Mobility Information Broadcast

Services based on the TPEG Platform

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Agenda

- Traffic and Travel Information Services
  - Situation today
  - RDS-TMC

- The TPEG Approach
  - The Framework
  - TPEG Applications

- TPEG Test Services
  - Services On air
  - Transmission modes
  - Service content
  - Implementers
Conventional TTI Services

- Radio traffic reports via radio stations
  - Used by millions drivers via the in car radio device
  - Annoying for all other listeners

- Other services have emerged
  - 24h traffic info channels
  - SMS and telephone services
  - (mobile) internet pages, wap services
  - Etc.
  - All of them have in common, that they are

  - Language dependent
  - Bearer dependent
  - Not further processable
  - Focused on one mode of transport
RDS-TMC - Data „on air“

- TMC the Traffic Message Channel is a protocol designed to deliver the content of road traffic messages.
- Very efficient encoding to allow delivery via the FM Radio Data System (RDS).

- Developed in the 80ies, regular services were delivered in the late 90ies (in Germany).
- Became a great success in this millennium being a data source that enables navigation systems to consider the traffic events when guiding the driver.
- Hardly any in-car navigation system ships without a TMC receiver.
The TPEG approach

- TPEG - Transport Protocol Expert Group
- Initiated by the EBU (European Broadcasting Union) in the 90ies
- Not a single service, but a whole framework
  - Maintained and extended in the TPEG Forum
  - Bearer independent
  - Broadcast enabled
  - Multimodal approach
  - Language independent
  - Is decoded in TPEG client devices
  - Extensible
  - Application „plug in“ concept
TPEG Applications

- Are embedded in a framework:
  - Service infrastructure, data types, message management, location referencing -> it is a toolkit
  - Various encoding systems (so far binary and XML)
  - Data models for the content (UML including definition texts)

- This makes it straightforward to develop applications for the various purposes and just plug them into TPEG Services:
  - RTM, TEC, PTI, CTT, PKI, SPI,
  - POI, NEWS, WEA, BSI,
  - IDI, more to come!

- Standardisation with CEN/ISO via the TPEG Forum
The Source: TPEG Forum

TPEG service IDs, bearer Service IDs and frequencies are listed for easy identification.

Contact details of the implementers as well as the area where the service can be received are listed.

[Table]

www.tpeg.org -> Document ITF06009
TPEG services on air now

- All services are test services for technical and/or public testing in real broadcast environments.
- How many test services are already on air?
  - 26 services
    - DAB (21)
    - DMB (5)
- How many countries are already involved?
  - 5 countries (DE, UK, NL, BE, KR), preparations in others (ES, CH, ...)

<table>
<thead>
<tr>
<th>Format</th>
<th>Count</th>
</tr>
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<tbody>
<tr>
<td>Binary</td>
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</tr>
<tr>
<td>XML</td>
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</table>
Transmission Channel

- Most services are carried in the TDC (Transparent Data Channel)
  - Stream mode (4)
  - Packet mode without datagroups (8)
  - Packet Mode with datagroups (7)

- MOT file based services usually carry tpegML (XML) and style sheets for PDA-Browsers
Transmission Channel

Bandwidth ranges from 2kbps up to 128kbps

<table>
<thead>
<tr>
<th>Number of Services</th>
<th>2</th>
<th>8</th>
<th>16</th>
<th>64</th>
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<tbody>
<tr>
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<td>7</td>
<td>10</td>
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Service Content

- Most services carry road traffic messages only (16)
  - Either encoded using the RTM application (14)
  - Or the more automotive oriented TEC application (5)

- Seven services already provide information using multiple applications
  - Mainly TEC, PTI and PKI
  - Three Korean services include POI, NEWS and CTT

- In the future TPEG services will most likely carry a balanced mix of data in several applications best suited to the target group e.g.
  - TEC, LHW, SPI and PKI for drivers
  - PTI, BUS and PKI for public transport users

- Define the ideal service for your users!
Service Implementers

- First real transmissions in the past by BBC and SR. At the final workshop of the TPEG Project in Munich, two live streams by IRT and BMT were on air in 2003.

- Services in Bavaria:
  - IRT, BDR, BR, mobile.info

- Services in other German states:
  - WDR, DR-M/GEWI, FIRST, underway: mobile.info

- Services in Europe:
  - BBC, SVDO/NOS, VRT, underway: SRG, WIT/RISING

- Services in Korea:
  - ETRI, MBC, KBS, SBS, YTN

- If you know of any others -> motivate them to report to the TPEG Forum!
Many thanks to Bev Marks and all the TPEG Forum members for providing information about TPEG Services.

Visit [www.bmt-online.de](http://www.bmt-online.de) for more information and links.

Thank you. See you in the TPEG Forum.