one, chosen by the BBC, is for the Internet being mainly used by a fixed connection, the other, developed by Sony, offers a possibility to use TPEG on a mobile receiver via GSM/GPRS or UMTS.

Policy implications

EBU agreed to create as from January 2003 an open TPEG Forum that will ensure promotion and further development of the TPEG technology beyond the TPEG Project. It will also coordinate the implementation and promotion of the new emerging TPEG services and products. This also includes responsibility for the TPEG standards maintenance and further standards development under CEN TC 278/ISO TC 204.

Europe is clearly leading a very exiting technology, which deserves to be given more attention by the European Commission. All that is needed now are regular TPEG based multi-modal TTI services all over Europe. New Projects within the 6 th Framework Programme and also those Euroregional projects from DG TREN supporting European ITS infrastructure development could well contribute to achieving the objective of European-wide TPEG based mobile services for everyone, already as from around 2005 onwards.

The timely development of DAB broadcast infrastructures Europe-wide may require more EC involvement, as otherwise the new TPEG technology implementation to become available Europe-wide will just not happen. It will also be useful to continue studies of business models for TPEG service provision. Business models have the potential to encourage the industry with the view that a launch of consumer products for TPEG can be a profitable business.

The TPEG Project has identified some problems relating to the implementation of data broadcast services on DAB, nationwide. In some EU countries, this may require changes to be suggested to the regulatory environment. Harmonisation is this domain will certainly be useful and require further EC or European Parliament involvement. Also, the timely development of DAB broadcast infrastructures Europe-wide may require more EC involvement, as otherwise the new TPEG technology implementation to become available Europe-wide will just not happen.

Intelligent Transport Systems

Key Findings

TPEG Project demonstrated how the TPEG specifications could be tested in a Traffic and Travel Information (TTI) message generation environment for both, road-based traffic information and public transport information. An automatic conversion from RDS-TMC to TPEG was achieved and air-traffic arrival and departure information was parsed from the internet and distributed via TPEG. RDS-TMC and TPEG can co-exist. Language-independent TTI was broadcast via DAB and via Internet using

Documents:
- TPEG Final Report (final report)

STRIA Roadmaps: Network and traffic management systems, Smart mobility and services
Transport mode: Multimodal transport
Transport sectors: Passenger transport
Transport policies: Digitalisation
Geo-spatial type: Other