SLOVENSKI STANDARD
SIST EN 301 753 V1.2.1:2004

01-julij-2004

Fiksni radijski sistemi ï Veļ toļ kovna oprema in antene ï Sploġni harmonizirani standard za veļ toļ kovne digitalne fiksne radijske sisteme in antene, ki zajema bistvene zahteve ļ lena 3.2 direktive 1999-05-ES (R&TTE)

Fixed Radio Systems; Multipoint equipment and antennas; Generic harmonized standard for multipoint digital fixed radio systems and antennas covering the essential requirements under article 3.2 of the Directive 1999/5/EC

Ta slovenski standard je istoveten z: **EN 301 753 Version 1.2.1**

ICS:

33.060.30	Radiorelejni in fiksni satelitski komunikacijski sistemi	Radio relay and fixed satellite communications systems

SIST EN 301 753 V1.2.1:2004 **en**

ETSI EN 301 753 V1.2.1 (2003-12)

Candidate Harmonized European Standard (Telecommunications series)

Fixed Radio Systems; Multipoint equipment and antennas; Generic harmonized standard for multipoint digital fixed radio systems and antennas covering the essential requirements under article 3.2 of the Directive 1999/5/EC

Reference
REN/TM-04127

Keywords
access, DRRS, DFRS, FWA, multipoint, radio,
regulation, RLL, terminal

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

Individual copies of the present document can be downloaded from:
http://www.etsi.org

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at
http://portal.etsi.org/tb/status/status.asp

If you find errors in the present document, send your comment to:
editor@etsi.org

Copyright Notification

Contents

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (http://webapp.etsi.org/IPR/home.asp).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This Candidate Harmonized European Standard (Telecommunications series) has been produced by ETSI Technical Committee Transmission and Multiplexing (TM).

The present document has been produced by ETSI in response to a mandate from the European Commission issued under Council Directive 98/34/EC [2] (as amended) laying down a procedure for the provision of information in the field of technical standards and regulations.

The present document is intended to become a Harmonized Standard, the reference of which will be published in the Official Journal of the European Communities referencing the Directive 1999/5/EC [1] of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity ("the R&TTE Directive").

The previous V1.1.1 the present document has become a Harmonized Standard, the reference of which has been published in the Official Journal of the European Communities (OJEC) referencing the Directive 1999/5/EC [1] of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity ("the R&TTE Directive").

The present document intends to endorse, within the scope and applicability under the R&TTE Directive [1], some new product standards and revisions of existing product standards. These have been produced by TC-TM, following the market demand, after the publication in the OJEC of the V1.1.1 of the present document.

For systems already covered by V1.1.1 of the present document, only technically equivalent requirements have been introduced by V1.2.1. Therefore, from a technical point of view only, it is expected that equipment already conforming to V1.1.1, would not need re-assessment of the essential requirements for V1.2.1; however, legal implications on the actual declaration of conformity and equipment labelling are outside the scope of the present document.

In addition, justification has been introduced in order to support clarification of issues relating to antennas and receiver parameters, commonly shared in the Fixed Service community, in their application and relationship to R&TTE Directive [1] implementation. This is with the intention of preserving a common understanding of those issues, in the spirit of maintaining market competition on equitable level.

In the present document the references to antenna cross-polar discrimination have been deleted because it is not considered an essential requirement for multipoint systems.

NOTE: The date of cessation of presumption of conformity to R&TTE Directive [1] shall be two years after the date of publication in the OJEC of V1.2.1.

National transposition dates	
Date of adoption of this EN:	28 November 2003
Date of latest announcement of this EN (doa):	29 February 2004
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 August 2004
Date of withdrawal of any conflicting National Standard (dow):	28 February 2006

Introduction

Fixed Digital Radio Systems (FDRS), used in European countries, are presently referred to in a relatively large number of specific ETSI standards dealing with either point-to-point or multipoint systems.

For both types of systems the corresponding antennas are covered in separate standards.

FDRS cover very wide range of frequency bands, transport capacities, channel separations, modulation formats and access methods summarized in table 1:

Table 1: Coverage of fixed digital radio systems through ETSI standards

Parameter	Range/Type
Frequency bands	below 1 GHz to 58 GHz
Traffic capacities	from 9,6 kbit/s to 622 Mbit/s
Channel separations	from 25 kHz to 112 MHz
Modulation formats	from 2 to 512 states (amplitude and/or phase and/or frequency states)
Typical applications	**POINT-TO-POINT (P-P) CONNECTIONS:** long haul (trunk), rural and urban links applying low/medium and high capacity FDRS. **POINT-TO-MULTIPOINT (P-MP) AND/OR MULTIPOINT-TO-MULTIPOINT (MP-MP) CONNECTIONS:** rural or urban for narrow-band and /or wide-band links for fixed wireless access (FWA) and infrastructure support. **STAND ALONE ANTENNAS:** for all the above applications where integral antennas are not used.
Basic MultiPoint access method	DS-CDMA; FH-CDMA; FDMA, TDMA; MC-TDMA. A combination of the above may also be used.

In order to address different market and network requirements, with appropriate balance of cost/benefit, the ETSI standards summarized in table 2 offer a number of system types and antenna alternatives, for different network/market requirements.

Under the provision of R&TTE Directive [1] article 7.2, national regulatory bodies may restrict the putting into service of particular system and antenna alternatives summarized in table 2, e.g.:

- channel separation alternatives (as provided by the relevant CEPT Recommendation)
- spectral efficiency class alternatives (different complexity of modulation formats provided in radio equipment standards)
- antenna directivity class alternatives (for different network density requirement) for TS and/or RS
- antenna sectorization alternatives for CS

Therefore, it should be noted that national regulatory bodies may have notified "national interface specifications" under the provision of R&TTE Directive [1] Article 4.1.

The standards also contain other requirements that even if not considered essential for the R&TTE Directive [1], are nevertheless applicable to guarantee good performance and operability of FDRS.

This wide range of parameters has led to a large number of different ETS/ENs (presently the subject of EC Standardization Mandate M/284 [34]). Many of the standards are produced for similar systems but having different capacity and spectrum efficiency parameters for applications in the various radio frequency channel arrangements recommended by CEPT/ECC. It is also expected that other standards will be developed in the future to cover emerging technologies and/or new frequency bands.

From the point of view of essential requirements under the R&TTE Directive [1] all these systems are very similar in the "principles of parameters" but, besides few common horizontal parameters (e.g. spurious emissions), they differ in the "required numerical values".

Multipoint systems and their related equipment as defined by ETSI TC-TM TM4 follow the general system architecture shown in figure 1.

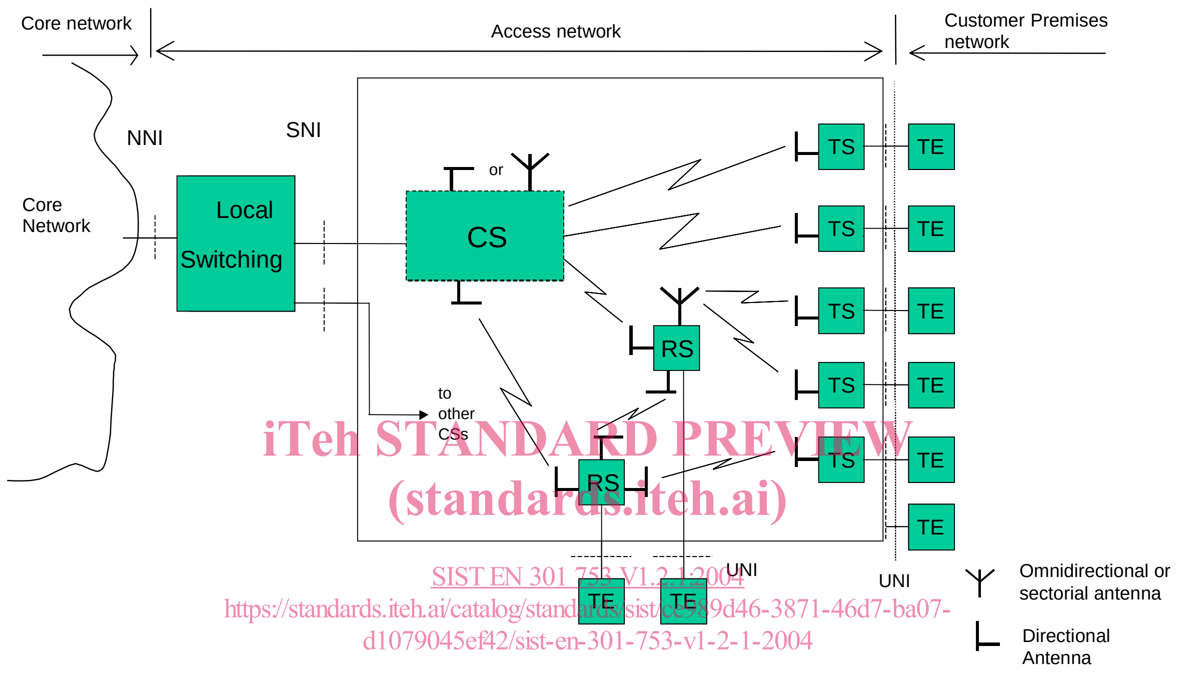

Figure 1: General system architecture

Where:

CS: The Central Station, which interfaces the network. It can be integrated or divided into two units:

i) the Central Controller Station (CCS) also called the exchange unit which is the interface to the local switch;

ii) the Central Radio Station (CRS) also called the radio unit which is the central base band / radio transceiver equipment. More than one CRS may be controlled by one CCS.

TS: The Terminal Station (outstations with subscriber interfaces). A TS may serve more than one Terminal Equipment (TE).

RS: The Repeater Station (radio repeater outstations with or without subscriber interfaces). An RS may serve one or more TS or be connected to another RS.

NNI: Network Node Interface

SNI: Service Node Interface (EG 202 306 [38])

UNI: User Network Interface (EG 202 306 [38])

TE: Terminal equipment

Figure 1 shows the most common and standardized approach for access network application; however when broadcast or private networks are concerned, different architectures are possible. For example the CS may be directly connected to the Core Network by means of a NNI interface and the switching functionality may be implemented within the CS (e.g. CS is an ATM switching into an ATM network) and, for private networks, the UNI interfaces may be substituted by custom interfaces.

Whenever an existing digital transmission link is available, the network implementation can be optimized by separating the CCS, installed at the network node site, and the CRS.

Figure 1 includes the system elements and interfaces for different types of Multipoint system (both P-MP and MP-MP). Not all system elements are necessarily deployed in any particular network.

The numbers of each type of station in a real deployment can vary considerably. Figure 1 shows only each possible type of station and each possible type of connection between stations that may occur. While in P-MP applications there are typically few CS and RS connecting large number of TS, in a typical MP-MP system, there are many RS stations and a smaller number of TS stations associated with each CS.

Although a single CS is possible, as shown, a typical system will deploy several CS, each with connection to the SNI of the local switching centre or directly to the NNI of the core network(s). These interconnections may be by means of radio links, optical fibre or other means.

The route from the SNI to the UNI interface may be via a single radio path (typical for P-MP systems) or via one or more radio repeaters (typical for MP-MP systems).

Subscriber to subscriber connections may also be provided in some networks, not routed via an external core network.

The present document for multipoint systems contains only the phenomena relevant to the essential requirements according to article 3.2 of the R&TTE Directive [1], giving the reference of the relevant clauses of the ETSI standards under the Mandate M/284 [34] which contain the actual numerical values. The relevant test methods for the declaration of conformity to the essential requirements (R&TTE Directive [1]) are described in the ENs 301 126-2-1 [26], 301 126-2-2 [27], 301 126-2-3 [28], 301 126-2-4 [29], 301 126-2-5 [30] and 301 126-2-6 [39] applicable for the different access methods of multipoint systems.

Where appropriate some horizontal requirements are directly reported.

The selection of the phenomena relevant to the essential requirements has been done on the base of the guidance given by EG 201 399 [35] and by the further specific analysis applied to FDRS given in TR 101 506 [36].

ETSI has designed a modular structure for the standards. Each standard is a module in the structure. The modular structure is shown in figure 2.

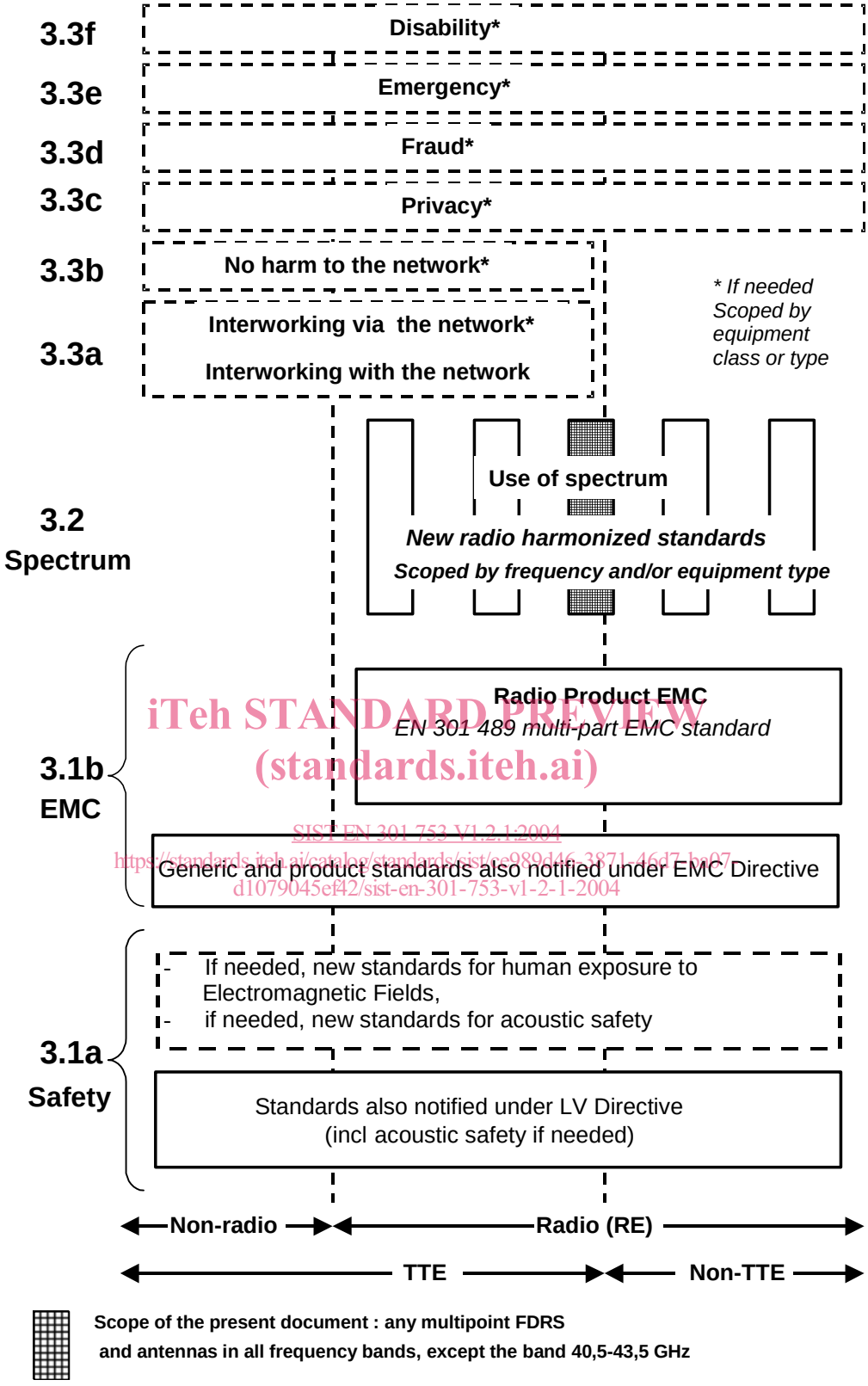

Figure 2: Modular structure for the various standards used under the R&TTE Directive

The left hand edge of the figure 2 shows the different clauses of Article 3 of the R&TTE Directive [1].

For article 3.3 various horizontal boxes are shown. Dotted lines indicate that at the time of publication of the present document essential requirements in these areas have to be adopted by the European Commission. If such essential requirements are adopted, and as far and as long as they are applicable, they will justify individual standards whose scope is likely to be specified by function or interface type.

The vertical boxes show the standards under article 3.2 for the use of the radio spectrum by radio equipment. The scopes of these standards are specified either by frequency (normally in the case where frequency bands are harmonized) or by radio equipment type.

For article 3.1b the diagram shows EN 301 489, the multi-part product EMC standard for radio used under the EMC Directive [40].

For article 3.1a the diagram shows the existing safety standards currently used under the LV Directive [41] and new standards covering human exposure to electromagnetic fields. New standards covering acoustic safety may also be required.

The bottom of figure 2 shows the relationship of the standards to radio equipment and telecommunications terminal equipment. A particular equipment may be radio equipment, telecommunications terminal equipment or both. A radio spectrum standard will apply if it is radio equipment. An article 3.3 standard will apply as well only if the relevant essential requirement under the R&TTE Directive [1] is adopted by the European Commission and if the equipment in question is covered by the scope of the corresponding standard. Thus, depending on the nature of the equipment, the essential requirements under the R&TTE Directive [1] may be covered in a set of standards.

The modularity principle has been taken because:

- it minimizes the number of standards needed. Because equipment may, in fact, have multiple interfaces and functions it is not practicable to produce a single standard for each possible combination of functions that may occur in an equipment;
- it provides scope for standards to be added:
  - under article 3.2 when new frequency bands are agreed; or
  - under article 3.3 should the European Commission take the necessary decisions without requiring alteration of standards that are already published;
- it clarifies, simplifies and promotes the usage of Harmonized Standards as the relevant means of conformity assessment.

1 Scope

The present document applies to the following FDRS types:

1) Multipoint FDRS intended for operation in frequency bands that require co-ordination; this includes both Point-to-MultiPoint and MultiPoint-to-MultiPoint FDRS;

2) Antennas for multipoint FDRS and antennas for point-to-point FDRS used at the terminal and/or repeater station of multipoint FDRS systems. These antennas may be either an integral part or may be used as a standalone part of the equipment (outdoor unit).
For point-to-multipoint equipment operating in the frequency range below 1 GHz the limits of the essential phenomena off-axis EIRP density, antenna gain and cross-polar discrimination as well as their test methods may be defined by the notified body according to the R&TTE Directive [1] due to lack of a Harmonized Standard.

The present document is intended to cover the provisions of Article 3.2 of the R&TTE Directive [1] which states that "….radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radiocommunications and orbital resources so as to avoid harmful interference".

In addition to the present document other ENs that specify technical requirements in respect of essential requirements under other parts of Article 3 of the R&TTE Directive [1] may apply to equipment within the scope of the present document.

NOTE 1: A list of such ENs is included on the ETSI web site (www.etsi.org).

Table 2 summarizes the ETSI standards applicable to multipoint FDRS referenced in Mandate M/284 [34] from which the essential requirements within this standard have been extracted.

Those ENs also contain other requirements that even if not considered essential for the R&TTE, are nevertheless applicable on the ETSI commonly understood voluntary base to guarantee network performance objectives, as defined by international standardizing bodies, and operability of FDRS.

NOTE 2: The third digit of the EN version number is not considered essential for dated reference purposes because the ETSI Technical Working Procedures reserve this digit for editorially changed versions thereby not affecting the essential requirements within that version.

Table 2: Applicability of the present document to the equipment in the scope of ETSI standards covered by Mandate M/284

Equipment standards				
ETSI Reference number	**Version**	**Title**	**Frequency range (GHz) of Fixed Service frequency bands (see note)**	**Channel separation (MHz)**
EN 300 631 [3]	V1.2.x	Fixed Radio Systems; Point-to-Point Antennas; Antennas for Point to point fixed radio systems in the 1 GHz to 3 GHz band.	1 to 3	NA
EN 300 636 [4]	V1.3.x	Fixed Radio Systems; Point-to-multipoint equipment; Time Division Multiple Access (TDMA); Point-to-multipoint digital radio systems in frequency bands in the range 1 GHz to 3 GHz	1 to 3	1,75 to 4
EN 300 833 [5]	V1.4.x	Fixed Radio Systems; Point-to-point Antennas; Antennas for point-to-point fixed radio systems operating in the frequency band 3 to 60 GHz	3 to 60	NA
EN 301 021 [6]	V1.6.x	Fixed Radio Systems; Point-to-multipoint equipment; Time Division Multiple Access (TDMA); Point-to-multipoint digital radio systems in frequency bands in the range 3 GHz to 11 GHz	3 to 11	< 1,75 to 30

Equipment standards				
ETSI Reference number	**Version**	**Title**	**Frequency range (GHz) of Fixed Service frequency bands (see note)**	**Channel separation (MHz)**
EN 301 055 [7]	V1.4.x	Fixed Radio Systems; Point-to-multipoint equipment; Direct Sequence Code Division Multiple Access (DS-CDMA); Point-to-multipoint digital radio systems in frequency bands in the range 1 GHz to 3 GHz	1 to 3	3,5 to 14
EN 301 080 [8]	V1.3.x	Fixed Radio Systems; Point-to-multipoint equipment; Frequency Division Multiple Access (FDMA); Point-to-multipoint digital radio systems in frequency bands in the range 3 GHz to 11 GHz	3 to 11	1 to 30
EN 301 124 [9]	V1.2.x	Fixed Radio Systems; Point-to-multipoint equipment; Direct Sequence Code Division Multiple Access (DS-CDMA) point-to-multipoint digital radio systems in frequency bands in the range 3 GHz to 11 GHz	3 to 11	5 to 20
EN 301 179 [10]	V1.2.x	Fixed Radio Systems; Point-to-multipoint equipment; Frequency Hopping Code Division Multiple Access (FH-CDMA); Point-to-multipoint Digital Radio Relay Systems (DRRS) in the bands within the range 1 GHz to 3 GHz	1 to 3	1 to 14
EN 301 213-1 [11]	V1.1.x	Fixed Radio Systems; Point-to-multipoint equipment; Point-to-multipoint digital radio systems in frequency bands in the range 24,25 GHz to 29,5 GHz using different access methods; Part 1: Basic parameters	24,5 to 29,5	3,5 to 112
EN 301 213-2 [12]	V1.3.x	Fixed Radio Systems; Point-to-multipoint equipment; Point-to-multipoint digital radio systems in frequency bands in the range 24,25 GHz to 29,5 GHz using different access methods; Part 2: Frequency Division Multiple Access (FDMA) methods	24,5 to 29,5	3,5 to 112
EN 301 213-3 [13]	V1.4.x	Fixed Radio Systems; Point-to-multipoint equipment; Point-to-multipoint digital radio systems in frequency bands in the range 24,25 GHz to 29,5 GHz using different access methods; Part 3: Time Division Multiple Access (TDMA) methods	24,5 to 29,5	3,5 to 112
EN 301 213-4 [42]	V1.1.x	Fixed Radio Systems; Point-to-multipoint equipment; Point-to-multipoint digital radio systems in frequency bands in the range 24,25 GHz to 29,5 GHz using different access methods; Part 4: Direct Sequence Code Division Multiple Access (DS-CDMA) methods	24,5 to 29,5	3,5 to 112
EN 301 213-5 [43]	V1.1.x	Fixed Radio Systems; Point-to-multipoint equipment; Point-to-multipoint digital radio systems in frequency bands in the range 24,25 GHz to 29,5 GHz using different access methods; Part 5: Multi-Carrier Time Division Multiple Access (MC-TDMA) methods	24,5 to 29,5	3,5 to 112
EN 301 215-1 [14]	V1.2.x	Fixed Radio Systems; Point to Multipoint Antennas; Antennas for point-to-multipoint fixed radio systems in the 11 GHz to 60 GHz band; Part 1: General aspects	11 to 60	NA
EN 301 215-2 [15]	V1.3.x	Fixed Radio Systems; Point-to-Multipoint Antennas; Antennas for point-to-multipoint fixed radio systems in the 11 GHz to 60 GHz band; Part 2: 24 GHz to 30 GHz	24 to 30	NA

Equipment standards				
ETSI Reference number	**Version**	**Title**	**Frequency range (GHz) of Fixed Service frequency bands (see note)**	**Channel separation (MHz)**
EN 301 215-4 [46]	V1.1.x	Fixed Radio Systems; Point to Multipoint Antennas; Antennas for multipoint fixed radio systems in the 11 GHz to 60 GHz band; Part 4: 30 GHz to 40,5 GHz	30 to 40,5	NA
EN 301 253 [16]	V1.2.x	Fixed Radio Systems; Point-to-multipoint equipment; Frequency Hopping Code Division Multiple Access (FH-CDMA); Point-to-multipoint digital radio systems in frequency bands in the range 3 GHz to 11 GHz	3 to 11	1 to 14
EN 301 373 [17]	V1.2.x	Fixed Radio Systems; Point-to-multipoint equipment; Frequency Division Multiple Access (FDMA); Point-to-multipoint digital radio systems in frequency bands in the range 1 GHz to 3 GHz	1 to 3	0,5 to 14
EN 301 460-1 [18]	V1.1.x	Fixed Radio Systems; Point-to-multipoint equipment; Part 1: Point-to-multipoint digital radio systems below 1 GHz - Common parameters	< 1	to be agreed on national basis
EN 301 460-2 [19]	V1.1.x	Fixed Radio Systems; Point-to-multipoint equipment; Part 2: Point-to-multipoint digital radio systems below 1 GHz - Additional parameters for TDMA systems	< 1	to be agreed on national basis
EN 301 460-3 [20]	V1.1.x	Fixed Radio Systems; Point-to-multipoint equipment; Part 3: Point-to-multipoint digital radio systems below 1 GHz - Additional parameters for FH-CDMA systems	< 1	to be agreed on national basis
EN 301 460-4 [21]	V1.1.x	Fixed Radio Systems; Point-to-multipoint equipment; Part 4: Point-to-multipoint digital radio systems below 1 GHz - Additional parameters for FDMA systems	< 1	to be agreed on national basis
EN 301 460-5 [22]	V1.1.x	Fixed Radio Systems; Point-to-multipoint equipment; Part 5: Point-to-multipoint digital radio systems below 1 GHz - Additional Parameters for DS-CDMA Systems	< 1	to be agreed on national basis
EN 301 525 [23]	V1.1.x	Fixed Radio Systems; Point-to-Multipoint Antennas; Antennas for Point-to-Multipoint fixed radio systems in the 1 GHz to 3 GHz band	1 to 3	NA
EN 301 744 [24]	V1.2.x	Fixed Radio Systems; Point-to-multipoint equipment; Direct Sequence Code Division/Time Division Multiple Access (DS-CD/TDMA); Point-to-multipoint digital packet radio systems in frequency bands in the range 3 GHz to 11 GHz	3 to 11	24
EN 302 085 [25]	V1.1.x	Fixed Radio Systems; Point-to-Multipoint Antennas; Antennas for point-to-multipoint fixed radio systems in the 3 GHz to 11 GHz band	3 to 11	NA
EN 302 063 [44]	V1.1.x	Fixed Radio Systems; Multipoint equipment; Multipoint digital radio systems operating in the 31,0 GHz to 33,4 GHz (32 GHz) frequency range	31,0 to 33,4	3,5 to 112

Equipment standards				
ETSI Reference number	**Version**	**Title**	**Frequency range (GHz) of Fixed Service frequency bands (see note)**	**Channel separation (MHz)**
EN 302 078 [45]	V1.1.x	Fixed Radio Systems; Multipoint Antennas; Circularly polarized antennas for multipoint fixed radio systems in the 1 GHz to 11 GHz band	1 to 11	NA
Test methods for spurious emissions and receiver immunity standards that are relevant for the test and definition of essential requirements				
ETSI Reference number	**Version**	**Title**		
EN 301 126-2-1 [26]	V1.1.x	Fixed Radio Systems; Conformance testing; Part 2-1: Point-to-Multipoint equipment; Definitions and general requirements		
EN 301 126-2-2 [27]	V1.1.x	Fixed Radio Systems; Conformance testing; Part 2-2: Point-to-Multipoint equipment; Test procedures for FDMA systems		
EN 301 126-2-3 [28]	V1.1.x	Fixed Radio Systems; Conformance testing; Part 2-3: Point-to-Multipoint equipment; Test procedures for TDMA systems		
EN 301 126-2-4 [29]	V1.1.x	Fixed Radio Systems; Conformance testing; Part 2-4; Point-to-Multipoint equipment; Test procedures for FH-CDMA systems		
EN 301 126-2-5 [30]	V1.1.x	Fixed Radio Systems; Conformance testing; Part 2-5: Point-to-Multipoint equipment; Test procedures for DS-CDMA systems		
EN 301 126-2-6 [39]	V1.1.x	Fixed Radio Systems; Conformance testing; Part 2-6: Point-to-Multipoint equipment; Test procedures for Multi Carrier Time Division Multiple Access (MC-TDMA) systems		
EN 301 126-3-1 [31]	V1.1.x	Fixed Radio Systems; Conformance testing; Part 3-1: Point-to-Point antennas; Definitions, general requirements and test procedures		
EN 301 126-3-2 [32]	V1.2.x	Fixed Radio Systems; Conformance testing; Part 3-2: Point-to-Multipoint antennas; Definitions, general requirements and test procedures		
EN 301 390 [33]	V1.1.x	Fixed Radio Systems; Point-to-point and Point-to-Multipoint Systems; Spurious emissions and receiver immunity at equipment/antenna port of Digital Fixed Radio Systems		
NOTE: The frequency ranges stated are those for which the relevant EN is applicable. The exact frequency bands of operation for the multipoint FDRS are detailed in the ENs. The identification of those frequency bands of operation is taken from the approximate centre frequency as commonly used in Fixed Service ITU-R F series Recommendations. The ENs may give provision for national frequency bands of operation that may slightly differ from each other but are commonly referred to by the same term.				

The provisions of the present document are valid for all multipoint FDRS and related antennas identified in the scope of the relevant ETSI standards summarized in table 2.

The present document is considered applicable to FDRS products with integral antennas for which all the technical requirements included in the present document apply. It also applies to FDRS equipment without integral antennas and to separate FDRS antenna products to which only the relevant technical requirements apply, and which would be therefore subject to separate declarations of conformity to the essential requirements of the R&TTE Directive [1].

In particular, it has to be noted that TCAM, while recognizing the "essentiality" of antenna directional requirements for some applications, including the Fixed Service, has deliberated that there should be no obligation for separate declaration of conformity for stand alone antennas and that the conformity to the relevant essential requirements should be the responsibility of the final system integrator.