



Electronic Communications Committee (ECC)  
within the European Conference of Postal and Telecommunications Administrations (CEPT)

## **TERRESTRIAL BROADCASTING DATA**

**Bratislava, September 2003**

## EXECUTIVE SUMMARY

The CEPT database is intended for accommodation of data necessary for introduction of terrestrial digital broadcasting in CEPT countries, in particular in relation to the CEPT preparation for the Regional Radiocommunications Conference (RRC) for planning of the digital terrestrial broadcasting service in parts of Region 1 and 3<sup>1</sup>, in the frequency bands 174-230 MHz and 470-862 MHz.

However, the information contained in this report is not limited to the scope of the RRC. The objective is to present the record formats and associated information relevant for collection, maintenance and utilisation of terrestrial broadcasting data. The material comes from various sources in CEPT and EBU.

This Report contains specification for the following record formats:

1. Analogue television
  - analogue TV assignment
  - reference interference values in accordance with the Resolution 5 of the Chester Agreement (1997)
2. Analogue FM radio
  - analogue FM sound broadcasting assignments
  - interference values at the test points of analogue FM sound broadcasting assignment
3. Digital television
  - DVB-T assignments
  - interference values at the test points of DVB-T assignment
  - DVB-T allotment, including allotment boundary points
  - calculation test points for DVB-T allotment
4. Digital radio
  - T-DAB requirements as published in the ERO circular letters in accordance with the Maastricht Special Arrangement (2002) and the Wiesbaden Special Arrangement (1995), as revised in Maastricht 2002
  - T-DAB assignment
  - T-DAB allotment, including allotment boundary points
  - calculation test points for T-DAB allotment
5. Other Services assignment
6. Country boundaries

Most of the above data formats are already in use in CEPT while some format specifications are newly developed in order to provide for current and future use.

In addition to the description of record structures, this document contains definition of possible values, where appropriate, for individual data elements. Such an information is valuable for CEPT administrations and other users that are responsible for maintenance and exchange of data. It may also be useful developing software for data processing and data exchange.

This material was used as a basis for development and implementation of the European Database Management System for Broadcasting (EDSB) in ERO. The EDSB can be accessed via the Internet on the following address: [www.edsb.dk](http://www.edsb.dk) or through the main ERO web site ([www.ero.dk](http://www.ero.dk)).

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<sup>1</sup> For definition of planning area see the ITU Council Resolution 1185 (modified in May 2003)

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## 1 INTRODUCTION

Considerable efforts of the CEPT administrations, EBU and ERO in the past years have been focused on preparation, collection and processing of data related to broadcasting, in particular within a framework of implementation of Chester Agreement (1997) and in connection with the two T-DAB planning meetings (Wiesbaden 1995 and Maastricht 2002). These activities are continuing within CEPT in the context of preparation for the ITU Regional Radiocommunications Conference (RRC) for planning of the digital terrestrial broadcasting service in parts of Region 1 and 3<sup>1</sup>, in the frequency bands 174-230 MHz and 470-862 MHz.

As a necessary tool in this process, a set of record formats has been developed to accommodate data for analogue and digital broadcasting as well as other data relevant for planning, such as the other services data and the country boundaries. In addition, a set of validation rules has been applied in order to ensure formal correctness of data.

The main objective of this report is to present the record formats and associated information in a systematic manner. It addresses various aspects relevant for collection, maintenance and utilisation of broadcasting data in the CEPT database. This material is considered as valuable for CEPT administrations and other users, in particular when developing their own software for data analysis or data exchange. It was also used as a basis for development and implementation of the European Database Management System for Broadcasting (EDSB) in ERO. The EDSB can be accessed via the Internet on the URL: [www.edsb.dk](http://www.edsb.dk) or through the main ERO web site ([www.ero.dk](http://www.ero.dk)).

## 2 DATA FORMATS

The following data records are described in the Report:

### 2.1 Analogue television

- **Analogue TV transmitter**

Record identifier: **TVAI** = Transmitter Video Analogue – format 1

- **Test points for analogue TV**

Record identifier: **TTA6** = Test point Television Analogue - format 6

Record identifier: **TTBx** Normally 6 different files all having the same record format. They contain the names and the nuisance contributions of the up to 6 most interfering transmitters at each test point. Records of TTB1 type contain information on the worst interfering transmitters; records of TTB2 contain interfering transmitters with the second worst contribution and so on. The acronym 'TTB' has no specific meaning (except that B is the letter following A in an alphabetic order).

### 2.2 Analogue FM sound broadcasting

- **Analogue FM sound broadcast transmitter**

Record identifier: **FMAI** = FM Analogue – format 1

- **Test points for analogue FM sound broadcasting transmitter**

Record identifier: **TFAI** = Test point FM Analogue - format 1

Record identifier: **TFBx** Normally 6 different files all having the same record format. They contain the names and the nuisance contributions of the up to 6 most interfering transmitters at each test point. Records of TFB1 type contain information on the worst interfering transmitters; records of TFB2 contain interfering transmitters with the second worst contribution and so on. The acronym 'TFB' has no specific meaning (except that B is the letter following A in an alphabetic order).

Note: Currently there is no practical need for calculations of the test points for analogue FM sound broadcasting at the CEPT level. These record types are included for sake of completeness.

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<sup>1</sup> For definition of planning area see the ITU Council Resolution 1185 (modified in May 2003).

### 2.3 Terrestrial digital television

- **Digital TV transmitter**  
Record identifier: **TVD1** = Transmitter Video Digital – format 1
- **Test points for digital TV**  
Record identifier: **TTD1** = Test point Television Digital - format 1  
Record identifier: **TTE<sub>x</sub>** Normally 6 different files all having the same record format. They contain the names and the nuisance contributions of the up to 6 most interfering transmitters at each test point. Records of TTE1 type contain information on the worst interfering transmitters; records of TTE2 contain interfering transmitters with the second worst contribution and so on. The acronym ‘TTE’ has no specific meaning (except that E is the letter following D in an alphabetic order).
- **DVB-T allotment**  
Record identifier: **AVD1** = Allotment Video Digital - format 1
- **DVB-T allotment boundary test points**  
Record identifier: **BTP1** = Boundary Test Points - format 1
- **DVB-T allotment calculation test points**  
Record identifier: **CTP1** = Calculation Test Points - format 1

### 2.4 Terrestrial digital radio

- **T-DAB allotment requirement**  
Record identifier: **ALL1** = Allotment - format 1 - defined in Annex 3, Appendix 1 of the Wiesbaden Special Arrangement (1995), as revised in Maastricht 2002.  
Record identifier: **ALL2** = Allotment - format 2 - defined in Annex 3, Appendix 1 of the Maastricht Special Arrangement (2002).
- **T-DAB assignment requirement**  
Record identifier: **ASS1** = Assignment - format 1 - defined in Annex 3, Appendix 2 of the Wiesbaden Special Arrangement (1995), as revised in Maastricht 2002.  
Record identifier: **ASS2** = Assignment - format 2 - defined in Annex 3, Appendix 2 of the Maastricht Special Arrangement (2002).
- **T-DAB allotment**  
Record identifier: **AAD1** = Allotment Audio Digital - format 1
- **T-DAB allotment boundary test points**  
Record identifier: **BTP2** = Boundary Test Points - format 2
- **T-DAB allotment calculation test points**  
Record identifier: **CTP2** = Calculation Test Points - format 2
- **T-DAB assignment (transmitter)**  
Record identifier: **TAD1** = Transmitter Audio Digital- format 1

### 2.5 Other Services

- **Other services**  
Record identifier: **OS01** = Other Services - format 1  
Record identifier: **OS02** = Other Services - format 2

## 2.6 Country boundaries

- **Country boundaries**

Record identifier: **CBPI** = Country Boundary Points- format **1** - contains boundary points

Record identifier: **CBP2** = Country Boundary Points- format **2** - contains country boundaries.

## 3 RECORD DESCRIPTIONS

### 3.1 General

The following tables contain format description of the record types mentioned in Chapter 2. The columns in the tables have the following meaning:

<i>Field</i>	- field identification numbers pertinent to a given record type
<i>Field name</i>	- short name of the individual field in the table. Fields containing the same in data in different tables normally have identical names
<i>Item</i>	- definition of the content of individual fields with instructions about how to fill in the data and some examples, where appropriate
<i>Start column</i>	- position (column number) within the record where the first character of a given field is located
<i>Width</i>	- number of characters in the record allocated for a given field
<i>Type</i>	- data type relevant for a given field. Fortran convention for field type description is used.
<i>Status</i>	- information whether the value required in a particular field for the record to be considered valid is mandatory (value 'M') or optional (value 'O'). If the value is mandatory, the field cannot contain a null value (missing value in a mandatory field is a major error). If the value to be filled in depends on the value in some other field (in the same record), the identification number of the corresponding field is indicated.

The following rules apply to all data files:

- Each data file consists of fixed length records separated by the "Carriage return - Line feed" (CrLf) pair of characters.
- Each record consists of a number of fields containing ASCII characters. An interpretation of any record is unambiguously defined by the field "Record identifier" (field 1).
- Each field is uniquely defined by its position within the record.
- Entries in the numeric and integer fields shall be right justified.
- Entries in the alphanumeric fields shall be left justified.
- In the interpretation of data, blank spaces are disregarded, except where explicitly specified.

### 3.2 Analogue television

#### 3.2.1 Analogue television assignment (transmitter) record<sup>1</sup>

Field	Field name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be <b>TVA1</b>	1	4	A4	M
2	Administration ID	ITU code for administration responsible	5	3	A3	M
3	Transmitter ID	Identification code used by organisation	8	9	A9	M
4	Update code	Update code used by organisation	17	1	A1	O
5	ITU number	Space reserved for the ITU number	18	9	A9	O
6	Status code	Status code ( <b>O</b> perating/ <b>N</b> ot operating)	27	1	A1	O
7	Date – operation	Date of entry into operation (DDMMYYYY)	28	8	2I2,I4	O
8	Country – location	ITU code for country in which transmitter is sited	36	3	A3	M
9	Station name	Name. Up to 20 alphanumeric characters.	39	20	A20	M
10	Latitude	Latitude (in degrees, N, min., sec.)	59	7	I2,A1,2I2	M
11	Longitude	Longitude (in degrees, E/W, min., sec.)	66	8	I3,A1,2I2	M
12	Altitude of site	Altitude of site (meters above sea level; as sign followed by a number)	74	5	I5	M
13	TV system	Television system ( <b>B/D</b> , ... etc.)	79	2	A2	M
14	Colour system	Colour system ( <b>Pal/Secam/NTSC</b> )	81	1	A1	M
15	Channel	Channel	82	3	A3	M
16	VisionOffset value	Vision offset value (in 1/12 line units; as sign followed by a number). If the value in field 19 is not 'U' this field is mandatory.	85	4	I4	O
17	Nominal frequency	Nominal vision carrier frequency in MHz (including decimal point)	89	9	F9.3	M
18	VisionOffset in Hz	Vision offset value in Hz (as sign followed by a number)	98	8	I8	M
19	Offset type	Offset type ( <b>U</b> nspecified/ <b>N</b> ormal/ <b>P</b> recision/ <b>S</b> ynchronised)	106	1	A1	M
20	ERP max – hor	Maximum vision e.r.p. of horizontally polarised component (in dBW; as sign followed by a number including a decimal point)	107	5	F5.1	M* 29
21	ERP max – vert	Maximum vision e.r.p. of vertically polarised component (in dBW; as sign followed by a number including a decimal point)	112	5	F5.1	M* 29
22	Prim. sound freq.	Nominal primary sound carrier frequency minus nominal vision carrier frequency in MHz (as a number including a decimal point; if value is negative, e.g. System L at VHF, include sign in first column of field)	117	4	F4.1	M
23	Prim. sound offset	Primary sound carrier offset (zero, unless a special sound offset is in use) value in Hz (for system L only)	121	7	I7	O
24	Power ratio 1	Vision to primary sound carrier power ratio (in dB)	128	2	I2	M
25	Sec. sound freq.	Nominal secondary sound carrier frequency minus nominal vision carrier frequency in MHz (as a number including a decimal point; if value is negative, e.g. System L at VHF, include sign in first column of field)	130	6	F6.2	O
26	Unused 1	Unused	136	6		
27	Sec. sound system	Secondary sound system (FM/Nicam; leave blank if no secondary sound system)	142	1	A1	O
28	Power ratio 2	Vision to secondary sound carrier power ratio (in dB)	143	2	I2	O
29	Polarisation	Polarisation (H/V/M)	145	1	A1	M
30	Height of antenna	Height of antenna (meters above ground level)	146	3	I3	M

<sup>1</sup> This format specification is derived from the TVA1 format originating in Chester Agreement '97. The following new fields are included:

- Field 37 (Heff1) - column 304 (unused in the original Chester TVA1)
- Field 38 (Excluded) - column 305 (unused in the original Chester TVA1)
- Field 39 (Disputed) - column 306 (unused in the original Chester TVA1)
- Field 49 (GEO datum) - columns 758 -767 (part of the field 'Unused or comments' in the original Chester TVA1)

Field	Field name	Item	Start Column	Width	Type	Status
31	Directivity	Directivity (Directional/Non-directional)	149	1	A1	M
32	Ant. pattern-hor	36 values of e.r.p. reduction (in dB) of the horizontally polarised component in the horizontal plane relative to the maximum e.r.p. of the horizontally polarised component as given in field 20 (at 10 degree intervals, starting at North)	150	72	36xI2	M** 31, 20
33	Ant. pattern-vert	36 values of e.r.p. reduction (in dB) of the vertically polarised component in the horizontal plane relative to the maximum e.r.p. of the vertically polarised component as given in field 21 (at 10 degree intervals, starting at North)	222	72	36xI2	M** 31, 21
34	Beam tilt – hor	Beam tilt angle of the horizontally polarised component (in degrees, negative if above the horizontal)	294	4	F4.1	O
35	Unused 2	Unused	298	2		
36	Beam tilt – vert	Beam tilt angle of the vertically polarised component (in degrees, negative if above the horizontal)	300	4	F4.1	O
37	Heff 1	Effective antenna height. Put 'U' if the effective height of the antenna is the same in all directions. Otherwise put 'N'	304	1	A1	M
38	Excluded?	Put "X" if this record shall not be included in the calculations of the reference situation. Otherwise leave blank	305	1	A1	O
39	Disputed?	Put "D" if this record is disputed by one or more administrations. Otherwise leave blank.	306	1	A1	O
40	Heff max	Maximum effective antenna height (m)	307	5	I5	M
41	Heff values	If the field 37 contains 'N', give 36 values of effective antenna height (in meters, at 10 degree intervals, starting at North)	312	180	36xI5	M 37
42	Organisation ID	Organisation name or code	492	5	A5	O
43	Programme ID	Programme identifier	497	5	A5	O
44	Date-last change	Date of last change to data in this record (DDMMYYYY)	502	8	2I2,14	M
45	Design. emiss. V	Designation of emission for the vision signal	510	9	A9	O
46	Design. emiss. S1	Designation of emission for the primary sound signal	519	9	A9	O
47	Design. emiss. S2	Designation of emission for the secondary sound signal	528	9	A9	O
48	Remarks	Unused or remarks	537	221	A221	O
49	GEO datum	Designation of a geographical co-ordination system used for the geographical co-ordinates in fields 10 and 11 (Examples: WGS84, EURef89, ...). If blank, WGS84 is assumed.	758	10	A10	O
99	Housekeeping	Reserved for housekeeping purposes	768	32	A32	O

Record length=799

- \* If field 29 (Polarisation) contains H then field 20 (ERPmax - hor) is mandatory.  
 If field 29 (Polarisation) contains V then field 21 (ERPmax - vert) is mandatory.  
 If field 29 (Polarisation) contains M then fields 20 and 21 are mandatory.

- \*\* If field 31 contains D then either field 32 (Antenna pattern - hor) or 33 (Antenna pattern - vert) or both become mandatory.



### 3.2.2 Test points for analogue television transmitter - TTA format 6<sup>1</sup>

Field	Field name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be <b>TTA6</b>	1	4	A4	M
2	Administration ID	Identification code for administration responsible	5	3	A3	M
3	Transmitter ID	Identification code used by organisation	8	9	A9	M
4	Update code	Update code used by organisation	17	1	A1	O
5	Number of TPs	Number of test points (up to 36) for which the values are given in field 6.	18	2	I2	M
6	Values on TPs	Test points format 6. Up to 36 values of (Values of usable and protected field strength in dB( $\mu$ V/m), Distance of test point from transmitter site in km, Bearing of test point from transmitter site in degrees, Longitude, Latitude)	20	1260	36(4F5.1, I3,A1,I2,I2, I2,A1,I2,I2)	M
7	Date-calculations	Date of calculations (DDMMYYYY)	1280	8	I2,I2,I4	M
8	Remarks	Unused or remarks	1288	19	A19	O
99	Housekeeping	Reserved for housekeeping purposes	1307	32	A32	O

Record length=1338

TTA6 file contains interference calculation results for the test points.

Each TTA6 record is uniquely related to a corresponding TVA1 record. Fields 2 (Administration ID) and 3 (Transmitter ID) are to be used together as a link between two data files.

### 3.2.3 Test points for analogue television transmitter - TTB files<sup>1</sup>

Field	File name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be <b>TTBx</b> (value of <i>x</i> can be in the range 1-6)	1	4	A4	M
2	Housekeeping	Reserved for housekeeping purposes	5	6	A6	O
3	Administration ID	ITU code for administration responsible	11	3	A3	M
4	Transmitter ID	Identification code used by organisation	14	9	A9	M
5	Update code	Update code used by organisation	23	1	A1	O
6	Number of TPs	Number of test points (up to 36) for which the values are given in field 7.	24	2	I2	M
7	Values on TPs	Up to 36 values of (ITU code for administration responsible for interfering transmitter, Identification code used by organisation, Update code used by organisation, Interfering field strength in dB( $\mu$ V/m))	26	648	36(A3, A9, A1, F5.1)	M
8	Unused	Unused	674	1		

Record length: 674 characters

TTB files contain the identifiers and the nuisance contributions of the most interfering transmitters at each test point. There are 6 different TTB files, all having the same record structure. Records of TTB1 type contain information on the worst interfering transmitters; records of TTB2 contain interfering transmitters with the second worst contribution and so on.

Each TTBx record is uniquely related to a corresponding TVA1 record. Fields 2 (Administration ID) and 3 (Transmitter ID) in TVA1 file are corresponding to the fields 3 and 4, respectively, in the TTBx files, as a link between two data files.

<sup>1</sup> These data formats are used for publishing the results of calculations of the reference interference situation in accordance with the Resolution 5 of the Chester Agreement '97.

### 3.3 Analogue FM sound broadcasting

#### 3.3.1 Analogue FM sound broadcasting assignment (transmitter) record

Field	Field name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be <b>FMA1</b>	1	4	A4	M
2	Administration ID	ITU code for administration responsible	5	3	A3	M
3	Transmitter ID	Identification code used by organisation	8	9	A9	M
4	Update code	Update code used by organisation	17	1	A1	O
5	Serial number	Space reserved for serial number (e.g. ITU No.)	18	9	A9	O
6	Status code	Status code ( <b>O</b> perating/ <b>N</b> ot operating)	27	1	A1	O
7	Date – operation	Date of entry into operation (DDMMYYYY)	28	8	2I2,I4	O
8	Country – location	ITU code for country in which transmitter is sited	36	3	A3	M
9	Station name	Name. Up to 20 alphanumeric characters.	39	20	A20	M
10	Latitude	Latitude (in degrees, N, min., sec.)	59	7	I2,A1, 2I2	M
11	Longitude	Longitude (in degrees, E/W, min., sec.)	66	8	I3,A1, 2I2	M
12	Altitude of site	Altitude of site (meters above sea level; as sign followed by a number)	74	5	I5	M
13	Freq. dev. max	Maximum frequency deviation in kHz ( <b>50</b> or <b>75</b> )	79	2	I2	M
14	Transmission mode	Mono or Stereo transmission ( <b>M</b> or <b>S</b> )	81	1	A1	M
15	Stereo system	Stereo system (Polar = <b>O</b> , Pilot tone = <b>I</b> )	82	1	A1	14
16	Unused 1	Unused	83	6		
17	Nominal frequency	Nominal centre frequency in MHz (including decimal point)	89	9	F9.3	M
18	Offset in Hz	Frequency offset value in Hz (as sign followed by a number)	98	8	I8	[O]
19	Offset type	Offset type (Normal / Synchronised)	106	1	A1	[O]
20	ERP max – hor	Maximum vision e.r.p. of horizontally polarised component (in dBW; as sign followed by a number including a decimal point)	107	5	F5.1	M* 33
21	ERP max – vert	Maximum vision e.r.p. of vertically polarised component (in dBW; as sign followed by a number including a decimal point)	112	5	F5.1	M* 33
22	Unused 2	Unused	117	3		
23	Sub-carrier sys. 1	1 <sup>st</sup> sub-carrier system ( <b>A</b> for ARI, <b>R</b> for RDS, If ARI and RDS are used simultaneously enter <b>R</b> , else blank)	120	1	A1	O
24	Frequency sub-c. 1	Centre frequency of 1 <sup>st</sup> sub-carrier in kHz	121	3	F3.1	O
25	Unused 3	Unused	124	4		
26	Peak deviation 1	Peak deviation of RF carrier caused by 1 <sup>st</sup> sub-carrier in kHz	128	3	F3.1	O
27	Unused 4	Unused	131	4		
28	Sub-carrier sys. 2	2 <sup>nd</sup> sub-carrier system ( <b>D</b> arc, <b>S</b> CA, <b>X</b> for other system), if no 2 <sup>nd</sup> sub-carrier then leave blank	135	1	A1	O
29	Frequency sub-c. 2	Centre frequency of 2 <sup>nd</sup> sub-carrier in kHz	136	3	F3.1	O
30	Unused 5	Unused	139	1		
31	Peak deviation 2	Peak deviation of RF carrier caused by 2 <sup>nd</sup> sub-carrier in kHz	140	3	F3.1	O
32	Unused 6	Unused	143	2		
33	Polarisation	Polarisation ( <b>H</b> / <b>V</b> / <b>M</b> )	145	1	A1	M
34	Height of antenna	Height of antenna (meters above ground level)	146	3	I3	M
35	Directivity	Directivity ( <b>D</b> irectional / <b>N</b> on-directional)	149	1	A1	M
36	Ant. pattern-hor	36 values of e.r.p. reduction (in dB) of the horizontally polarised component in the horizontal plane relative to the maximum e.r.p. of the horizontally polarised component as given in field 20 (at 10 degree intervals, starting at North)	150	72	36xI2	M** 35, 20
37	Ant. pattern-vert	36 values of e.r.p. reduction (in dB) of the vertically polarised component in the horizontal plane relative to the maximum e.r.p. of the vertically polarised component as given in field 21 (at 10 degree intervals, starting at North)	222	72	36xI2	M** 35, 21
38	Beam tilt – hor	Beam tilt angle of the horizontally polarised component (in degrees, negative if above the horizontal)	294	4	F4.1	O

Field	Field name	Item	Start Column	Width	Type	Status
39	Unused 7	Unused	298	2		
40	Beam tilt – vert	Beam tilt angle of the vertically polarised component (in degrees, negative if above the horizontal)	300	4	F4.1	O
41	Heff 1	Effective antenna height. Put 'U' if the effective height of the antenna is the same in all directions. Otherwise put 'N'	304	1	A1	M
42	Unused 8	Unused	305	2		
43	Heff max	Maximum effective antenna height (m)	307	5	I5	M
44	Heff values	If the field 37 contains 'N', give 36 values of effective antenna height (in meters, at 10 degree intervals, starting at North)	312	180	36x15	M 41
45	Organisation ID	Organisation name or code	492	5	A5	O
46	Programme ID	Programme identifier	497	5	A5	O
47	Date-last change	Date of last change to data in this record (DDMMYYYY)	502	8	212,14	M
48	Design. emission	Designation of emission	510	9	A9	O
49	Unused 9	Unused	519	18		
50	Remarks	Unused or remarks	537	221	A221	O
51	GEO datum	Designation of a geographical co-ordination system used for the geographical co-ordinates in fields 10 and 11 (Examples: WGS84, EURef89, ...). If blank, WGS84 is assumed.	758	10	A10	O
99	Housekeeping	Reserved for housekeeping purposes	768	32	A32	O

Record length: 799 characters

- \* If field 33 (Polarisation) contains H then field 20 (ERPmax - hor) is mandatory.
- If field 33 (Polarisation) contains V then field 21 (ERPmax - vert) is mandatory.
- If field 33 (Polarisation) contains M then fields 20 and 21 are mandatory.

- \*\* If field 35 contains D then either field 36 (Antenna pattern - hor) or 37 (Antenna pattern - vert) or both become mandatory.

### 3.3.2 Test points for FM radio transmitter - TFA format 1

Field	Field name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be <b>TFA1</b>	1	4	A4	M
2	Administration ID	ITU code for administration responsible	5	3	A3	M
3	Transmitter ID	Identification code used by organisation	8	9	A9	M
4	Update code	Update code used by organisation	17	1	A1	O
5	Number of TPs	Number of test points (up to 36) for which the values are given in field 6.	18	2	I2	M
6	Values on TPs	Test points format 6. Up to 36 values of (Values of usable and protected field strength in dB( $\mu$ V/m), Distance of test point from transmitter site in km, Bearing of test point from transmitter site in degrees, Longitude, Latitude)	20	1260	36(4F5.1, I3,A1,I2,I2, I2,A1,I2,I2)	M
7	Date-calculations	Date of calculations (DDMMYYYY)	1280	8	I2,I2,I4	M
8	Remarks	Unused or remarks	1288	19	A19	O
99	Housekeeping	Reserved for housekeeping purposes	1307	32	A32	O

Record length=1338

TFA1 file contains interference calculation results for the test points.

Each TFA1 record is uniquely related to a corresponding FMA1 record. Fields 2 (Administration ID) and 3 (Transmitter ID) are to be used together as a link between the two data files.

### 3.3.3 Test points for FM radio transmitter - TFB files

Field	File name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be <b>TFBx</b> (value of <i>x</i> can be in the range 1-6)	1	4	A4	M
2	Housekeeping	Reserved for housekeeping purposes	5	6		O
3	Administration ID	ITU code for administration responsible	11	3	A3	M
4	Transmitter ID	Identification code used by organisation	14	9	A9	M
5	Update code	Update code used by organisation	23	1	A1	O
6	Number of TPs	Number of test points (up to 36)for which the values are given in field 7.	24	2	I2	M
7	Values on TPs	Up to 36 values of (ITU code for administration responsible for interfering transmitter, Identification code used by organisation, Update code used by organisation, Interfering field strength in dB( $\mu$ V/m))	26	648	36(A3, A9, A1, F5.1)	M
8	Unused	Unused	674	1	A1	O

Record length: 674 characters

TFB files contain the identifiers and the nuisance contributions of the most interfering transmitters in each test point. There are 6 different TFB files, all having the same record structure. Records of TFB1 type contain information on the worst interfering transmitters; records of TFB2 contain interfering transmitters with the second worst contribution and so on.

Each TFBx record is uniquely related to a corresponding FMA1 record. Fields 2 (Administration ID) and 3 (Transmitter ID) in FMA1 file are corresponding to the fields 3 and 4, respectively, in the TFBx files, as a link between the two data files.

### 3.4 Terrestrial digital television (DVB-T)

#### 3.4.1 DVB-T transmitter record<sup>1</sup>

Field	Field name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be <b>TVD1</b>	1	4	A4	M
2	Administration ID	ITU code for administration responsible	5	3	A3	M
3	Transmitter ID	Identification code used by organisation	8	9	A9	M
4	Update code	Update code used by organisation	17	1	A1	O
5	ITU number	Space reserved for the ITU number	18	9	A9	O
6	Status code	Status code (Operating/Not operating)	27	1	A1	O
7	Date – operation	Date of entry into operation (DDMMYYYY)	28	8	2I2,14	O
8	Country – location	ITU code for country in which transmitter is sited	36	3	A3	M
9	Station name	Name. Up to 20 alphanumeric characters.	39	20	A20	M
10	Latitude	Latitude (in degrees, N, min., sec.)	59	7	I2,A1,2I2	M
11	Longitude	Longitude (in degrees, E/W, min., sec.)	66	8	I3,A1,2I2	M
12	Altitude of site	Altitude of site (meters above sea level; as sign followed by a number)	74	5	I5	M
13	Digital TV system	Digital television system (e.g. DVB-T variant)	79	2	A2	M
14	Carrier&guard int.	Carrier and guard interval	81	1	A1	M
15	Channel <sup>2</sup>	Channel	82	3	A3	M
16	Bandwidth	Digital TV signal bandwidth	85	1	I1	M
17	Unused 1	Unused	86	3		
18	Ch. centre freq.	Channel centre frequency in MHz (including decimal point)	89	9	F9.3	M
19	Offset in Hz	Channel centre frequency offset value in Hz. Defined as: (centre frequency to be used) – (nominal channel centre frequency) - as sign followed by a number	98	8	I8	M
20	Unused 2		106	1		
21	ERP max - hor	Maximum e.r.p. of horizontally polarised component (in dBW; as sign followed by a number including a decimal point)	107	5	F5.1	M* 26
22	ERP max – vert	Maximum e.r.p. of vertically polarised component (in dBW; as sign followed by a number including a decimal point)	112	5	F5.1	M* 26
23	SFN ID	Identifier for SFN	117	5	A5	O
24	Relative timing	Relative timing of transmitter within an SFN (in µsec)	122	6	I6	O
25	Reception mode	Reception mode ( <b>Fixed/Portable/Mobile/Handheld</b> )	128	1	A1	O
26	Unused 3	Unused	129	16		
27	Polarisation	Polarisation ( <b>H/V/M</b> )	145	1	A1	M
28	Height of antenna	Height of antenna (m above ground level)	146	3	I3	M
29	Directivity	Directivity ( <b>Directional/Non-directional</b> )	149	1	A1	M
30	Ant. pattern-hor	36 values of e.r.p. reduction (in dB) of the horizontally polarised component in the horizontal plane relative to the maximum e.r.p. of the horizontally polarised component as given in field 21 (at 10 degree intervals, starting at North)	150	72	36xI2	M** 28, 21
31	Ant. pattern-vert	36 values of e.r.p. reduction (in dB) of the vertically polarised component in the horizontal plane relative to the maximum e.r.p. of the vertically polarised component as given in field 22 (at 10 degree intervals, starting at North)	222	72	36xI2	M** 28, 22
32	Beam tilt – hor	Beam tilt angle of the horizontally polarised component (in degrees, negative if above the horizontal)	294	4	F4.1	O
33	Unused 4	Unused	298	2		

<sup>1</sup> This format specification is derived from the TVD1 format originating in Chester Agreement '97. The following new fields are included:

- Field 34 (Heff1) - column 304 (unused in the original Chester TVD1)
- Field 35 (Excluded) - column 305 (unused in the original Chester TVD1)
- Field 36 (Disputed) - column 306 (unused in the original Chester TVD1)
- Field 44 (GEO datum) - columns 758 -767 (part of the field 'Unused or comments' in the original Chester TVD1)

<sup>2</sup> Channel designation for DVB-T is the same as for analogue TV (see Annex 1)

Field	Field name	Item	Start Column	Width	Type	Status
34	Beam tilt – vert	Beam tilt angle of the vertically polarised component (in degrees, negative if above the horizontal)	300	4	F4.1	O
35	Heff 1	Effective antenna height. Put ‘U’ if the effective height of the antenna is the same in all directions. Otherwise put ‘N’	304	1	A1	M
36	Excluded?	Put ‘X’ if this record shall not be included in the calculations of the reference situation. Otherwise leave blank	305	1	A1	O
37	Disputed?	Put ‘D’ if this record is disputed by one or more administrations. Otherwise leave blank.	306	1	A1	O
38	Heff max	Maximum effective antenna height (m)	307	5	I5	M
39	Heff values	If the field 37 contains ‘N’, give 36 values of effective antenna height (in meters, at 10 degree intervals, starting at North)	312	180	36xI5	M 34
40	Tx provider	Transmission provider	492	5	A5	O
41	Service provider	Service provider	497	5	A5	O
42	Date – last change	Date of last change to data in this record (DDMMYYYY)	502	8	I2,I2,I4	M
43	Design. emission	Designation of emission	510	9	A9	O
44	Remarks	Unused or remarks	519	239	A239	O
45	GEO datum	Designation of a geographical co-ordination system used for geographical co-ordinates in fields 10 and 11 (Examples: WGS84, EURef89, ... ). If blank, WGS84 is assumed.	758	10	A10	O
99	Housekeeping	Reserved for housekeeping purposes	768	32	A32	O

Record length=799

\* If field 26 (Polarisation) contains H then field 21 (ERPmax - hor) is mandatory. If field 26 (Polarisation) contains V then field 22 (ERPmax - vert) is mandatory.  
If field 26 (Polarisation) contains M then fields 21 and 22 are mandatory.

\*\* If field 28 contains D then either field 29 (Antenna pattern - hor) or 29 (Antenna pattern - vert) or both become mandatory.

### 3.4.2 Test points for DVB-T transmitter - TTD format 1

Field	Field name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be <b>TTD1</b>	1	4	A4	M
2	Administration ID	ITU code for administration responsible	5	3	A3	M
3	Transmitter ID	Identification code used by organisation	8	9	A9	M
4	Update code	Update code used by organisation	17	1	A1	O
5	Number of TPs	Number of test points (up to 36) for which the values are given in field 6.	18	2	I2	M
6	Values on TPs	Test points format 6. Up to 36 values of (Values of usable and protected field strength in dB( $\mu$ V/m), Distance of test point from transmitter site in km, Bearing of test point from transmitter site in degrees, Longitude, Latitude)	20	1260	36(4F5.1, I3,A1,I2,I2, I2,A1,I2,I2)	M
7	Date-calculations	Date of calculations (DDMMYYYY)	1280	8	I2,I2,I4	M
8	Remarks	Unused or remarks	1288	19	A19	O
99	Housekeeping	Reserved for housekeeping purposes	1307	32	A32	O

Record length=1338

TTD1 file contains interference calculation results for the test points.

Each TTD1 record is uniquely related to a corresponding TVD1 record. Fields 2 (Administration ID) and 3 (Transmitter ID) are to be used together as a link between two data files.

### 3.4.3 Test points for DVB-T transmitter - TTE files

Field	File name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be <b>TTE<sub>x</sub></b> (value of <i>x</i> can be in the range 1-6)	1	4	A4	M
2	Housekeeping	Reserved for housekeeping purposes	5	6		O
3	Administration ID	ITU code for administration responsible	11	3	A3	M
4	Transmitter ID	Identification code used by organisation	14	9	A9	M
5	Update code	Update code used by organisation	23	1	A1	O
6	Number of TPs	Number of test points (up to 36) for which the values are given in field 7.	24	2	I2	M
7	Values on TPs	Up to 36 values of (ITU code for administration responsible for interfering transmitter, Identification code used by organisation, Update code used by organisation, Interfering field strength in dB( $\mu$ V/m))	26	648	36(A3, A9, A1, F5.1)	M
8	Unused	Unused	674	1	A1	O

Record length: 674 characters

TTE files contain the identifiers and the nuisance contributions of the most interfering transmitters at each test point. There are 6 different TTE files, all having the same record structure. Records of TTE1 type contain information on the worst interfering transmitters; records of TTE2 contain interfering transmitters with the second worst contribution and so on.

Each TTE<sub>x</sub> record is uniquely related to a corresponding TVD1 record. Fields 2 (Administration ID) and 3 (Transmitter ID) in TVD1 file are corresponding to the fields 3 and 4, respectively, in the TTE<sub>x</sub> files, as a link between the two data files.

**3.4.4 DVB-T allotment record**

Field	Field name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be <b>AVD1</b>	1	4	A4	M
2	Administration ID	ITU code for administration responsible	5	3	A3	M
3	Allotment ID	DVB-T allotment identifier (5-digits identification number)	8	5	I5	M
4	ID code	Identification code used by administration	13	9	A9	O
5	Update code	Update code used by administration	22	1	A1	O
6	Serial number	Space reserved for serial number (e.g. ITU No.)	23	9	A9	O
7	Status code	Status code ( <b>O</b> perating/ <b>N</b> ot operating)	32	1	A1	O
8	Date – operation	Date of entry into operation of first transmitter (DDMMYYYY)	33	8	2I2, I4	O
9	Allotment name	Allotment name	41	20	A20	M
10	Digital TV system	Digital television system (e.g. DVB-T variant)	61	2	A2	M
11	Carrier&guard int.	Carrier and guard interval	63	1	A1	M
12	Channel <sup>1</sup>	Channel	64	3	A3	M
13	Bandwidth	Digital TV signal bandwidth	67	1	I1	M
14	Unused 1	Unused	68	3		
15	Ch. centre frequency	Channel centre frequency in MHz (including decimal point)	71	9	F9.3	M
16	Offset in Hz	Channel centre frequency offset in Hz - defined as: (centre frequency to be used) - (nominal channel centre frequency) - as sign followed by a number	80	8	I8	M
17	Reference network	Type of the reference network	88	1	I1	M
18	Polarisation	Polarisation ( <b>H/V/M</b> )	89	1	A1	M
19	Reception mode	Reception mode ( <b>F</b> ixed/ <b>P</b> ortable/ <b>M</b> obile/ <b>H</b> andheld)	90	1	A1	O
20	Contour ID	If the test points on country boundary are to be used for the allotment enter contour identifier for the contour of the country boundary. (Corresponding to field 3 in CBP2 file. See also definition of country boundary in section 3.6.). Otherwise leave blank. If blank, it is assumed that the allotment boundary test points are to be used.	91	4	I4	O
21	Number of TPs	If the previous field is blank, enter number of boundary points forming the boundary of the allotment (minimum 3).	95	3	I3	M
22	Agreement numbers	Numbers that identify bilateral agreements relevant for this allotment (5 characters each)	98	100	20A(5)	O
23	GEO datum	Designation of a geographical co-ordination system used for geographical co-ordinates in fields 6 and 7 (Examples: WGS84, EURef89, ). If blank, WGS84 is assumed.	198	10	A10	O
24	Date – last change	Date of last change to data in this record (DDMMYYYY)	208	8	2I2, I4	M
25	Remarks	Unused or remarks	216	52	A52	O
99	Housekeeping	Reserved for database housekeeping purposes	268	32	A32	O

Record length: 299 characters

DVB-T allotment record is linked with two following data files containing allotment boundary points (BTP1 record) and calculation test points (CTP1 record). This relation is uniquely defined by the field 2 (Administration ID) and field 3 (Allotment ID) taken together. These fields appear in all three data formats. One record in the allotment file AVD1 corresponds to a set of records (at least three) in the allotment boundary file and a set of records in the calculation test points file.

<sup>1</sup> Channel designation for DVB-T is the same as for analogue TV (see Annex 1)



### 3.4.5 DVB-T allotment boundary points

Field	Field name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be <b>BTP1</b>	1	4	A4	M
2	Administration ID	ITU code for administration responsible	5	3	A3	M
3	Allotment ID	DVB-T allotment identifier (5-digits identification number)	8	5	I5	M
4	Contour ID	Identifier for a closed contour belonging to this allotment. (number between 001 and 999. '0' means that a country boundary is to be used)	13	3	I3	M
5	TP serial number	Serial number of the allotment boundary point within the contour (number between 001 and 999)	16	3	I3	M*
6	Latitude	Latitude (in degrees, N, min., sec.)	19	7	I2,A1,2I2	M*
7	Longitude	Longitude (in degrees, E/W, min., sec.)	26	8	I3,A1,2I2	M*

Record length: 33 characters

Allotment boundary file contains a set of geographical points representing the area of a given allotment. The allotment boundary is represented by one or more closed contours. Each contour represents a single geographical area. A boundary contour can be constructed by linear interpolation between the boundary points and shall not cross itself.

An allotment may consist of multiple non-contiguous geographical areas. In such a case each geographical area is represented by a separate closed contours.

A set of records (minimum three) in this file corresponds with a single record in the allotment file AVD1. This relation is uniquely defined by the field 2 (Administration ID) and field 3 (Allotment ID) taken together. These fields appear in both data formats.

### 3.4.6 DVB-T allotment calculation test point

Field	Field name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be <b>CTP1</b>	1	4	A4	M
2	Administration ID	ITU code for administration responsible	5	3	A3	M
3	Allotment ID	DVB-T allotment identifier (5-digits identification number)	8	5	I5	M
5	CTP serial number	Serial number of the calculation test point (001 – 999)	13	3	I3	M
6	Latitude	Latitude (in degrees, N, min., sec.)	16	7	I2,A1,2I2	M
7	Longitude	Longitude (in degrees, E/W, min., sec.)	23	8	I3,A1,2I2	M
8	Calculated field strength	Referent field strength calculated according to the relevant agreement (a number including a decimal point)	31	4	F4.1	M
9	Agreed field strength	Agreed field strength at the test point in dB( $\mu$ V/m) (a number including a decimal point)	31	4	F4.1	O
10	Date – last change	Date of last change to value in field 9 (DDMMYYYY)	35	8	2I2, I4	M*

Record length: 42 characters

\* If the field 9 contains a value, then the field 10 becomes mandatory.

Calculation test points file contains a set of geographical points to be used for interference calculation.

A set of records in this file corresponds to a single record in the allotment file AVD1. This relation is uniquely defined by the field 2 (Administration ID) and field 3 (Allotment ID) taken together. These fields appear in both data formats.

### 3.5 Terrestrial digital radio (T-DAB)

#### 3.5.1 T-DAB requirement files

The requirement files are used for co-ordination in accordance with the Wiesbaden Special Arrangement (1995), as revised in Maastricht 2002 and Maastricht Special Arrangement (2002).

##### 3.5.1.1 T-DAB allotment requirement record

Basic characteristics of a T-DAB allotment to be communicated for a modification to the Allotment Plan are defined in Annex 3A, whereas a data structure for electronic submission is given in Appendix 1 to Annex 3 of both Arrangements.

Field	Field name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be <b>ALL1</b> or <b>ALL2</b> . (See annex 3 of the relevant Agreement - Wi95revMa02 or Ma02)	1	4	A4	M
2	Administration ID	ITU code for administration responsible	5	3	A3	M
3	Allotment ID	T-DAB allotment identifier (5-digits identifying number)	8	5	I5	M
4	Procedure	ADD/MOD/SUP	13	3	A3	M
5	Year of conversion	Year in which this submission is intended to be converted into one or more assignments	16	4	I4	O
6	Allotment name	Name of the allotment (Up to 20 alphanumeric characters)	20	20	A20	M
7	Frequency block	T-DAB frequency block	40	3	A3	M
8	Reference network	Type of the reference network (the standard reference models <b>1</b> , <b>2</b> and <b>3</b> ; see Section 5.3 of Annex2). In the case of VHF allotment, the Wi95 reference network is indicated by the number ' <b>1</b> '	43	1	I1	M
9	Block offset in Hz	Block centre frequency offset in Hz – defined as: (block centre frequency to be used) - (nominal block centre frequency) - as sign followed by a number	44	8	I8	M
10	Boundary TPs	Enter ' <b>B</b> ' if the test points on country boundary are to be used for the allotment. Otherwise leave blank. If blank, it is assumed that the allotment boundary test points are to be used.	52	1	A1	O
11	Number of TPs	If previous field is blank, enter number of the allotment boundary test points (up to 36).	53	2	I2	10
12	Test points	Allotment boundary test points. Up to 36 co-ordinates (longitude and latitude) in degrees and minutes. Example: 017E164346N2731 is a co-ordinate 17 deg, 16 min, 43 sec East and 46 deg, 27 min, 31 sec North	55	540	36(I3,A1,I2,I2, I2,A1,I2, I2)	M
13	Date – submission	Date of submission (DDMMYYYY)	595	8	2I2,I4	M
14	Status	Actual status of the proposal (Proposed/Co-ordinated/Withdrawn)	603	1	A1	O
15	Date – status	Date when the status indicated in the previous field becomes effective)	604	8	2I2,I4	O
16	Contour ID	If field 10 contains ' <b>B</b> ', enter the contour identifier for the contour of the country boundary that shall be used as an allotment boundary. (Corresponding to field 3 in CBP2 file. See also definition of country boundary in section 3.6.)	612	4	I4	O
17	Remarks	Remarks	616	152	A152	O
99	Housekeeping	Reserved for housekeeping purposes	768	32	A32	O

Record length: 799 characters

## 3.5.1.2 T-DAB assignment requirement record

Basic characteristics of a T-DAB assignment to be communicated for the conversion of a T-DAB allotment into one or more assignments are defined in Annex 3B, whilst a data structure for electronic submission is given in Appendix 2 to Annex 3 of both Arrangements:

Field	Field name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be <b>ASS1</b> or <b>ASS2</b> . See annex 3 of the relevant Agreement (Wi95revMa02 or Ma02)	1	4	A4	M
2	Administration ID	ITU code for administration responsible	5	3	A3	M
3	Allotment ID	T-DAB allotment identifier (5-digits identifying number)	8	5	I5	M
4	Procedure	ADD/MOD/SUP	13	3	A3	M
5	Assignment ID	Identification code of the assignment used by the administration	16	9	A9	M
6	Date – operation	Date of entry into operation (DDMMYYYY)	25	8	2I2, I4	O
7	Country – location	ITU code for country in which transmitter is sited	33	3	A3	M
8	Allotment name	Name of the allotment	36	20	A20	M
9	Transmitter name	Name of the transmitter	56	20	A20	M
10	Latitude	Transmitter site - latitude (in degrees, minutes and seconds). Example: 46N2731 is a co-ordinate 46 degrees, 27 minutes and 31 seconds North	76	7	I3,A1,2I2	M
11	Longitude	Transmitter site - longitude (in degrees, minutes and seconds). Example: 017E1643 is a co-ordinate 17 deg., 16 min. and 43 sec. East	83	8	I2,A1,2I2	M
12	Altitude of site	Altitude of site (meters above sea level; as sign followed by number)	91	5	I5	M
13	Frequency block	T-DAB frequency block	96	3	A3	M
14	Centre frequency	Nominal centre frequency in MHz (including decimal point)	99	9	F9.3	M
15	Block offset in Hz	Block centre frequency offset in Hz - defined as: (block centre frequency to be used) - (nominal block centre frequency) - as sign followed by a number	108	8	I8	M
16	ERP max - hor	Maximum e.r.p. of horizontally polarised component (in dBW; as sign followed by a number including a decimal point)	116	5	F5.1	M* 18
17	ERP max – vert	Maximum e.r.p. of vertically polarised component (in dBW; as sign followed by a number including a decimal point)	121	5	F5.1	M* 18
18	Polarisation	Polarisation ( <b>H/V/M</b> )	126	1	A1	M
19	Height of antenna	Height of transmitting antenna (meters above ground level)	127	3	I3	M
20	Directivity	Directivity ( <b>D</b> irectional/ <b>N</b> on-directional)	130	1	A1	M
21	Ant. pattern–hor	Antenna attenuation - horizontal. 36 values of e.r.p. reduction (in dB) of the horizontally polarised component in the horizontal plane relative to the maximum e.r.p. component as given in field 16 (at 10 degree intervals, starting at North, clockwise)	131	72	36I2	M** 20, 16
22	Ant. pattern–vert	Antenna attenuation- vertical. 36 values of e.r.p. reduction (in dB) of the vertically polarised component in the horizontal plane relative to the maximum e.r.p. as given in field 17 (at 10 degree intervals, starting at North, clockwise)	203	72	36I2	M** 20, 17
23	Heff 1	Effective antenna height. Put 'U' if the effective height of the antenna is the same in all directions. Otherwise put 'N'	275	1	A1	M
24	Heff values	If the preceding field contains 'U' give the maximum effective antenna height. Otherwise give 36 values of effective antenna height (in meters, at 10 degree intervals, starting at North, clockwise)	276	180	36xI5	M 23
25	Spectrum mask	Spectrum mask	456	1	I1	M,*** 1
26	Date – submission	Date of submission (DDMMYYYY)	457	8	2I2, I4	M
27	Agreement numbers	Numbers that identify bilateral agreements relevant for this allotment/assignment as they appear in the relevant Agreement (Wi95revMa02 or Ma02) - 5 digits each	465	100	20(A5)	O
28	Status	Actual status of the proposal (Proposed/Co-ordinated/Withdrawn)	565	1	A1	O
29	Date - status	Date when the status indicated in the previous field became effective	566	8	2I2,I4	O
30	Remarks	Unused or remarks	574	194	A194	O
99	Housekeeping	Reserved for database housekeeping purposes	768	32	A32	O

Record length: 799 characters

\* If field 18 (Polarisation) contains H then field 16 (ERPmax - hor) is mandatory.

If field 18 (Polarisation) contains V then field 17 (ERPmax - vert) is mandatory.

If field 18 (Polarisation) contains M then fields 16 and 17 are mandatory.

\*\* If field 20 contains 'D' then either field 21 (Antenna pattern - hor) or 22 (Antenna pattern - vert) or both become mandatory.

\*\*\*If the record identifier in field 1 is 'ASS2' then the field 25 'Spectrum mask' is unused.

## 3.5.2 T-DAB assignment (transmitter) record

Field	Field name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be <b>TAD1</b>	1	4	A4	M
2	Administration ID	ITU code for administration responsible (padded by underscores to 3 characters)	5	3	A3	M
3	Transmitter ID	Identification code of the transmitter used by organisation (Identical to the 'Assignment ID' - field 5 in the <i>T-DAB assignment requirement</i> file)	8	9	A9	M
4	Update code	Update code used by organisation	17	1	A1	O
5	Serial number	Space reserved for serial number (e.g. ITU No.)	18	9	A9	O
6	Status code	Status code ( <b>O</b> perating/ <b>N</b> ot operating)	27	1	A1	O
7	Date – operation	Date of entry into operation (DDMMYYYY)	28	8	2I2, I4	O
8	Country – location	ITU code for country in which transmitter is sited	36	3	A3	M
9	Transmitter name	Name of the transmitter	39	20	A20	M
10	Latitude	Latitude (in degrees, N, min., sec.)	59	7	I2,A1,2I2	M
11	Longitude	Longitude (in degrees, E/W, min., sec.)	66	8	I3,A1,2I2	M
12	Altitude of site	Altitude of site (meters above sea level; as sign followed by a number)	74	5	I5	M
13	Unused 1	Unused	79	1		
14	Protection level	T-DAB protection level (1, 2, 3, 4, or 5)	80	1	I1	O
15	T-DAB mode	T-DAB mode (1, 2, 3, or 4)	81	1	I1	M
16	Frequency block	T-DAB frequency block	82	3	A3	M
17	Spectrum mask	Spectrum mask	85	1	A1	M
18	Unused 2	Unused	86	3		
19	Centre frequency	Block centre frequency in MHz (including decimal point)	89	9	F9.3	M
20	Block offset in Hz	Block centre frequency offset in Hz – defined as: (block centre frequency to be used) - (nominal block centre frequency) - as sign followed by a number	98	8	I8	M
21	Unused 3	Unused	106	1		
22	ERP max - hor	Maximum e.r.p. of horizontally polarised component (in dBW; as sign followed by a number including decimal point)	107	5	F5.1	M* 29
23	ERP max – vert	Maximum e.r.p. of vertically polarised component (in dBW; as sign followed by a number including a decimal point)	112	5	F5.1	M* 29
24	SFN ID	Identifier for SFN	117	5	A5	O
25	Relative timing	Relative timing of transmitter within an SFN (in $\mu$ sec)	122	6	I6	O
26	Allotment ID	T-DAB allotment identifier (ITU code for administration, followed by 5-digit identification number)	128	8	A8	M
27	Unused 4	Unused	136	9		
28	Polarisation	Polarisation ( <b>H/V/M</b> )	145	1	A1	M
29	Height of antenna	Height of antenna (meters above ground level)	146	3	I3	M
30	Directivity	Directivity ( <b>D</b> irectional/ <b>N</b> on-directional)	149	1	A1	M
31	Ant. pattern-hor	36 values of e.r.p. reduction (in dB) of the horizontally polarised component in the horizontal plane relative to the maximum e.r.p. of the horizontally polarised component as given in field 22 (at 10 degrees intervals, starting at North)	150	72	36I2	M** 31, 22
32	Ant. pattern-vert	36 values of e.r.p. reduction (in dB) of the vertically polarised component in the horizontal plane relative to the maximum e.r.p. of the vertically polarised component as given in field 23 (at 10 degree intervals, starting at North)	222	72	36I2	M** 31, 23
33	Beam tilt – hor	Beam tilt angle of the horizontally polarised component (in degrees, negative if above the horizontal)	294	4	F4.1	O
34	Unused 5	Unused	298	2		
35	Beam tilt – vert	Beam tilt angle of the vertically polarised component (in degrees, negative if above the horizontal)	300	4	F4.1	O
36	Heff 1	Effective antenna height. Put 'U' if the effective height of the antenna is the same in all directions. Otherwise put 'N'.	304	1	A1	M
37	Unused 6	Unused	305	2		
38	Heff max	Maximum effective antenna height (m)	307	5	I5	O

Field	Field name	Item	Start Column	Width	Type	Status
39	Heff values	If the field 37 contains 'N', give 36 values of effective antenna height (in meters, at 10 degree intervals, starting at North)	312	180	36I5	M 37
40	Tx provider	Transmission provider	492	5	A5	O
41	Service provider	Service provider	497	5	A5	O
42	Design. emission	Designation of emission	502	9	A9	O
43	Date-last change	Date of last change to data in this record (DDMMYYYY)	511	8	2I2, I4	M
44	Agreement numbers	Numbers that identify bilateral agreements relevant for this allotment/assignment as they appear in the relevant Agreement (Wi95revMa02 or Ma02) - 5 characters each	519	100	20(A5)	O
45	Remarks	Unused or remarks	619	139	A139	O
46	GEO datum	Designation of a geographical co-ordination system used for geographical co-ordinates in fields 10 and 11 (Examples: WGS84, EURef89, ...). If blank, WGS84 is assumed.	758	10	A10	O
99	Housekeeping	Reserved for database housekeeping purposes	768	32	A32	O

Record length: 799 characters

- \* If field 28 (Polarisation) contains H then field 22 (ERPmax - hor) is mandatory.  
If field 28 (Polarisation) contains V then field 23 (ERPmax - vert) is mandatory.  
If field 28 (Polarisation) contains M then fields 22 and 23 are mandatory.
- \*\* If field 30 contains D then either field 31 (Antenna pattern - hor) or 32 (Antenna pattern - vert) or both become mandatory.

The T-DAB assignment file TAD1 is used for entries in the updated T-DAB assignment list, i.e. for the assignments that are converted from the allotments, in accordance with the relevant international agreement (Wiesbaden Agreement 1995 as revised in Maastricht 2002 or Maastricht Agreement 2002). It shall not be mistaken for the T-DAB assignment requirement file (ASS1 or ASS2 as defined in 3.5.1.2) which is used for publication of the co-ordination requirements.

Test Points are not needed for T-DAB assignment because they are given with the associated allotment.

**3.5.3 T-DAB allotment record**

Field	Field name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be 'AAD1'	1	4	A4	M
2	Administration ID	ITU code for administration responsible	5	3	A3	M
3	Allotment ID	T-DAB allotment identifier (5-digits identification number)	8	5	I5	M
4	ID code	Identification code used by administration	13	9	A9	O
5	Update code	Update code used by administration	22	1	A1	O
6	Serial number	Space reserved for serial number (e.g. ITU No.)	23	9	A9	O
7	Status code	Status code ( <u>O</u> perating/ <u>N</u> ot operating)	32	1	A1	O
8	Date – operation	Date of entry into operation of first transmitter (DDMMYYYY)	33	8	2I2, I4	O
9	Allotment name	Allotment name	41	20	A20	M
10	Frequency block	T-DAB frequency block	61	3	A3	M
11	Centre frequency	Block centre frequency in MHz (including decimal point)	64	9	F9.3	M
12	Reference network	Type of the reference network (the standard reference models 1, 2 and 3; see Section 5.3 of Annex2 of the Maastricht final acts)	73	1	I1	M
13	Block offset in Hz	Block centre frequency offset in Hz - defined as: (block centre frequency to be used) - (nominal block centre frequency) - as sign followed by a number	74	8	I8	M
14	Polarisation	Polarisation ( <u>H</u> / <u>V</u> / <u>M</u> )	82	1	A1	M
15	Contour ID	If the test points on country boundary are to be used for the allotment enter contour identifier for the contour of the country boundary. (Corresponding to field 3 in CBP2 file. See also definition of country boundary in section 3.6.). Otherwise leave blank. If blank, it is assumed that the allotment boundary test points are to be used.	83	4	I4	O
16	Number of TPs	If the previous field is blank, enter number of boundary points forming the boundary of the allotment (minimum 3).	87	3	I3	M
17	Agreement numbers	Numbers that identify bilateral agreements relevant for this allotment as they appear in the relevant Agreement (Wi95revMa02 or Ma02) - 5 characters each	90	100	20A(5)	O
18	GEO datum	Designation of a geographical co-ordination system used for geographical co-ordinates in fields 6 and 7 (Examples: WGS84, EURef89, ). If blank, WGS84 is assumed.	190	10	A10	O
19	Date – last change	Date of last change to data in this record (DDMMYYYY)	200	8	2I2, I4	M
20	Remarks	Unused or remarks	208	60	A60	O
99	Housekeeping	Reserved for database housekeeping purposes	268	32	A32	O

Record length: 299 characters

T-DAB allotment record is linked with two following data files containing allotment boundary points (BTP2 record) and calculation test points (CTP2 record). This relation is uniquely defined by the field 2 (Administration ID) and field 3 (Allotment ID) taken together. These fields which appear in all three data formats One record in the allotment file AAD1 corresponds to a set of records (at least three) in the allotment boundary file and a set of records in the calculation test points file.

The T-DAB allotment file AAD1 is used for entries in the updated T-DAB allotment plan, i.e. for the allotments that are successfully coordinated, in accordance with the relevant international agreement (Wiesbaden Agreement 1995 as revised in Maastricht 2002 or Maastricht Agreement 2002). It shall not be mistaken for the T-DAB allotment requirement file (ALL1 or ALL2 as defined in 3.5.1.1) which is used for publication of the co-ordination requirements.

### 3.5.4 T-DAB allotment boundary points

Field	Field name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be <b>BTP2</b>	1	4	A4	M
2	Administration ID	ITU code for administration responsible	5	3	A3	M
3	Allotment ID	T-DAB allotment identifier (5-digits identification number)	8	5	I5	M
4	Contour ID	Identifier for a closed contour belonging to this allotment. (number between 001 and 999. '0' means that a country boundary is to be used)	13	3	I3	M
5	TP serial number	Serial number of the allotment boundary point within the contour (number between 001 and 999)	16	3	I3	M*
6	Latitude	Latitude (in degrees, N, min., sec.)	19	7	I2,A1,2I2	M*
7	Longitude	Longitude (in degrees, E/W, min., sec.)	26	8	I3,A1,2I2	M*

Record length: 33 characters

Allotment boundary file contains a set of geographical points representing the area of a given allotment. The allotment boundary is represented by one or more closed contours. Each contour represents a single geographical area. A boundary contour can be constructed by linear interpolation between the boundary points and shall not cross itself.

An allotment may consist of multiple non contiguous geographical areas. In that case each geographical area is represented by a separate closed contours.

A set of records (minimum three) in this file corresponds with a single record in the allotment file (AAD1). This relation is uniquely defined by the field 2 (Administration ID) and field 3 (Allotment ID) which appear in both data formats, taken together.

### 3.5.5 T-DAB allotment calculation test point

Field	Field name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be <b>CTP2</b>	1	4	A4	M
2	Administration ID	ITU code for administration responsible	5	3	A3	M
3	Allotment ID	T-DAB allotment identifier (5-digits identification number)	8	5	I5	M
5	CTP serial number	Serial number of the calculation test point (001 – 999)	13	3	I3	M
6	Latitude	Latitude (in degrees, N, min., sec.)	16	7	I2,A1,2I2	M
7	Longitude	Longitude (in degrees, E/W, min., sec.)	23	8	I3,A1,2I2	M
8	Calculated field strength	Referent field strength calculated according to the relevant agreement (i.e. Ma02, Wi95)	31	4	F4.1	M
9	Agreed field strength	Field strength at the test point in dB( $\mu$ V/m) agreed between relevant administrations, if different from the value in field 9 (a number including a decimal point)	31	4	F4.1	O
10	Date – last change	Date of last change to value in field 9 (DDMMYYYY)	35	8	2I2, 14	M*

Record length: 42 characters

\* If the field 9 contains a value, then the field 10 becomes mandatory.

Calculation test points file contains a set of geographical points to be used for interference calculation in accordance with Annex 4 of the Wiesbaden Special Arrangement (1995), as revised in Maastricht 2002 and Maastricht Special Arrangement (2002), respectively.

A set of records in this file corresponds to a single record in the allotment file (AAD1). This relation is uniquely defined by the field 2 (Administration ID) and field 3 (Allotment ID) which appear in both data formats, taken together.

### 3.6 Other services

#### 3.6.1 Other services - format<sup>1</sup>

Field	Field name	Item	Start Column	Width	Type	Status
1	Record type	Record type identifier, must be <b>OS01</b>	1	4	A4	M
2	Administration ID	ITU code for administration responsible	5	3	A3	M
3	OS type	Other service type code	8	3	A3	M
4	Type of operation	Record for <b>Transmit/Receive/Both</b> operation.	11	1	A1	M
5	ID code	Identification code used by administration	12	5	I5	M
6	Station name	Name. Up to 20 alphanumeric characters.	17	20	A20	M
7	Year – operation	Year in which this requirement may be brought into service. This field is not used by the planning software	37	4	I4	O
8	Field strength	Field strength to be protected in dB ( $\mu\text{V}/\text{m}$ ). Use value 999 for ‘Transmitting-only’ service where reception parameters are specified in a separate record.	41	3	I3	M
9	Percentage of time	Percentage of time for which protection is sought	44	4	F4.1	M
10	Tx co-ordinates	Transmitter site. Co-ordinates (longitude and latitude) in degrees and minutes. Example: 017E1645N23 is co-ordinate 17E16, 45N23	48	11	I3,A1,I2, I2,A1,I2	M
11	Centre frequency	Centre frequency in kHz	59	7	I7	M
12	ERP max	Maximum effective radiated power (e.r.p.) in dBW. Use value -99 for ‘Receiving-only’ service where transmission parameters are specified in a separate record.	66	3	I3	M
13	Altitude of site	Altitude of site (meters above sea level; as sign followed by a number)	69	5	I5	M
14	Height of antenna	Height of antenna (m above ground level)	74	3	I3	M
15	Heff 1	Effective transmitting antenna height 1. Put "U" if the effective height of the antenna is the same in all directions. Otherwise put "N"	77	1	A1	M
16	Heff values	Effective transmitting antenna height 2. If the preceding field contains "U" give the effective height. Otherwise, give 36 values of effective height at 10° intervals, starting at North.	78	180	36xI5	M 15
17	Polarisation	Polarisation ( <b>H/V/M</b> )	258	1	A1	M
18	Antenna azimuth	Azimuth of maximum antenna gain in degrees from North	259	3	I3	O
19	Antenna pattern 1	Antenna pattern 1. Put "N" if the transmitting antenna is non-directional or the width of the main lobe is greater than 99 degrees. Otherwise put "D".	262	1	A1	M
20	Antenna pattern 2	Antenna pattern 2. If the previous field contains "D", give 36 values of the reduction of e.r.p., relative to the maximum value, at 10° interval, starting at North	263	72	36xI2	M, 19
21	Rx antenna width	Width of main lobe of receiving antenna (3dB) in degrees. In the case of a non-directional receiving antenna enter "O".	335	2	A2	M
22	Rx reduction	Reduction outside main lobe of receiving antenna in dB. In the case of a non-directional receiving antenna enter "O".	337	2	A2	M 21
23	Test points 1	Test points 1. Enter "B" if test points for the whole country is to be used. Otherwise leave blank	339	1	A1	[O]
24	Number of TPs	Test points 2. If previous field is blank, enter number of test points (maximum 36).	340	2	I2	O 23
25	TP values	Test points. Up to 36 co-ordinates (longitude and latitude) in degrees and minutes. Example: 017E1645N23 is co-ordinate 17E16, 45N23	342	396	36(I3,A1,I2 I2,A1,I2)	O 23, 24
26	Date – last change	Date of last change to data in this record (DDMMYYYY)	738	8	I2,I2,I4	M
27	Remarks	Unused or remarks	746	12	A22	O
28	GEO datum	Designation of a geographical co-ordination system used for geographical co-ordinates in field 10 (Examples: WGS84, EURef89, ...). If blank, WGS84 is assumed.	758	10	A10	O
99	Housekeeping	Reserved for housekeeping purposes	768	32	A32	O

Record length: 799 characters

<sup>1</sup> This format has been used for collectin of Other Service data in preparation for Maastrich T-DAB planning meeting in 2002.



3.6.2 Other services - format<sup>1</sup>

Field	Field name	Item	Start Column	Width	Type	Status
1	Record type	File identifier, must be <b>OS02</b>	1	4	A4	M
2	Administration ID	ITU code for administration responsible	5	3	A3	M
3	OS type	Other service type code	8	3	A3	M
4	Type of operation	Record for <b>Transmit/Receive/Both</b> operation.	11	1	A1	M
5	ID code	Identification code used by administration.	12	5	I5	M
6	Station name	Name. Up to 20 alphanumeric characters.	17	20	A20	M
7	Year – operation	Year in which this requirement may be brought into service. This field is not used by the planning software	37	4	I4	O
8	Field strength	Field strength to be protected in dB (µV/m). Use value 999 for ‘Transmitting-only’ service where reception parameters are specified in a separate record.	41	3	I3	M
9	Percentage of time	Percentage of time for which protection is sought	44	4	F4.1	M
10	Tx co-ordinates	Transmitter site. Co-ordinates (longitude and latitude) in degrees and minutes. Example: 017E1645N23 is co-ordinate 17E16, 45N23	48	11	I3,A1,I2, I2,A1,I2	M
11	Centre frequency	Centre frequency in kHz	59	7	I7	M
12	ERP max	Maximum effective radiated power (e.r.p.) in dBW. Use value -99 for ‘Receiving-only’ service where transmission parameters are specified in a separate record.	66	3	I3	M
13	Altitude of site	Altitude of site (meters above sea level; as sign followed by a number)	69	5	I5	M
14	Height of antenna	Height of antenna (meters above ground level)	74	3	I3	M
15	Heff 1	Effective transmitting antenna height 1. Put "U" if the effective height of the antenna is the same in all directions. Otherwise put "N"	77	1	A1	M
16	Heff values	Effective transmitting antenna height 2. If the preceding field contains "U" give the effective height. Otherwise, give 36 values of effective height at 10° intervals, starting at North	78	180	36xI5	M, 15
17	Polarisation	Polarisation ( <b>H/V/M</b> )	258	1	A1	M
18	Antenna azimuth	Azimuth of maximum antenna gain in degrees from North	259	3	I3	O
19	Antenna pattern 1	Antenna pattern 1. Put "N" if the transmitting antenna is non-directional or the width of the main lobe is greater than 99 degrees. Otherwise put "D".	262	1	A1	M
20	Antenna pattern 2	Antenna pattern 2. If the previous field contains "D", give 36 values of the reduction of e.r.p., relative to the maximum value, at 10° interval, starting at north	263	72	36xI2	M, 19
21	Unused 1	Unused	335	2		
22	Unused 2	Unused	337	2		
23	Test points 1	Test points 1. Enter "B" if test points for whole country is to be used. Otherwise leave blank	339	1	A1	[O]
24	Number of TPs	Test points 2. If previous field is blank, enter number of test points (max. 36)	340	2	I2	O, 23
25	TP values	Test points. Up to 36 co-ordinates (longitude and latitude) in degrees and minutes. Example: 017E1645N23 is co-ordinate 17E16, 45N23	342	396	36(I3,A,I2, ,I2,A1,I2)	O, 23, 24
26	Date – last change	Date of last change to data in this record (DDMMYYYY)	738	8	I2,I2,I4	M
27	Rx antenna azimuth	Azimuth of maximum receiving antenna gain in degrees from North	746	3	I3	O
28	Rx antenna pattern	36 values of the reduction of receiving antenna gain, relative to the maximum value, at 10° interval (starting at North)	749	72	36xI2	O
29	Remarks	Unused or remarks	821	37	A37	O
30	GEO datum	Designation of a geographical co-ordination system used for geographical co-ordinates in field 10. (Examples: WGS84, EURef89, ... ) If blank, WGS84 is assumed.	758	10	A10	O
99	Housekeeping	Reserved for housekeeping purposes	868	32	A32	O

Record length: 899 characters

Note: Other Services - format 2 shall be used when the details about receiving antenna are known. However, for consistency with MIFR format 1 is preferred.

<sup>1</sup> This format has been used for collectin of Other Service data in preparation for Maastrich T-DAB planning meeting in 2002.

### 3.7 Country boundaries

This file contains a set of geographical points describing the boundaries of European countries. The country boundary test points were originally defined on the basis of the ITU digital world map and later agreed by the CEPT countries in the process of implementation of the Chester '97 Agreement. Linear interpolation between adjacent boundary points is assumed for construction of country borderlines.

#### 3.7.1 Bounday points

Field	Field name	Item	Start column	Width	Type	Status
1	Record type	Record type identifier, must be 'CBP1'	1	4	A4	M
2	Segment ID	Segment identifier (4-digit number, unique throughout the database)	5	4	I4	M
3	Country 1	ITU code for the administration of a country on one side of the boundary line	9	3	A3	M
4	Country 2	ITU code for the administration of a country on the other side of the boundary line sharing the same segment. (If the segment belongs only to one country, this field shall be left blank.)	12	3	A3	O
5	Boundary point ID	Boundary point identifier within a segment (number between 001 and 999)	15	3	I3	M
6	Latitude	Latitude of test point (in degrees, N, min., sec.)	18	7	I2,A1,2I2	M
7	Longitude	Longitude of test point (in degrees, E/W, min., sec.)	25	8	I3,A1,2I2	M

Record length: 32 characters

A continuous section of a borderline is represented by a sub-set of points which is called *segment*. The whole country boundary of any given country consists of one or more such segments. A segment may represent border of one country only or a common border between the neighbouring countries. Where the latter is the case, identical boundary points are used as a borderline segment for both countries. An advantage if this concept is that overlaps between two countries can not occur.

Segment identifier (field 2) and boundary point identifier (field 5) taken together form a unique key to identify any individual country boundary point. Contiguous segments of the boundary overlap so that the first point in one segment is identical to the last point in the previous segment.

#### 3.7.2 Country boundaries

Field	Field name	Item	Start column	Width	Type	Status
1	Record type	Record type identifier, must be 'CBP2'	1	4	A4	M
2	Country	ITU code for the administration	5	3	A3	M
3	Contour ID	Boundary contour identifier	8	4	I4	M
4	Segment ID	Segment identifier	12	4	I4	M
5	Reversed	Shall the boundary points in this segment be considered in the original or in the reversed order for construction of the boundary contour? 'I'= YES; 'O'=NO	16	1	I1	M
6	Starting point	Does this segment contain a starting boundary point for that contour? 'I'= YES; 'O'=NO	17	1	I1	M
7	Next segment	Identifier for the next segment to be used to establish a boundary contour. ('O' indicates that this segment is the last one to be used, i.e. there is no next segment.)	18	4	I4	M

Record length: 22 characters

Some countries contain multiple geographically separated (i.e. islands or areas separated by a territory of other country), thus can not be described by a single encircling closed contour (made up of one or more segments). Each geographically separate area forming part of the same country is represented by a separate closed contour. Contour identifier is unique within a scope of a single country.

### 3.8 Cross-reference table

The table below contains all data elements used in format specification tables, presented in alphabetical order. Each column is relevant for one record type and contains field numbers where the data elements appear within a given record structure.

Data element	TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTE <sub>x</sub>	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
Administration ID	2	2	3	2	2	3	2	2	3	2	2	2	2	2	2	2	2	2	2	2		
Agreed field strength												9					9					
Agreement numbers										22				27	17			44				
Allotment ID										3	3	3	3	3	3	3	3	26				
Allotment name										9			6	8	9							
Altitude of site	12			12			12							12				12	13	13		
Ant. pattern-hor	32			36			30							21				31				
Ant. pattern-vert	33			37			31							22				32				
Antenna azimuth																			18	18		
Antenna pattern 1																			19	19		
Antenna pattern 2																			20	20		
Assignment ID														5								
Bandwidth							16			13												
Beam tilt - hor	34			38			32											33				
Beam tilt – vert	36			40			34											35				
Block offset in Hz													9	15	13			20				
Boundary TPs													10									
Boundary point ID																					5	
CTP serial number												5					5					
Calculated filed strength												8					8					
Carrier&guard int.							14															
Centre frequency														14	11			19	11	11		
Ch. centre freq.							18			15												
Channel	15						15			12												
Colour system	14																					
Contour ID										20	4		16		15	4						3
Country																						2
Country - location	8			8			8							7				8				

Data element	TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
Country 1																					3	
Country 2																					4	
Date - calculations		7			7			7														
Date - last change	44			47			42			24		10						43	26	26		
Date - operation	7			7			7			8				6	8			7				
Date - status													15	29								
Date - submission													13	26								
Design. emiss. S1	46																					
Design. emiss. S2	47																					
Design. emiss. V	45																					
Design. emission				48			43											42				
Digital TV system							13															
Directivity	31			35			29							20				30				
Disputed?	39						37															
ERP max																			12	12		
ERP max - hor	20			20			21							16				22				
ERP max - vert	21			21			22							17				23				
Excluded?	38						36															
Field strength																			8	8		
Freq. dev. max				13																		
Frequency block													7	13	10			16				
Frequency sub-c. 1				24																		
Frequency sub-c. 2				29																		
GEO datum	49			51			45			23					18			46	28	30		
Heff 1	37			41			35							23				36	15	15		
Heff max	40			43			38											38				
Heff values	41			44			39							24				39	16	16		
Height of antenna	30			34			28							19				29	14	14		
Housekeeping	99	99	2	99	99	2	99	99	2	99			99	99	99			99	99	99		
ID code										4					4				5	5		
ITU number	5						5															
Latitude	10			10			10				6	6		10		6	6	10				6
Longitude	11			11			11				7	7		11		7	7	11				7

Data element	TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTE <sub>x</sub>	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2	
Next segment																							7
Nominal frequency	17			17																			
Number of TPs		5	6		5	6		5	6	21			11		16								
OS type																			3	3			
Offset in Hz				18			19			16													
Offset type	19			19																			
Organisation ID	42			45																			
Peak deviation 1				26																			
Peak deviation 2				31																			
Percentage of time																			9	9			
Polarisation	29			33			27			18				18	14			28	17	17			
Power ratio 1	24																						
Power ratio 2	28																						
Prim. sound freq.	22																						
Prim. sound offset	23																						
Procedure													4	4									
Programme ID	43			46																			
Protection level																		14					
Reception mode							25			19													
Record type	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Reference network										17			8		12								
Relative timing							24											25					
Remarks	48	8		50	8		44	8		25			17	30	20			45	27	29			
Reversed																							5
Rx antenna azimuth																							27
Rx antenna pattern																							28
Rx antenna width																							21
Rx reduction																							22
SFN ID							23											24					
Sec. sound freq.	25																						
Sec. sound system	27																						
Segment ID																						2	4
Serial number				5						6					6			5					



## 4 VALIDATION RULES

### 4.1 General

This chapter contains an indication of possible values for individual data elements. Presentation of such an information for each data element depends on the type of data. The following categories have been identified:

- For data elements with a limited set of possible values (i.e. TV channel or colour system), a list of possible values is provided. However, a valid record can contain only one value out of a given set.
- For data elements that can have any value within a given interval, the interval boundaries are specified. Note: the boundary values are inclusive.
- Data elements that can contain any value are not included in this chapter.

Where appropriate, format of a given data element is specified.

Data elements are identified by field names as they appear in the format specification tables.

Interpretation of the table which is provided for each data element:

- Each column represents one of the data formats specified in this Report
- First row: record type identifier of a given data formats
- Second row: field number where this particular data elements appears within a given record. Blank second row indicates that a record does not contain this particular data element.

### 4.2 Data elements<sup>1</sup>

Field name: **Administration ID / Country / Country – location / Country 1 / Country 2**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
2, 8	2	3	2,8	2	3	2, 8	2	3	2	2	2	2	2, 7	2	2	2	2, 8	2	2	3, 4	2

ITU code for CEPT administration:

<b>ALB</b> Albania	<b>FIN</b> Finland	<b>MKD</b> The Former Yugoslav Republic of Macedonia
<b>AND</b> Andorra	<b>G</b> United Kingdom	<b>MLT</b> Malta
<b>AUT</b> Austria	<b>GRC</b> Greece	<b>NOR</b> Norway
<b>AZE</b> Azerbaijan	<b>HNG</b> Hungary	<b>POL</b> Poland
<b>BEL</b> Belgium	<b>HOL</b> Netherlands	<b>POR</b> Portugal
<b>BIH</b> Bosnia and Herzegovina	<b>HRV</b> Croatia	<b>ROU</b> Romania
<b>BLR</b> Belarus	<b>I</b> Italy	<b>RUS</b> Russian Federation
<b>BUL</b> Bulgaria	<b>IRL</b> Ireland	<b>S</b> Sweden
<b>CVA</b> Vatican City	<b>ISL</b> Iceland	<b>SMR</b> San Marino
<b>CYP</b> Cyprus	<b>LIE</b> Liechtenstein	<b>SUI</b> Switzerland
<b>CZE</b> Czech Republic	<b>LTU</b> Lithuania	<b>SVK</b> Slovak Republic
<b>D</b> Germany	<b>LUX</b> Luxembourg	<b>SVN</b> Slovenia
<b>DNK</b> Denmark	<b>LVA</b> Latvia	<b>TUR</b> Turkey
<b>E</b> Spain	<b>MCO</b> Monaco	<b>UKR</b> Ukraine
<b>EST</b> Estonia	<b>MDA</b> Moldova	<b>YUG</b> Yugoslavia
<b>F</b> France		

<sup>1</sup> Only those data elements are included here for which a set of possible values is not precisely described in the format specification tables.

Field name: **Allotment ID**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
									3	3	3	3	3	3	3	3	26				

5-digit number created at the planning conference (i.e. Wiesbaden 1995 or Maastricht 2002) or chosen by the responsible administration for subsequently co-ordinated new entries in order to identify individual allotments in the allotment plan. For the assignments created by means of conversion from the allotments it specifies the allotments of origin.

For T-DAB, allotment ID is unique within a scope of a single country. Taken together with the Administration ID forms an unique allotment identifier within the scope of the whole T-DAB plan.

Field name: **Altitude of site**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
12			12			12							12				12	13	13		

Range: **-50 to 4800** meters.

Field name: **Antenna azimuth / Rx antenna azimuth**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
																		18	18,27		

Range: **0 to 360** degrees.

Field name: **Antenna pattern 1 / Antenna pattern 2 / Ant. pattern-hor / Ant. pattern-vert  
Rx antenna pattern**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
32,33			36,37			30,31							21,22				31,32	19,20	19,20,28		

Range: **0 to 35** dB

For OS01 and OS02 only: Range: 0 to 50 dB. If the value is >50 dB issue a warning and allow entry)

Validation of a horizontal component only when polarisation is **Horizontal** or **Mixed** and antenna diagram is directional (field *Directivity* contains 'D').

Validation of a vertical component only when polarisation is **Vertical** or **Mixed** and antenna diagram is directional (field *Directivity* contains 'D').

If antenna is directional, this field is mandatory.

Also an error if:

- polarisation is Vertical and Horizontal antenna pattern is supplied
- polarisation is Horizontal and Vertical antenna pattern is supplied



Field name: **Bandwidth**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2	
						16			13													

Nominal bandwidth of the TV system:

- 8** 8 MHz
- 7** 7 MHz
- 6** 6 MHz

Field name: **Beam tilt – hor / Beam tilt - vert**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2	
34,36			38,40			32,34											33,35					

Beam tilt angle of the antenna.

Range: **-20** to **+20** degrees.Field name: **Carrier&guard int.**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2	
						14																

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li><b>A</b> Carriers: 2k, 1/32 guard interval ratio</li> <li><b>B</b> Carriers: 2k, 1/16 guard interval ratio</li> <li><b>C</b> Carriers: 2k, 1/8 guard interval ratio</li> <li><b>D</b> Carriers: 2k, 1/4 guard interval ratio</li> </ul> | <ul style="list-style-type: none"> <li><b>E</b> Carriers: 8k, 1/32 guard interval ratio</li> <li><b>F</b> Carriers: 8k, 1/16 guard interval ratio</li> <li><b>G</b> Carriers: 8k, 1/8 guard interval ratio</li> <li><b>H</b> Carriers: 8k, 1/4 guard interval ratio</li> </ul> |
|--|--|

Field name: **Channel**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2	
15						15			12													

- |  |   |   |  |
|--|---|---|--|
| <ul style="list-style-type: none"> <li><b>2</b> Channel 2</li> <li><b>2*</b> Channel 2*</li> <li><b>3</b> Channel 3</li> <li><b>4</b> Channel 4</li> <li><b>5</b> Channel 5</li> <li>...</li> <li><b>12</b> Channel 12</li> <li><b>21</b> Channel 21</li> <li>...</li> <li><b>68</b> Channel 68</li> <li><b>69</b> Channel 69</li> </ul> | <ul style="list-style-type: none"> <li><b>A</b> Channel A</li> <li>...</li> <li><b>H</b> Channel H</li> <li><b>H1</b> Channel H1</li> <li><b>H2</b> Channel H2</li> </ul> | <ul style="list-style-type: none"> <li><b>ID</b> Channel ID</li> <li><b>IE</b> Channel IE</li> <li>...</li> <li><b>IK</b> Channel IK</li> </ul> | <ul style="list-style-type: none"> <li><b>L1</b> Channel L1</li> <li>...</li> <li><b>L10</b> Channel L10</li> <li><b>R1</b> Channel R1</li> <li>...</li> <li><b>R12</b> Channel R12</li> </ul> |
|--|---|---|--|

Consistency with the nominal / centre frequency is to be checked.

Note: Channel arrangement and numbering for DVB-T is the same as for analogue TV.

Field name: **Centre frequency / Ch. centre freq.**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTE <sub>x</sub>	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
						18			15				14	11			19	11	11		

For DVB-T: - must be centre frequency of the channel (see Annex 1) - expressed in MHz

For T-DAB: - must be in accordance with the values in Annex 2

For Other Services: Must be in accordance with the channelling arrangement for a specific other service.  
Range: **30000 to 150000 kHz.**

Field name: **Colour system**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTE <sub>x</sub>	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
14																					

Colour system for analogue television:

- N NTSC
- P PAL
- S SECAM

Field name: **Design. Emission / Design. emiss. S1 / Design. emiss. S2 / Design. emiss. V**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTE <sub>x</sub>	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
45,46, 47			48			43											42				

Alphanumeric code as defined in Appendix 1 of the Radio Regulations. Examples and formulae are given in Recommendation ITU-R SM.1138.

Field name: **Digital TV system**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTE <sub>x</sub>	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
						13															

- |                                |                                  |                                  |
|--------------------------------|----------------------------------|----------------------------------|
| <b>A1</b> QPSK, Code rate: 1/2 | <b>B1</b> 16 QAM, Code rate: 1/2 | <b>C1</b> 64 QAM, Code rate: 1/2 |
| <b>A2</b> QPSK, Code rate: 2/3 | <b>B2</b> 16 QAM, Code rate: 2/3 | <b>C2</b> 64 QAM, Code rate: 2/3 |
| <b>A3</b> QPSK, Code rate: 3/4 | <b>B3</b> 16 QAM, Code rate: 3/4 | <b>C3</b> 64 QAM, Code rate: 3/4 |
| <b>A5</b> QPSK, Code rate: 5/6 | <b>B5</b> 16 QAM, Code rate: 5/6 | <b>C5</b> 64 QAM, Code rate: 5/6 |
| <b>A7</b> QPSK, Code rate: 7/8 | <b>B7</b> 16 QAM, Code rate: 7/8 | <b>C7</b> 64 QAM, Code rate: 7/8 |

Field name: **Directivity**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTE <sub>x</sub>	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
31			35			29							20				30				

- D** Directional transmitting antenna
- N** Non-directional transmitting antenna

Field name: **ERP max / ERP max – hor / ERP max - vert**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
20,21			20,21			21,22							16,17				22,23	12	12		

Range: **-30 to 70 dBW**

Consistency between the values for horizontal and vertical component of ERP and polarisation to be validated.

If polarisation is horizontal, then the 'ERP max' value for vertical component shall be -99.9 or blank, but not 0 (zero).

If polarization is vertical, then the 'ERP max' value for horizontal component shall be -99.9 or blank, but not 0 (zero).

Field name: **Field strength**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
																		8	8		

Field strength to be protected (relevant for other services).

Range: **0 to 80 dB(μV/m)** Note: For radio astronomy the field strength values range from -39 dB(μV/m)

Value **999** is also accepted as it indicates 'transmitting only' service

Field name: **Freq. dev. max**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
			13																		

Maximum frequency deviation.

Range: **1 - 75 kHz**

Field name: **Frequency block**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
												7	13	10			16				

Values have to be as defined in the table in Annex 2.

Field name: **Frequency sub-c. 1**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
			24																		

Centre frequency of the 1<sup>st</sup> sub-carrier.

Values: **15 – 23 kHz**

Field name: **Frequency sub-c. 2**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
			26																		

Centre frequency of the 2<sup>nd</sup> sub-carrier in kHz.

Values: **53 – 76 kHz**

Field name: **Heff 1**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
37			41			35							23				36	15	15		

N Non-uniform effective antenna height

U Uniform effective antenna height

Field name: **Heff values / Heff max**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
40,41			43,44			38,39							24				38,39	16	16		

Values of effective height.

Range: **-3000 to 3000 m**

For *Heff values*: 1 or 36 values are to be entered.

If the field is linked to Heff 1, the following applies:

Heff 1="U" -> a single value is to be entered, representing Heff in all 36 directions

Heff 1="N" -> 36 values have to be entered

Field name: **Height of antenna**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
30			34			28							19				29	14	14		

Range: **0 to 600 meters**

Field name: **Housekeeping**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
99	99	2	99	99	2	99	99	2	99			99	99	99			99	99	99		

Characters within the record (normally 32) reserved for the purpose of data processing and calculations. No data shall be entered into this field by Administrations-

Field name: **Latitude**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
10			10			10				6	6		10		6	6	10			6	

Must be North for Europe

Note: some of the CEPT countries have territories south of equator.

Range: **0 to 90 degrees.**

Field name: **Longitude**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
11			11			11				7	7		11		7	7	11			7	

Range: **45 deg. West to 170 deg. East**

Note: The same rules for latitude and longitude apply for validation of the test points.

Field name: **Nominal frequency**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2	
17			17																			

For TV: The value must correspond to the channel number given in field TVA (15) - see Annex 1.  
 For FM radio: A uniform channel spacing of 100 kHz was adopted in principle for both monophonic and stereophonic emissions. The nominal carrier frequencies are, in principle, integral multiples of 100 kHz.<sup>1</sup>

Field name: **OS type**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
																		3	3		

Other service type code. See Annex 3.

Field name: **Offset in Hz / Block offset in Hz**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
			18			19			16			9	15	13			20				

For FM radio:  
 Offset is normally not used in FM, the GE84 Plan is based on multiples of 100 kHz. Nevertheless in so-called synchronised FM networks an offset in order to achieve a multiple of the pilot frequency may give an additional advantage. Therefore frequency differences of:

- 114 kHz in stead of 100 kHz (offset max 14 kHz for one of the transmitters)
- 209 kHz in stead of 200 kHz (offset max 9 kHz for one of the transmitters), and
- 304 kHz in stead of 300 kHz (offset max 4 kHz for one of the transmitters) may be used in some cases.

Field name: **Offset type**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
19			19			20															

For analogue television:

**N** Normal  
**P** Precision  
**S** Synchronised  
**U** Unspecified

For FM radio:

**N** Normal  
**S** Synchronised

Field name: **Peak deviation 1 / Peak deviation 2**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
			26, 31																		

Peak deviation of RF carrier caused by 1<sup>st</sup> sub-carrier and 2<sup>nd</sup> sub-carrier, respectively  
 Values are system specific:

RDS 1 – 7.5 kHz  
 DARC 4 kHz  
 HSDS 3.75 – 7.5 kHz  
 STIC 7.5 kHz

Field name: **Percentage of time**

<sup>1</sup> Geneva Agreement 1984

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
																		9	9		

Percentage of time for which protection of other service is sought.  
 Range: **50 to 99.9 %**

Field name: **Polarisation**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
29			33			27			18				18	14			28	17	17		

- H** Horizontal
- M** Mixed
- V** Vertical

Field name: **Power ratio 1 / Power ratio 2**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
24,28																					

Vision/sound power ratio for analogue TV transmitter

Range: **7 to 30 dB**.

For secondary sound system (TVA1, field 28), consistency with the field TVA1 (27) to be checked.

Field name: **Prim. sound freq.**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
22																					

Range: **-7 to +7 MHz**

Field name: **Prim. sound offset**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
23																					

Primary sound carrier offset value.

Range: **-750000 to +750000 Hz** (same as for the vision offset)

Field name: **Procedure**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
												4	4								

- ADD** Addition
- MOD** Modification
- SUP** Suppression

Field name: **Protection level**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
																	14				

Possible values: **1, 2, 3, 4 and 5**

Field name: **Reception mode**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2	
						25			19													

**F** Fixed  
**P** Portable  
**M** Mobile  
**H** Handheld

Field name: **Record type**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2	
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

**TVA1** - Analogue TV transmitter  
**TTA6** - Test points for analogue TV - TTA format 6  
**TTBx** - TTBx (6 different files; all having the same format)  
**FMA1** - Analogue FM broadcasting transmitter  
**TFA1** - Test points for FM radio - TFA format 1  
**TFBx** - TFBx (6 different files; all having the same format)  
**TVD1** - Digital TV transmitter  
**TTD1** - Test points for digital TV - TTD format 1  
**TTEx** - TTEx (6 different files; all having the same format)  
**AVD1** - DVB-T allotment  
**BTP1** - DVB-T allotment boundary points  
**CTP1** - DVB-T allotment calculation test points  
**ALL1 or ALL2** - T-DAB allotment requirement  
**ASS1 or ASS2** - T-DAB assignment requirement  
**AAD1** - T-DAB allotment  
**BTP2** - T-DAB allotment boundary test points  
**CTP2** - T-DAB allotment calculation test points  
**TAD1** - T-DAB assignment (transmitter)  
**OS01** - Other services - format 1  
**OS02** - Other services - format 2  
**CBP1** - Country boundary points  
**CBP2** - Country boundaries

Field name: **Reference network**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2	
									17			8		12								

At present, possible values are **1, 2 and 3**. Additional values needed for new reference networks.

Field name: **Relative timing**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
						24											25				

Relative timing of the transmitter within SFN.

Values: **0 – 224** μs

Field name: **Remarks**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
48	8		50	8		44	8		25			17	30	20			45	27	29		

Field intended for comments /remarks to be entered by the users. Not used in data processing nor in calculations.

Field name: **Rx antenna width**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
																		21			

The letter ‘O’ for non-directional antenna, otherwise value between **0** and **99** degrees.

Field name: **Rx reduction**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
																		22			

The letter ‘O’ for non-directional antenna, otherwise value between **0** and **60** dB.

Field name: **Sec. sound freq.**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
25																					

Range: **-7** to **+7** MHz

Consistency with *Secondary sound system* value in the field TVA1 (27) to be checked.

Field name: **Sec. sound system**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
27																					

- blank* No system
- F** FM
- N** NICAM

Field name: **Segment ID**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2	
																					2	4

Segment of the country boundary.

Range: **1 - 9999**

Field name: **Spectrum mask**



TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
													27				17				

Possible values for T-DAB in band III are **1** and **2**.

Field name: **Status**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
												14	28								

Current status of the proposal in co-ordination process.

**P** Proposed  
**C** Co-ordinated  
**W** Withdrawn

Field name: **Status code**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
6			6			6			7					7			6				

Current status of operation:

**N** Not operating  
**O** Operating

Field name: **Stereo system**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
			15																		

**O** Polar  
**I** Pilot tone

Field name: **Sub-carrier sys. 1**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
			23																		

**A** Ari  
**R** RDS or RDS+Ari used simultaneously  
**blank** No sub-carrier

Field name: **Sub-carrier sys. 2**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
			28																		

**D** Darc  
**S** SCA  
**X** Other system  
**blank** No 2<sup>nd</sup> sub-carrier

Field name: **T-DAB mode**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2	
																		15				

Possible values: 1, 2, 3 and 4.

Field name: **TP serial number / Boundary point ID / CTP serial number**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2
										5	5				5	5				5	

Range: 1 - 999

Field name: **TV system**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2	
13																						

Analogue TV system:

- |           |           |           |           |          |          |
|-----------|-----------|-----------|-----------|----------|----------|
| <b>B</b>  | System B  | <b>G</b>  | System G  | <b>K</b> | System K |
| <b>B1</b> | System B1 | <b>H</b>  | System H  | <b>L</b> | System L |
| <b>BI</b> | System BI | <b>I</b>  | System I  |          |          |
| <b>D</b>  | System D  | <b>I1</b> | System I1 |          |          |
| <b>D1</b> | System D1 |           |           |          |          |

Field name: **Test points 1**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2	
																		23	23			

- B** - country boundary test point to be used
- blank** - allotment boundary test points are to be entered

Field name: **Transmission mode**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2	
			14																			

- M** - mono
- S** - stereo

Field name: **Type of operation**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2	
																		4	4			

- T** Transmit only operation
- R** Receive only operation
- B** Both receive and transmit operations

Field name: **VisionOffset value**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2	
16																						

Range: **-500** to **+500**

Field name: **VisionOffset in Hz**

TVA1	TTA6	TTBx	FMA1	TFA1	TFBx	TVD1	TTD1	TTEx	AVD1	BTP1	CTP1	ALL1/ALL2	ASS1/ASS2	AAD1	BTP2	CTP2	TAD1	OS01	OS02	CBP1	CBP2	
18																						

Range: **-750000** to **+750000** Hz

## ANNEX 1 CHANNEL SPACING AND CHANNEL DISTRIBUTION FOR TELEVISION

### *Frequencies for implementation of DVB-T*

The frequency bands for implementation of DVB-T in the European Broadcasting Area are 47 to 68 MHz (VHF Band I), 174 to 230 MHz (VHF Band III) and 470 to 862 MHz (UHF Bands IV and V). However, the CEPT considers the frequency band 216 to 230 MHz as the core band for T-DAB in VHF.

### *Analogue television channel rasters*

In Bands I and III, different television channel rasters are used across Europe. In Eastern Europe, France and Ireland, channels are 8 MHz wide, in other countries the channel width is 7 MHz. In addition, there are different channel raster in countries using 7 MHz channels (e.g. Italy). This means that in the VHF Bands there is a number of cases where channels overlap.

Within Bands IV and V, there is a single channel raster of 8 MHz, with the upper and lower edges, and vision carrier, of each channel being the same for all countries in Europe.

### *Frequencies for television channels in the European Broadcasting Area*

Information concerning the frequencies for television channels in Bands III, IV and V, in the European Broadcasting Area are given in the tables below.

Note that following the CEPT T-DAB Planning Meeting (Wiesbaden 1995) the upper parts of Band III, mainly above 216 MHz, is now allocated to T-DAB services in many CEPT countries.

#### VHF System B

Channel	Channel boundaries MHz		Vision carrier MHz	Sound carrier MHz	Dual FM Second Sound carrier MHz	NICAM carrier MHz
2	47	54	48.25	53.75	53.99	54.1
2*	48.25	55.5	49.75	55.25	-	-
3	54	61	55.25	60.75	60.99	61.1
4	61	68	62.25	67.75	67.99	68.1
5	174	181	175.25	180.75	180.99	181.1
6	181	188	182.25	187.75	187.99	188.1
7	188	195	189.25	194.75	194.99	195.1
8	195	202	196.25	201.75	201.99	202.1
9	202	209	203.25	208.75	208.99	209.1
10	209	216	210.25	215.75	215.99	216.1
11	216	223	217.25	222.75	222.99	223.1
12	223	230	224.25	229.75	229.99	230.1

#### VHF System B (Italy)

Channel	Channel boundaries MHz		Vision carrier MHz	Sound carrier MHz	Dual FM Second Sound carrier MHz
A	52.50	59.50	53.75	59.25	59.49
B	61.00	68.00	62.25	67.75	67.99
C	81.00	88.00	82.25	87.75	87.99
D	174.00	181.00	175.25	180.75	180.99
E	182.50	189.50	183.75	189.25	188.49
F	191.00	198.00	192.25	197.75	197.99
G	200.00	207.00	201.25	206.75	206.99
H	209.00	216.00	210.25	215.75	215.99
H1	216.00	223.00	217.25	222.75	222.99
H2	223.00	230.00	224.25	229.75	229.99

## VHF System B (Morocco)

Channel	Channel boundaries MHz		Vision carrier MHz	Sound carrier MHz
M4	162	169	163.25	168.75
M5	170	177	171.25	176.75
M6	178	185	179.25	184.75
M7	186	193	187.25	192.75
M8	194	201	195.25	200.75
M9	202	209	203.25	208.75
M10	210	217	211.25	216.75
M11	216	223	217.25	222.75
M12	223	230	224.25	229.75

## VHF System B1

Channel	Channel boundaries MHz		Vision carrier MHz	Sound carrier MHz	Dual FM Second Sound carrier MHz	(NICAM carrier) MHz
R1	48.50	56.50	49.75	56.25	56.99	55.60
R2	58.00	66.00	59.25	65.75	65.99	65.10
R3	76.00	84.00	77.25	83.75	83.99	83.10
R4	84.00	92.00	85.25	91.75	91.99	91.10
R5	92.00	100.00	93.25	99.75	99.99	99.10
R6	174.00	182.00	175.25	180.75	180.99	181.10
R7	182.00	190.00	183.25	188.75	188.99	189.10
R8	190.00	198.00	191.25	196.75	196.99	197.10
R9	198.00	206.00	199.25	204.75	204.99	205.10
R10	206.00	214.00	207.25	212.75	212.99	213.10
R11	214.00	222.00	215.25	220.75	220.99	221.10
R12	222.00	230.00	223.25	228.75	228.99	229.10

## VHF System D and D1

Channel	Channel boundaries MHz		Vision carrier MHz	Sound carrier MHz	NICAM carrier MHz
R1	48.50	56.50	49.75	56.25	55.60
R2	58.00	66.00	59.25	65.75	65.10
R3	76.00	84.00	77.25	83.75	83.10
R4	84.00	92.00	85.25	91.75	91.10
R5	92.00	100.00	93.25	99.75	99.10
R6	174.00	182.00	175.25	181.75	181.10
R7	182.00	190.00	183.25	189.75	189.10
R8	190.00	198.00	191.25	197.75	197.10
R9	198.00	206.00	199.25	205.75	205.10
R10	206.00	214.00	207.25	213.75	213.10
R11	214.00	222.00	215.25	221.75	221.10
R12	222.00	230.00	223.25	229.75	229.10

## VHF System I

Channel	Channel boundaries MHz		Vision carrier MHz	Sound carrier MHz	NICAM carrier MHz
IA	44.50	52.50	45.75	51.75	52.30
IB	52.50	60.50	53.75	59.75	60.30
IC	60.50	68.50	61.75	67.75	68.30
ID	174.00	182.00	175.25	181.25	181.80
IE	182.00	190.00	183.25	189.25	189.80
IF	190.00	198.00	191.25	197.25	197.80
IG	198.00	206.00	199.25	205.25	205.80
IH	206.00	214.00	207.25	213.25	213.80
IJ	214.00	222.00	215.25	221.25	221.80
IK	222.00	230.00	223.25	229.25	229.80

## VHF System L

Channel	Channel boundaries MHz		Vision carrier MHz	Sound carrier MHz	NICAM carrier MHz
L2	49.00	57.00	55.75	49.25	49.90
L3	53.75	61.75	60.50	54.00	54.65
L4	57.00	65.00	63.75	57.25	57.90
L5	174.25	182.75	176.00	182.50	181.85
L6	182.75	190.75	184.00	190.50	189.85
L7	190.75	198.75	192.00	198.50	197.85
L8	198.75	206.75	200.00	206.50	205.85
L9	206.75	214.75	208.00	214.50	213.85
L10	214.75	222.75	216.00	222.50	221.85

## UHF System G, H, I, II K, L

Channel	Channel boundaries MHz		Vision carrier MHz	System G System H	System G Dual FM Second Sound carrier MHz	System G System H System L (System K) NICAM carrier MHz	System I Sound carrier MHz	System K System L Sound carrier MHz	System I NICAM carrier MHz
				Sound carrier MHz					
21	470	478	471.25	476.75	476.99	477.1	477.25	477.75	477.8
22	478	486	479.25	484.75	484.99	485.1	485.25	485.75	485.8
23	486	494	487.25	492.75	492.99	493.1	493.25	493.75	493.8
24	494	502	495.25	500.75	500.99	501.1	501.25	501.75	501.8
25	502	510	503.25	508.75	508.99	509.1	509.25	509.75	509.8
26	510	518	511.25	516.75	516.99	517.1	517.25	517.75	517.8
27	518	526	519.25	524.75	524.99	525.1	525.25	525.75	525.8
28	526	534	527.25	532.75	532.99	533.1	533.25	533.75	533.8
29	534	542	535.25	540.75	540.99	541.1	541.25	541.75	541.8
30	542	550	543.25	548.75	548.99	549.1	549.25	549.75	549.8
31	550	558	551.25	556.75	556.99	557.1	557.25	557.75	557.8
32	558	566	559.25	564.75	564.99	565.1	565.25	565.75	565.8
33	566	574	567.25	572.75	572.99	573.1	573.25	573.75	573.8
34	574	582	575.25	580.75	580.99	581.1	581.25	581.75	581.8
35	582	590	583.25	588.75	588.99	589.1	589.25	589.75	589.8
36	590	598	591.25	596.75	596.99	597.1	597.25	597.75	597.8
37	598	606	599.25	604.75	604.99	605.1	605.25	605.75	605.8
38	606	614	607.25	612.75	612.99	613.1	613.25	613.75	613.8
39	614	622	615.25	620.75	620.99	621.1	621.25	621.75	621.8
40	622	630	623.25	628.75	628.99	629.1	629.25	629.75	629.8
41	630	638	631.25	636.75	636.99	637.1	637.25	637.75	637.8
42	638	646	639.25	644.75	644.99	645.1	645.25	645.75	645.8
43	646	654	647.25	652.75	652.99	653.1	653.25	653.75	653.8
44	654	662	655.25	660.75	660.99	661.1	661.25	661.75	661.8
45	662	670	663.25	668.75	668.99	669.1	669.25	669.75	669.8
46	670	678	671.25	676.75	676.99	677.1	677.25	677.75	677.8
47	678	686	679.25	684.75	684.99	685.1	685.25	685.75	685.8
48	686	694	687.25	692.75	692.99	693.1	693.25	693.75	693.8
49	694	702	695.25	700.75	700.99	701.1	701.25	701.75	701.8
50	702	710	703.25	708.75	708.99	709.1	709.25	709.75	709.8
51	710	718	711.25	716.75	716.99	717.1	717.25	717.75	717.8
52	718	726	719.25	724.75	724.99	725.1	725.25	725.75	725.8
53	726	734	727.25	732.75	732.99	733.1	733.25	733.75	733.8
54	734	742	735.25	740.75	740.99	741.1	741.25	741.75	741.8

Channel	Channel boundaries		Vision carrier MHz	System G System H	System G	System G System H System L (System K) NICAM carrier	System I	System K System L	System I
	MHz			Sound carrier MHz	Dual FM Second Sound carrier MHz	NICAM carrier MHz	Sound carrier MHz	Sound carrier MHz	NICAM carrier MHz
55	742	750	743.25	748.75	748.99	749.1	749.25	749.75	749.8
56	750	758	751.25	756.75	756.99	757.1	757.25	757.75	757.8
57	758	766	759.25	764.75	764.99	765.1	765.25	765.75	765.8
58	766	774	767.25	772.75	772.99	773.1	773.25	773.75	773.8
59	774	782	775.25	780.75	780.99	781.1	781.25	781.75	781.8
60	782	790	783.25	788.75	788.99	789.1	789.25	789.75	789.8
61	790	798	791.25	796.75	796.99	797.1	797.25	797.75	797.8
62	798	806	799.25	804.75	804.99	805.1	805.25	805.75	805.8
63	806	814	807.25	812.75	812.99	813.1	813.25	813.75	813.8
64	814	822	815.25	820.75	820.99	821.1	821.25	821.75	821.8
65	822	830	823.25	828.75	828.99	829.1	829.25	829.75	829.8
66	830	838	831.25	836.75	836.99	837.1	837.25	837.75	837.8
67	838	846	839.25	844.75	844.99	845.1	845.25	845.75	845.8
68	846	854	847.25	852.75	852.99	853.1	853.25	853.75	853.8
69	854	862	855.25	860.75	860.99	861.1	861.25	861.75	861.8

#### Analogue television systems in use in Europe

System	Number of lines	Channel width (MHz)	Vision bandwidth (MHz)	Vision/Sound separation (MHz)	Vestigial side-band MHz	Vision modulation	1 <sup>st</sup> Sound modulation	2 <sup>nd</sup> Sound system	Vision/2 <sup>nd</sup> Sound sep. MHz
B	625	7	5	+5.5	0.75	C3F Negative	F3E (FM)	A2/NICAM	5.74/5.85
D	625	8	6	+6.5	0.75	C3F Negative	F3E (FM)	NICAM	5.85
G, B1	625	8	5	+5.5	0.75	C3F Negative	F3E (FM)	A2/NICAM	5.74/5.85
H	625	8	5	+5.5	1.25	C3F Negative	F3E (FM)	NICAM	5.85
I	625	8	5.5	+5.996	1.25	C3F Negative	F3E (FM)	NICAM	6.55
K	625	8	6	6.5	0.75	C3F Negative	F3E (FM)	NICAM	5.85
L	625	8	6	6.5	1.25	C3F Positive	A3E (AM)	NICAM	5.85

**ANNEX 2**  
**DAB FREQUENCY BLOCKS**

**VHF band**

<b>T-DAB block</b>	<b>Centre frequency (MHz)</b>	<b>Frequency range (MHz)</b>
2A	47.936	47.168 - 48.704
2B	49.648	48.880 - 50.416
2C	51.360	50.592 - 52.128
2D	53.072	52.304 - 53.840
3A	54.928	54.160 - 55.696
3B	56.640	55.872 - 57.408
3C	58.352	57.584 - 59.120
3D	60.064	59.296 - 60.832
4A	61.936	61.168 - 62.704
4B	63.648	62.880 - 64.416
4C	65.360	64.592 - 66.128
4D	67.072	66.304 - 67.840
5A	174.928	174.160 - 175.696
5B	176.640	175.872 - 177.408
5C	178.352	177.584 - 179.120
5D	180.064	179.296 - 180.832
6A	181.936	181.168 - 182.704
6B	183.648	182.880 - 184.416
6C	185.360	184.592 - 186.128
6D	187.072	186.304 - 187.840
7A	188.928	188.160 - 189.696
7B	190.640	189.872 - 191.408
7C	192.352	191.584 - 193.120
7D	194.064	193.296 - 194.832
8A	195.936	195.168 - 196.704
8B	197.648	196.880 - 198.416
8C	199.360	198.592 - 200.128
8D	201.072	200.304 - 201.840
9A	202.928	202.160 - 203.696
9B	204.640	203.872 - 205.408
9C	206.352	205.584 - 207.120
9D	208.064	207.296 - 208.832
10A	209.936	209.168 - 210.704
10B	211.648	210.880 - 212.416
10C	213.360	212.592 - 214.128
10D	215.072	214.304 - 215.840
11A	216.928	216.160 - 217.696
11B	218.640	217.872 - 219.408
11C	220.352	219.584 - 221.120
11D	222.064	221.296 - 222.832
12A	223.936	223.168 - 224.704
12B	225.648	224.880 - 226.416
12C	227.360	226.592 - 228.128
12D	229.072	228.304 - 229.840
13A	230.784	230.016 - 231.552
13B	232.496	231.728 - 233.264
13C	234.208	233.440 - 234.976
13D	235.776	235.008 - 236.544
13E	237.488	236.720 - 238.256
13F	239.200	238.432 - 239.968



## 1.5 GHz band

<b>T-DAB block</b>	<b>Centre frequency (MHz)</b>	<b>Frequency range (MHz)</b>
LA	1452.960	1452.192 - 1453.728
LB	1454.672	1453.904 - 1455.440
LC	1456.384	1455.616 - 1457.152
LD	1458.096	1457.328 - 1458.864
LE	1459.808	1459.040 - 1460.576
LF	1461.520	1460.752 - 1462.288
LG	1463.232	1462.464 - 1464.000
LH	1464.944	1464.176 - 1465.712
LI	1466.656	1465.888 - 1467.424
LJ	1468.368	1467.600 - 1469.136
LK	1470.080	1469.312 - 1470.848
LL	1471.792	1471.024 - 1472.560
LM	1473.504	1472.736 - 1474.272
LN	1475.216	1474.448 - 1475.984
LO	1476.928	1476.160 - 1477.696
LP	1478.640	1477.872 - 1479.408

<b>DAB block</b>	<b>Centre frequency (MHz)</b>	<b>Frequency range (MHz)</b>
LQ	1480.352	1479.584 - 1481.120
LR	1482.064	1481.296 - 1482.832
LS	1483.776	1483.008 - 1484.544
LT	1485.488	1484.720 - 1486.256
LU	1487.200	1486.432 - 1487.968
LV	1488.912	1488.144 - 1489.680
LW	1490.624	1489.856 - 1491.392

**ANNEX 3**  
**OTHER SERVICE TYPES<sup>1</sup>**

Service identifier <sup>2</sup>	Description of service
AA	Aeronautical safety service 0 (RSBN) in band III
AL	Aeronautical safety service 1 in band III
CA	CZE service. No information, CW interference data used in band III
DA	Aeronautical safety service 2 in band III
DB	Aeronautical safety service (Germany). The centre frequency is 235 MHz, the first channel is at 231 MHz.
F1	Civil fixed links, analogue (1.5 GHz). No information, CW interference data used
F2	Civil fixed links, analogue (1.5 GHz). No information, CW interference data used
F3	1.5 GHz digital point-to-multipoint telephone system (IRT 1500) as WFB
F4	Telemetry (1.5 GHz). No information, CW interference data used
FA	Civil fixed links, digital (1.5 GHz)
FM	Military fixed service
FB	1.5 GHz digital point-to-multipoint telephone system (IRT 1500)
GP	Studio transmitter link
GS	Studio transmitter link
H1	Military tactical distance measuring system (DME) Sweden (236 MHz). No information, CW interference data used
H2	Military tactical distance measuring system (DME) Sweden (241 MHz). No information, CW interference data used .
H3	Military tactical distance measuring system (DME) Sweden (238.5 MHz)
H4	Mobile Navy service in Sweden (233.1 MHz, 233.2 MHz, 233.3 MHz) transmit only
IA	Italian service. No information, CW interference data used (224.25 MHz)
IB	Italian service. No information, CW interference data used
IC	Italian service. No information, CW interference data used
ID	Italian service. No information, CW interference data used
LA	Medical telemetry
LB	Hearing aids
LC	Short range devices
M1	Mobile services – narrowband FM system (12.5 kHz). No information, CW interference data used
M2	Mobile services – narrowband FM system (12.5 kHz). No information, CW interference data used
MA	Land mobile service (173 – 174 MHz). No information, CW interference data used
MB	Military narrowband FM system, analogue (47 – 68 MHz). No information, CW interference data used
MC	Military narrowband FM system, digital (47 – 68 MHz). No information, CW interference data used
MD	Military narrowband FM system, frequency hopping (47 – 68 MHz). No information, CW interference data used
ME	Military air-ground-air system, analogue Minimum separation distance is 1 km. Frequency range is 230 to just above 240 MHz, but channel frequencies are not identical in all countries. No information, CW interference data used
MF	Military air-ground-air system, digital (230 – 243 MHz). No information, CW interference data used
MG	Military air-ground-air system, frequency hopping (230 – 243 MHz). No information, CW interference data used
MH	Mobile link
MI	Mobile Navy service, analogue (230 - 243 MHz). No information, CW interference data used
MJ	Mobile Navy service, digital (230 - 243 MHz). No information, CW interference data used

<sup>1</sup> The table above contains a list of other services which were considered in the Chester Agreement (1997) as well as in the context of T-DAB planning in band III and 1.5 GHz band. Compatibility criteria for other services vs. T-DAB can be found in Annex 2 to the Wiesbaden Special Arrangement 1995 as revised in Maastricht 2002 and in the Annex 2 to the Maastricht Special Arrangement 2002, whereas compatibility criteria for other services vs. DVB-T are given in Annex 5 of the Chester Agreement (1997).

<sup>2</sup> Service identifier is a two character code that uniquely identifies type of service. At Wiesbaden and Maastricht the three character service identifiers were used, i.e. character 'W' was added preceding the code given in the table above (Example: WAL at Wiesbaden is the same service as LA in the table).

Service identifier <sup>2</sup>	Description of service
MK	Mobile Navy service, frequency hopping (230 - 243 MHz). No information, CW interference data used
ML	Military fixed services (230 - 243 MHz). No information, CW interference data used
MM	Military tactical links (1.5 GHz). No information, CW interference data used
MN	Distress frequency 243 MHz. No information, CW interference data used
MQ	Military mobile service. Centre frequency 232.625 MHz
MR	Military mobile service. Centre frequency 242.5 MHz
MT	Military Mobile and Fixed (tactical) services. No information, CW interference data used
MU	Mobile radio - low power devices S2 data used
NO	UHF satellite, space to earth, above 240 MHz. No information, CW interference data used
NR	Radio microphones (companded)
NS	OB link (stereo non-companded)
NT	Talkback (non-companded)
PA	Paging - low power, local area (49 to 49.5 MHz). No information, CW interference data used
R1	Medical telemetry in Denmark (223 - 225 MHz). No interference to T-DAB (10 mW e.r.p.)
R3	Mobile service - remote control (223 - 225 MHz). No information, CW interference data used
R4	Mobile service - remote control (223 - 225 MHz). No information, CW interference data used
RA	Mobile services - narrowband FM system (12.5 kHz). No information, CW interference data used
S1	Wideband FM sound mono
S2	Wideband FM sound stereo
SB	Civil fixed links, analogue (1.5 GHz), 50 kHz bandwidth. No information, CW interference data used
SC	Civil fixed links, analogue (1.5 GHz), 250 kHz bandwidth. No information, CW interference data used
SD	Civil fixed links, analogue (1.5 GHz), 500 kHz bandwidth. No information, CW interference data used
T1	I/PAL (Band III)
T2	B/PAL (Band III)
T3	D/SECAM, K/SECAM (Band III)
T4	L/SECAM (Band III)
T5	B/SECAM (Band III). B/PAL (T2) data used
T6	D/PAL (Band III)
T7	B/PAL (FM+Nicam) (Band III)
TA	I/PAL (Band I)
TB	B/PAL (Band I)
TC	D/SECAM, K/SECAM (Band I)
TD	L/SECAM (Band I)
TE	B/SECAM (Band I). B/PAL (T2) data used
TF	D/PAL (Band I)
TG	B/PAL (FM+Nicam) (Band I)
XA	PMR (5 kHz channel spacing) in band III. No information, CW interference data used
XB	Finnish Alarm System, 230 to 231 MHz (Block 13A). No information, CW interference data used
XE	Military air-ground-air system based on aeronautical blocks. No information
XC	Radio Astronomy CH38
XG	CH36 Airport radars (UK)
XM	Radio microphones (VHF). S1 (WB FMmono) data used
XR	Russian aeronautical telemetry at 1.5 GHz, no information, AL data used
YA	Audio link (F)
YB	Video link(F) in band III
YC	Military air-ground-air system 1 (F), frequency hopping (230 - 243 MHz).
YD	Military air-ground-air system 2 (F), frequency hopping (230 - 243 MHz).
YE	Mobile Navy (aircraft) service (230 - 243 MHz). New type
YF	Military Mobile and Fixed (tactical) service. Tactical link (F)
YG	Safety and distress frequency 243 MHz. New type
YH	Audio link special in band III
YT	Military, telemetry as air-ground-air system 1 (F), frequency hopping (230 - 243 MHz). (as YC)

<b>Service identifier<sup>2</sup></b>	<b>Description of service</b>
YW	Military, telemetry as air-ground-air system 1(F), frequency hopping (230 - 243 MHz). (as YC)
YX	L/SECAM (SNCF)
YY	Short range system DGPT (F) in band III
YZ	B/PAL (DGPT, not used as TV)
ZA	Satellite sound broadcasting (1.5 GHz)