



ITS World Congress 2006

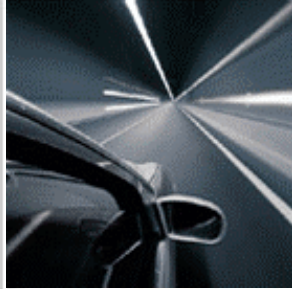
London, 2006-10-12

Mobility Information Broadcast

Services based on the TPEG Platform

Paper No. 1075

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Agenda

■ Traffic and Travel Information Services

- Situation today
- RDS-TMC

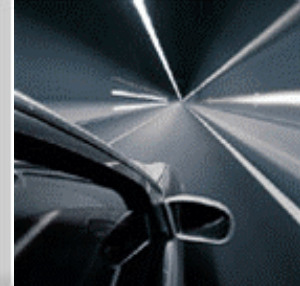
■ The TPEG Approach

- The Framework
- TPEG Applications

■ TPEG Test Services

- Services On air
- Transmission modes
- Service content
- Implementers





- Radio traffic reports via radio stations

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



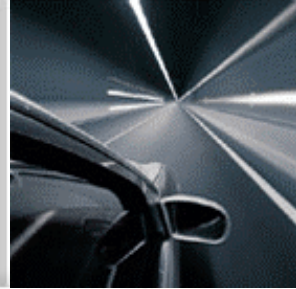
- Other services have emerged

- 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

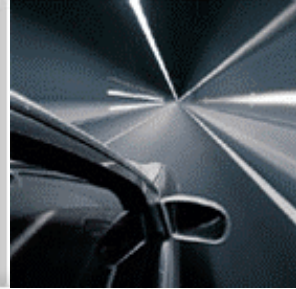




- TMC the Traffic Message Channel is a protocol designed to deliver the content of road traffic messages

- 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 millenium 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.



- 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



- 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 make it straight forward 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

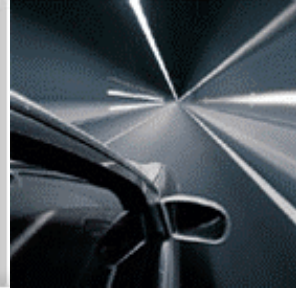


European Broadcasting Union								Union Européenne de Radio-Télévision						
Implementation Task Force														
TPEG test services and DAB/DMB transmission data														
Currently registered TPEG tests at 2006-10-02														
TPEG Information								DAB/DMB Information						
Ref Nr	Time(s) of operation	TPEG Service Operator	TPEG Service Name	Service Content	Location Method	TPEG SID (decimal)	Binary or tpegML	Channel - Bearer	Bandwidth (kbit/s)	Transport mechanism	Transmission Channel Note_3	DAB/DMB SID	Target Service Area	MPX Operator Note_4
1	20060610 to ??	Mobile Info	Claiglig	RTM/TEC	TPEG-Loc, TMC, Azara	000.049.x	Binary	11C-DAB	8/48*	TDC-1	PM	e0d71073	DE: Munich - local	BDR
2	20060610 to ??													BDR
3	20060610 to ??													BDR
4	20060627 to ??													BDR
5	20060627 to ??													BDR
6	20041221 to ??													DR-M
7	20060318 to ??													DR-M
8	20060318 to ??													DR-M
9	20060909 to ??													DR-M
10	20060909 to ??													DR-M
11	20060909 to ??													DR-M
12	20060922 to ??													FIRST
13	20060601 to ??													IRT
14	20060601 to ??													IRT
15	20060601 to ??													Zeile: 1
16	20060224 to ??	WDR	WDR TPEG TEST	RTM	TPEG-Loc	000.128.000	Binary	12D-DAB	8	TDC-2	PAD	EidOrD397; SID clauglig	DE: North Rhine Westphalia	WDR / T-Systems Köln
17	20060801 to ??	ETRI	ETRI TTI	RTM, PTI, POI, NEWS	??	000.100.100	Binary	ROK116-DMB	64	TDC-2	??	11e00004	KR: North Daejeon	ETRI
18	20060927 to ??	MBC	MBC TPEG	CTT, RTM, PTI	??	004.001.001	Binary	ROK124-DMB	128	MOT-1	PM	11e00002	KR: Seoul	MBC
19	20060927 to ??	KBS	TTI	??	??	??	Binary	ROK128-DMB	64	TDC-1	??	11e00006	KR: Seoul	KBS
20	20060927 to ??	SBS	TPEG	??	??	??	Binary	ROK12C-DMB	16	TDC-??	PM	11e00000	KR: Seoul	SBS

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

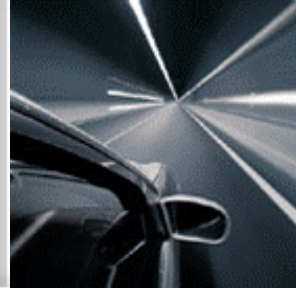
www.tpeg.org -> Document ITF06009



- 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, ...)

Binary (22)

XML (4)



- Most services are carried in the TDC (Transparent Data Channel)

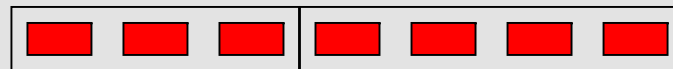
- Stream mode (4)



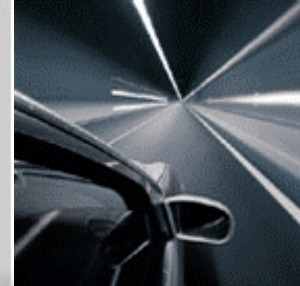
- Packet mode without datagroups (8)



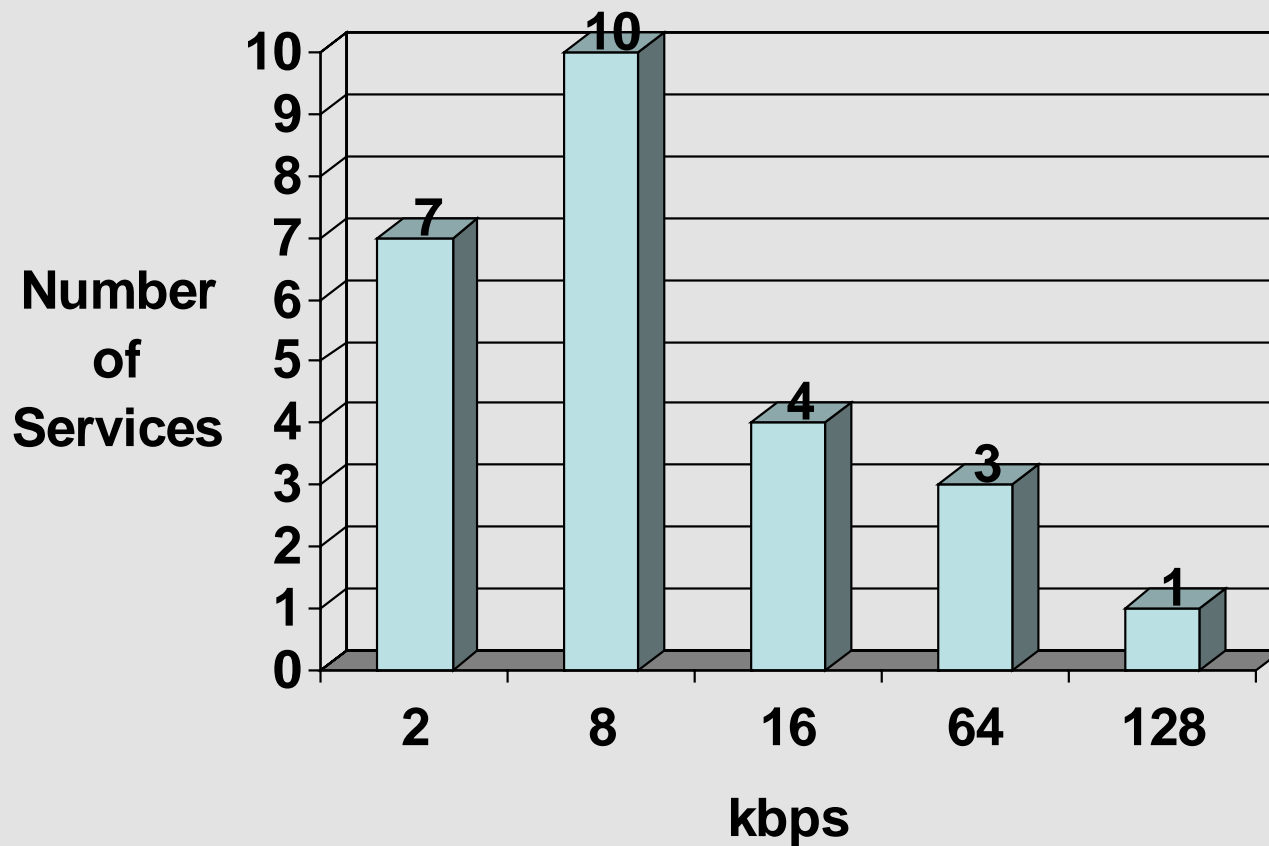
- Packet Mode with datagroups (7)



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



■ Bandwidth ranges from 2kbps up to 128kbps





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

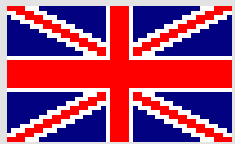
- **Seven services already provide information using multiple applications**
 - Mainly TEC, PTI and PKI
 - Three Korean services include POI, NEWS and CTT

- **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!**



- 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

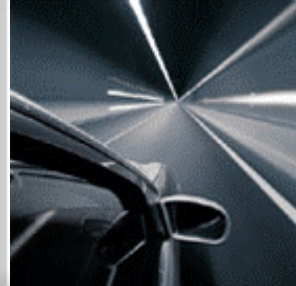


- Services in Korea:
 - ETRI, MBC, KBS, SBS, YTN



- 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 for more information and links.

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Thank you. See you in the TPEG Forum.