



Direction Technique
Service audiovisuel

Cesson Sévigné, le 22 juin 2006

Référence DTECH/AUV/MUL/0079/
06/PhM/PhM
Version 1.0
Code interne
Responsable technique Ph. MEILLAN
DTech
Tél. 33199287446
Fax
E-mail Philippe.meillan@tdf.fr

DOCUMENT A USAGE EXTERNE

PARIS DVB-H TRIAL, PHASE 1 :
PARAMETERS OF DVB-H TRANSMISSION
Programme "DTMN"

Destinataire(s)

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TDF - Société Anonyme au capital de 166 956 512 EUR.
SIREN 342 404 399 RCS Paris
Siège social : 10, rue d'Oradour sur Glane - 75732 Paris cedex 15 - France
Vos courriers sont à adresser à :
TDF – 2 rue du Clos Courtel – CS 11744
35517 Cesson-Sévigné cedex - France
Tél. 33 (0)2 99 28 70 00 - Fax 33 (0)2 99 28 70 35 - www.tdf.fr



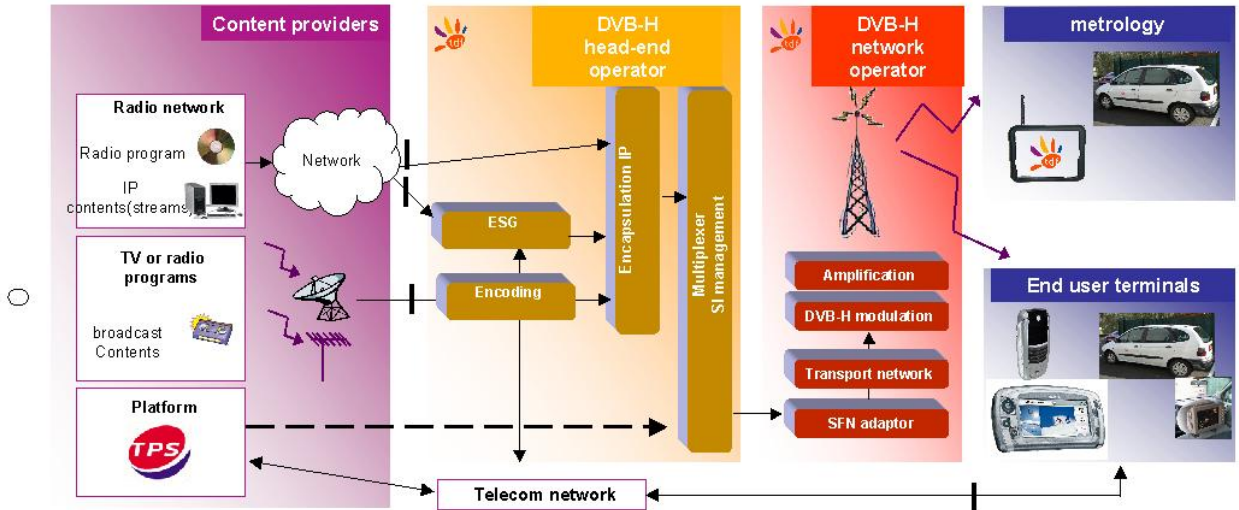
HISTORIQUE

Version	Date	Nature de la modification
1.0		Texte initial



1. DVB-H infrastructure.

The infrastructure set up by TDF for the DVB-H trial in Paris is illustrated on the following figure :



The service bouquet includes streaming of TV programs, streaming of audio programs, and ESG.

The mutiplex is multiplexed with another DVB-H bouquet provided by TPS.

The overall bandwidth is equally divided between the two bouquets ; the PSI/SI signalling is assembled by TDF for both bouquets.

2.Parameters.

2.1. DVB-H transmission parameters.

2.1.1. Channel 37.

Channel	37
Frequency	602 MHz, SFN
Transmitters location	Eiffel tower, Romainville tower, Areva tower La défense, SOFITEL hotel, Arcueil
ERP	Around 9 kW for each transmitter
Bandwith	8 MHz
Mode	8K, 16 QAM, non hierachical
Code rate	1/2



Guard interval	1/8
MPE FEC rate	Various, mainly 7/8
Burst parameters	
Burst duration	Around 250 ms
Time slice period	2982 ms
Number of MPE FEC rows	512,768,1024
TPS signalling	Signalling of DVB-H and time slicing

2.1.2. PSI/SI signalling .

PSI/SI signalling includes the following tables : NIT, INT, PAT, PMT, SDT.

2.1.3. IP layer.

Feature	
IP version	IPv4
File delivery	FLUTE/ALC
Platform Id	10
Platform name	DVB-H C 37
Platform Provider Name	TDF-TPS

2.1.4. A/V content format.

Feature	
Video codec	H 264/MPEG4-AVC
Audio codec	AAC-LC
Profile	Baseline profile
Picture size	QVGA
Frame rate	12.5 or 25 frames/s
Max bit rates	Video : 300 kbits/s Audio : 48 kbits/s
Video encapsulation	RTP, RFC 3984
Audio encapsulation	RTP, RFC 3640

Example of a sdp file :

v=0

o=- 571622436 2651128868 IN IP4 10.93.15.1

s=4Caster-9098

c=IN IP4 228.1.1.1/10

b=RR:0

t=0 0

a=mpeg4-iod:"data:application/mpeg4-

iod;base64,AoIzAE///w9//wOBPgABQKBkYXRhOmFwcGxpY2F0aW9uL21wZWc0LW9kLWF1O2Jhc2U2NCxBVnNCS2dVZkF5WUF5U0FBWlFRtkISRUFrb0FBQkpQUUFBU1R3QVIRQUVRQUFWK1FBQUZ



```
ma0NBQUFBQUFBd0V0QXA4REtRQmxBQVFOUUVJQUJnQUFBRjNBQUFCZHdBWVFBVFBQUQ2
QUFBRmZrQ0FBQUFBQUEwTURabkpoBA0BBQAAyAAAAAAAAAAAAABgkAAAAAAAAAAAAADaQA
CQEZkYXRhOmFwcGxpY2F0aW9uL21wZWc0LWJpZnMtYXU7YmFzZTY0LHdCQVNnVEFwQlcbUV
FSDhBQUFCL0FBQUJFS0NLQ240BBICDQAAIAAAAAAAAAAAAAABQMAAGAGCQEAAAAAAAAAAAA
A=="
```

```
m=video 9408 RTP/AVP 96
```

```
b=AS:299
```

```
a=rtpmap:96 H264/90000
```

```
a=fmtp:96 profile-level-id=42E014; sprop-parameter-sets=Z0LgFJWQFB+/8AAQABEAAAMD6AAAYahgwAEk8AkurgAC,aM44gA==; parameter-sets=Z0LgFJWQFB+/8AAQABEAAAMD6AAAYahgwAEk8AkurgAC,aM44gA==; packetization-mode=1
```

```
a=cliprect:0,0,240,320
```

```
a=framerate:25.00000000
```

```
a=mpeg4-esid:201
```

```
a=x-envivio-verid:0002225C
```

```
m=audio 9410 RTP/AVP 97
```

```
b=AS:24
```

```
a=rtpmap:97 mpeg4-generic/16000/2
```

```
a=fmtp:97 profile-level-id=15; config=1410; streamtype=5; mode=AAC-hbr; SizeLength=13; IndexLength=3; IndexDeltaLength=3
```

```
a=mpeg4-esid:101
```

```
a=lang:fra
```

```
a=x-envivio-verid:0002225C
```

2.1.5. Audio only content format.

Feature	
Audio codec	HE-AAC
Max bit rate	56 kbits/s, usually 48 kbits/s for stereo programs and 24 kbits/s for mono
Audio encapsulation	RTP, RFC 3640

Example of a sdp file :

```
v=0
```

```
o=- 12745824 3579 IN IP4 10.93.15.15
```

```
s=Mayah 1 RTL Europe 1
```

```
i=radio
```

```
t=0 0
```

```
a=isma-compliance:1,1.0,1
```

```
a=mpeg4-iod:"data:application/mpeg4-iod;base64,AoFnAA8AAAAAAAAOBCgAAQHRkYXRhOmFwcGxpY2F0aW9uL21wZWc0LW9kLWF1O2Jhc2U2NCxBVG9CT0FVZkF6UUFBQUFFTENBUkFEcVIBQmJqWUFBQUFBQUZIUUFBQWJBREFBQUJ0UWtBQUFFQUFBQUJURJaUIBTTBGaEJJVUVEQmdFQgQNAgUAOpGAFuNgAAAAAYBAQNRAABANmRhdGE6YXBwbGljYXRpb24vbXBIZzZtYmlmcy1hdTtiYXNINjQsd0JBU1IRU0lVRVVGUhdBPQQSAG0AOpGAFuNgAAAAAUDAABABgEB"
```



m=audio 5006 RTP/AVP 97

c=IN IP4 228.1.1.27/60

b=AS:24

a=rtpmap:97 mpeg4-generic/44100/1

a=control:trackID=1

a=mpeg4-esid:1

a=fmtp:97 mode=AAC-hbr; streamtype=5; bitrate=32000; config=1208; SizeLength=13; IndexLength=3; IndexDeltaLength=3;

2.2. ESG.

The ESG, compliant to DVB-CBMS specifications, provide all necessary information about the services including program information for the present and the following day.

2.2.1. Basic information

Feature	
Transport	ALC/FLUTE
Bootstrap IP destination address	224.0.23.14/3537
Singlestream ESG	228.1.1.30/3536

2.3. Service protection and purchase.

All services are unencrypted.

2.4. Services

The services are broadcast according to the following provisions /

TSID	1	Time Slicing	
ONID	65281(0xFF01)	Burst Bandwidth	5580 kbit/s
NETWORK_ID	65281 (0xFF01)	Period	2,982 sec
NETWORK_NAME	"TDF DVB-H"		
PLATFORM_ID	10 (0x0A)	PSI/SI TDF	420 kbit/s
PLATFORM_NAME	"DVB-H C37"		
PLATFORM_PROVIDER_NAME	"TDF-TPS"		

NOM	CODEUR					PID	DEBIT TS
	IP SOURCE	IP DESTINATION	Video	Audio	DEBIT IP réel		
INT_Table						501	7kbit/s
TV1 - France 2	10.93.15.1	228.1.1.1	300 kbit/s	24 kbit/s	345 kbit/s	301	430 kbit/s
TV2 - France 3	10.93.15.2	228.1.1.2	175 kbit/s	24 kbit/s	210 kbit/s	302	275 kbit/s
TV3 - France 5	10.93.15.3	228.1.1.3	175 kbit/s	24 kbit/s	210 kbit/s	303	275 kbit/s
TV4 - France 4	10.93.15.4	228.1.1.4	175 kbit/s	24 kbit/s	210 kbit/s	304	275 kbit/s
TV5- LCP	10.93.15.5	228.1.1.5	175 kbit/s	24 kbit/s	210 kbit/s	305	275 kbit/s
TV6 - Euronews	10.93.15.6	228.1.1.6	175 kbit/s	24 kbit/s	210 kbit/s	306	275 kbit/s
TV7 - Arte	10.93.15.7	228.1.1.7	175 kbit/s	24 kbit/s	210 kbit/s	307	275 kbit/s
TV8 - I-télé	10.93.15.8	228.1.1.8	185 kbit/s	24 kbit/s	230 kbit/s	308	300 kbit/s
TV9 - Planète	10.93.15.9	228.1.1.9	185 kbit/s	24 kbit/s	230 kbit/s	309	300 kbit/s
TV10 - W9	10.93.15.10	228.1.1.10	185 kbit/s	24 kbit/s	230 kbit/s	310	300 kbit/s
TV11 - TV Breizh	10.93.15.11	228.1.1.11	185 kbit/s	24 kbit/s	230 kbit/s	311	300 kbit/s
TV12 - TPS Star	10.93.15.12	228.1.1.12	185 kbit/s	24 kbit/s	230 kbit/s	312	300 kbit/s
TV13 - Gulliver	10.93.15.13	228.1.1.13	175 kbit/s	24 kbit/s	230 kbit/s	313	300 kbit/s
TV14 - Europe2 TV	10.93.15.14	228.1.1.14	185 kbit/s	24 kbit/s	230 kbit/s	314	300 kbit/s
Skyrock		236.72.47.208		48 kbit/s		320	I
RTL	10.93.15.15	228.1.1.18		24 kbit/s		320	I
MFM/Oui FM	10.93.15.18	228.1.1.19		48 kbit/s		320	400kbit/s
FIP	10.56.110.93	228.1.1.24		48 kbit/s		320	I



BFM	10.93.15.16	228.1.1.26		24 kbit/s		320	I
Europe1	10.93.15.15	228.1.1.27		24 kbit/s		320	I
france_info	10.56.110.94	228.1.1.15		24 kbit/s		321	I
Classique/Notre Dame	10.93.15.20	228.1.1.16		48 kbit/s		321	I
RMC	10.93.15.16	228.1.1.20		24 kbit/s		321	I
Radio-Orient/Super Loustic	10.93.15.20	228.1.1.16		24 kbit/s		321	400kbits/s
RFI	10.93.15.20	228.1.1.16		24 kbit/s		321	I
Europe2	10.93.15.17	228.1.1.23		48 kbit/s		321	I
RTL2	10.93.15.17	228.1.1.25		48 kbit/s		321	I
ESG bootstrap	10.93.15.21	224.0.23.14	120 kbit/s			330	300 kbit/s
ESG singlestream	10.93.15.21	228.1.1.28				330	

2.5. Test stream

Recorded test stream may be available upon request from : philippe.meillan@tdf.fr