

Report on the implications of the R&TTE Directive; Part 2: Existing radio (not EMC) product standards



Reference

DSR/OCG-00002-2

Keywords

radio, regulation

ETSI

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Foreword

This Special Report (SR) has been produced by the Advisory Committee Operational Co-ordination Group (OCG).

1 Introduction

1.1 Scope

The present document gives guidance on the implications of the R&TTE Directive [1] on the existing radio (not EMC) equipment product standards produced voluntarily by the Technical Bodies of ETSI. It lists all Radio Equipment standards that have been identified and indicates where consolidation of the essential requirements could take place in standards intended to become harmonized under the R&TTE Directive [1].

The equipment types covered by these standards were not within the scope of the Codified Directive [2] but do come within the scope of the R&TTE Directive [1].

Under the R&TTE Directive [1] there is no requirement for type approval regimes. However standards harmonized under the R&TTE Directive [1] will be available for use by equipment suppliers as a reference for presumption of conformity with its essential requirements.

A proforma for the production of harmonized standards within ETSI has been produced and is available as SR 001 470 [3].

An exhaustive list of current technical phenomena under Article 3.2 of the R&TTE Directive [1] which may be included in such a harmonized standard is taken from the ETSI Guide [4] and is given in Annex A.

However for any particular candidate harmonized standard technical phenomena should only be considered as essential if there is a possibility of harmful interference that is unlikely to be controlled by other means.

For each candidate harmonized standard a list of technical phenomena derived from the exhaustive list given in Annex A is proposed for evaluation by the responsible technical body.

Those marine radio product standards listed in the ME Directive [5] are indicated.

1.2 Modular structure

Harmonized standards under the new R&TTE Directive [1] will be produced by ETSI to fit into a modular structure covering all radio and telecommunications terminal equipment. Each standard is a module in the structure which is shown in figure 1.

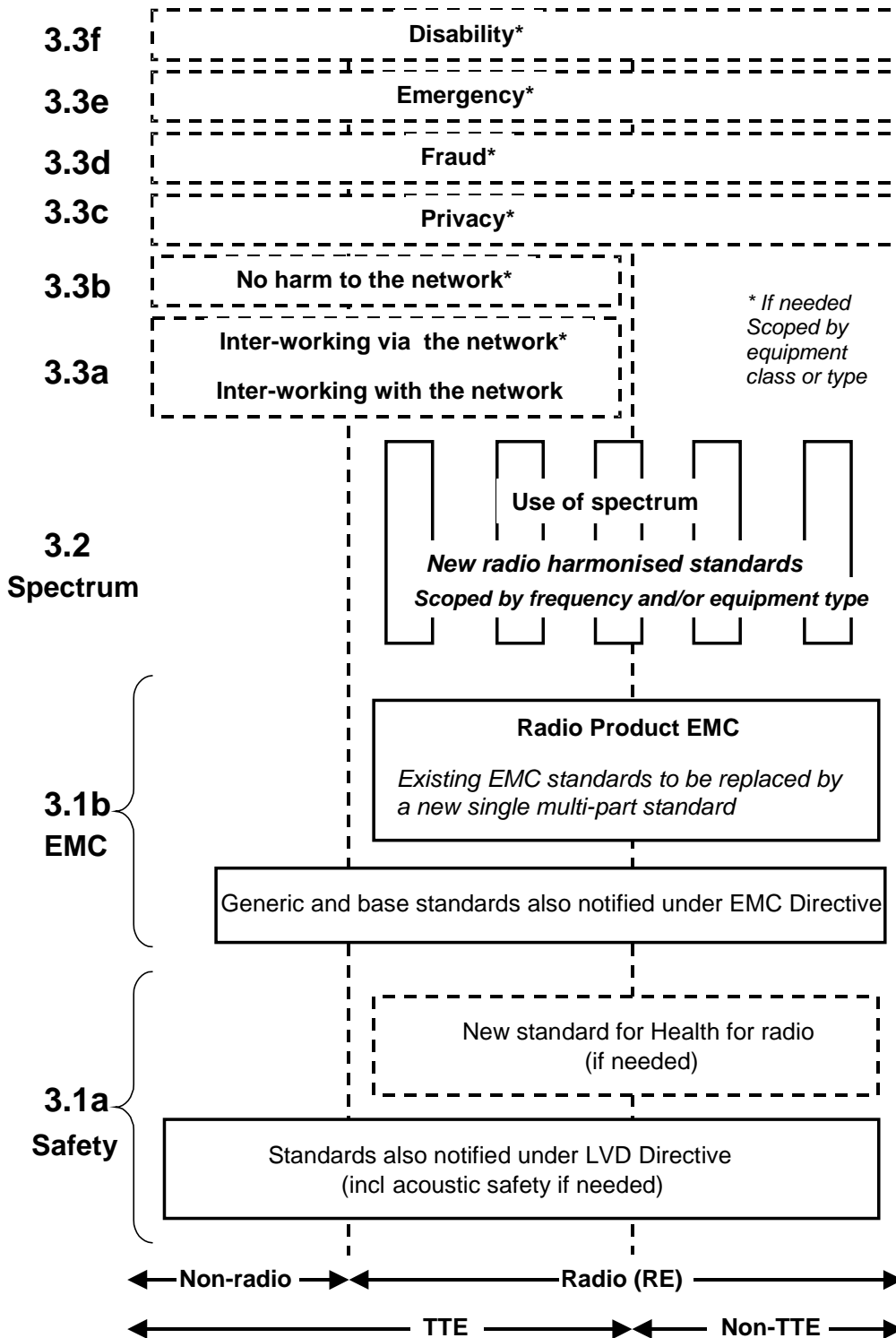


Figure 1: Modular structure for the various standards used under the R&TTE Directive

The left hand edge of the figure shows the different subclauses of Article 3 of the Directive.

For article 3.3 various horizontal boxes are shown. Their dotted lines indicate that no essential requirements in these areas have yet been adopted by the Commission. If such essential requirements are adopted, they will be elaborated in 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. 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 3.1(b), the diagram shows the new single multi-part product EMC standard for radio, and the existing collection of generic and base standards currently used under the EMC Directive [6]. The parts of this new standard will become available in the second half of 2000, and the existing separate EMC standards will be used until it is available.

For article 3.1(a) the diagram shows the existing safety standards currently used under the LVD Directive [7] and the possibility of a new standard on health relating to radio emissions

The bottom of the figure 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.

The modular approach has been taken because:

- it minimizes the number of standards needed. Because equipment may 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 Commission take the necessary decisions, without requiring alteration of standards that are already published.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

- [1] Directive 1999/05/EC of the European Parliament and of the Council of 9 March 1999 on radio and telecommunications terminal equipment and the mutual recognition of their conformity (R&TTE Directive).
- [2] Directive 98/13/EC of the European Parliament and of the Council of 12 February 1998 relating to telecommunications terminal equipment and satellite earth station equipment, including the mutual recognition of their conformity (Codified Directive).
- [3] SR 001 470: "Guidance to the production of candidate Harmonized Standards for application under the R&TTE Directive (1999/5/EC); Pro-forma candidate Harmonized Standard".
- [4] EG 201 399: "A Guide to the production of Harmonized Standards for application under the R&TTE Directive".
- [5] Commission Directive 98/85/EC of 11 November 1998 amending Council Directive 96/98/EC on marine equipment (ME Directive).

- [6] Council Directive of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility (89/336/EEC) (EMC Directive).
- [7] Council Directive of 19 February 1973 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (73/23/EEC) (LVD Directive).
- [8] International Telecommunications Union Radio Regulations, Edition of 1998
- [9] Annex to EC Mandate/284.
- [10] SR 001 478-1: "Report on the implications of the R&TTE Directive; Part 1: Existing TBRs".
- [11] SR 001 478-3: "Report on the implications of the R&TTE Directive; Part 3: Existing EMC product standards".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply.

interference: as defined in S1.166 of the International Telecommunications Union Radio Regulations, Edition of 1998 [8] "the effect of unwanted energy due to one or a combination of emissions, radiations or inductions upon reception in a radio-communications system, manifested by any performance degradation, misinterpretation or loss of information which could be extracted in the absence of such unwanted energy"

radio equipment: as defined in R&TTE Directive [1], Article 2(c), subject to general exclusions in the scope and aim of the Directive, Article 1

telecommunications terminal equipment: as defined in R&TTE Directive [1], Article 2(b), subject to general exclusions in the scope and aim of the Directive, Article 1

Other applicable definitions as defined in R&TTE Directive [1] are included in subclause 4.8.

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

3GPP	3 rd Generation Partnership Project
BRAN	Broadband Radio Access Networks
CTR	Common Technical Regulation
DECT	Digit Enhanced Cordless Telecommunications
EBU	European Broadcasting Union
EC	European Commission
EEC	European Economic Community
EMC	ElectroMagnetic Compatibility
EN	European Standard
EP	ETSI Project
ERM	Electromagnetic compatibility and Radio spectrum Matters
ETS	European Telecommunication Standard
IF	Intermediate Frequency
JTC	Joint Technical Committee
R&TTE	Radio and Telecommunications Terminal Equipment
RE	Radio Equipment
SES	Satellite Earth stations and Systems
SMG	Special Mobile Group
TB	Technical Body
TBR	Technical Basis for Regulation

TC	Technical Committee
TETRA	Terrestrial Trunked Radio
TM	Transmission and Multiplex
TTE	Telecommunications Terminal Equipment

4 Statements in R&TTE Directive relevant to radio standards

4.1 Whereas (1)

"Whereas the radio equipment and telecommunications terminal equipment sector is an essential part of the telecommunications market, which is a key element of the economy of the Community; whereas the directives applicable to the telecommunications terminal equipment sector are no longer capable of accommodating the expected changes in the sector caused by new technology, market developments and network legislation;"

4.2 Whereas (5)

"Whereas that Directive does not cover a substantial proportion of the radio equipment market;"

4.3 Whereas (7)

"Whereas the broad scope of this Directive requires new definitions of the expressions "radio equipment" and "telecommunications terminal equipment"; whereas a regulatory regime aimed at the development of a single market for radio equipment and telecommunications terminal equipment should permit investment, manufacture and sale to take place at the pace of technology and market developments;"

4.4 Whereas (21)

"Whereas unacceptable degradation of service to persons other than the user of radio equipment and telecommunications terminal equipment should be prevented; whereas manufacturers of terminals should construct equipment in a way which prevents networks from suffering harm which results in such degradation when used under normal operating conditions; whereas network operators should construct their networks in a way that does not oblige manufacturers of terminal equipment to take disproportionate measures to prevent networks from being harmed; whereas the European Telecommunications Standards Institute (ETSI) should take due account of this objective when developing standards concerning access to public networks;"

4.5 Whereas (22)

"Whereas effective use of the radio spectrum should be ensured so as to avoid harmful interference; whereas the most efficient possible use, according to the state of the art, of limited resources such as the radio frequency spectrum should be encouraged;"

4.6 Whereas (46)

"Whereas this Directive replaces Directive 98/13/EC, which should accordingly be repealed; whereas Directives 73/23/EEC and 89/336/EEC will no longer apply to apparatus within the scope of this Directive, with the exception of protection and safety requirements and certain conformity assessment procedures,"

4.7 Article 2 (extracts)

- (a) "apparatus" means any equipment that is either radio equipment or telecommunications terminal equipment or both;

- (c) "radio equipment" means a product, or relevant component thereof, capable of communication by means of the emission and/or reception of radio waves utilizing the spectrum allocated to terrestrial/space radiocommunication;
- (d) "radio waves" means electromagnetic waves of frequencies from 9 kHz to 3 000 GHz, propagated in space without artificial guide;
- (h) "harmonized standard" means a technical specification adopted by a recognized standards body under a mandate from the Commission in conformity with the procedures laid down in Directive 98/34/EC for the purpose of establishing a European requirement, compliance with which is not compulsory.
- (i) "harmful interference" means interference which endangers the functioning of a radionavigation service or of other safety services or which otherwise seriously degrades, obstructs or repeatedly interrupts a radiocommunications service operating in accordance with the applicable Community or national regulations."

4.8 Article 3.2

"In addition, (to other essential requirements) radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communication and orbital resources so as to avoid harmful interference."

4.9 Article 8.3

"Where the apparatus is subject to other directives which concern other aspects and also provide for the affixing of the CE marking, the latter shall indicate that such apparatus also fulfils the provisions of those other directives. However, should one or more of those directives allow the manufacturer, during a transitional period, to choose which arrangements to apply, the CE marking shall indicate that the apparatus fulfils the provisions only of those directives applied by the manufacturer. In this case, the particulars of those directives, as published in the *Official Journal of the European Communities*, must be given in the documents, notices or instructions required by those directives and accompanying such products."

4.10 Article 10.1

"The conformity assessment procedures identified in this Article shall be used to demonstrate the compliance of the apparatus with all the relevant essential requirements identified in Article 3."

4.11 Article 18.1

"Standards under Directive 73/23/EEC or 89/336/EEC whose references have been published in the *Official Journal of the European Communities* may be used as the basis for a presumption of conformity with the essential requirements referred to in Article 3.1(a) and Article 3.1(b). Common technical regulations under Directive 98/13/EC whose references have been published in the *Official Journal of the European Communities* may be used as the basis for a presumption of conformity with the other relevant essential requirements referred to in Article 3. The Commission shall publish a list of references to those standards in the *Official Journal of the European Communities* immediately after this Directive enters into force."

4.12 Article 18.2

"Member States shall not impede the placing on the market and putting into service of apparatus which is in accordance with the provisions in Directive 98/13/EC or rules in force in their territory and was placed on the market for the first time before this Directive entered into force or at the latest two years after this Directive entered into force."

4.13 Article 19.1

"Member States shall not later than 7 April 2000 adopt and publish the laws, regulations and administrative provisions necessary to comply with this Directive. They shall forthwith inform the Commission thereof. They shall apply these provisions as from 8 April 2000."

4.14 Article 20.1

"1. Directive 98/13/EC is hereby repealed as from 8 April 2000."

4.15 Annex III (extract)

"For each type of apparatus, all essential radio test suites must be carried out by the manufacturer or on his behalf. The identification of the test suite that are considered to be essential is the responsibility of a notified body chosen by the manufacturer except where the test suites are defined in the harmonized standards."

5 Preliminary assessment

5.1 General

The present document reports on the implications of the R&TTE Directive [1] on radio standards. At the time of writing this report, the Commission have not published any decision to apply any of the requirements in Article 3.3 and therefore this report relates to standards covering Article 3.2 requirements only. If the EC decides that additional essential requirements covered by Article 3.3 are required then additional harmonized standards may be needed to cover these requirements.

Unless stated otherwise the entry "(Harmonized)" in the Document column of any table indicates either that the ETS/EN has been partly harmonized, usually together with its associated EMC standard, under the EMC Directive [6], or, that the TBR has been harmonized by the publication of a CTR announcement in the *Official Journal of the European Communities* which remains valid. Harmonization under the R&TTE Directive [1], if required, will have to be obtained by publication of the appropriate information in the *Official Journal of the European Communities*.

5.2 Existing radio equipment

5.2.1 Existing deliverables

Tables 1 to 13 list those deliverables that have been investigated as bases for candidate harmonized standards under the R&TTE Directive [1]. The tables include those deliverables for radio equipment listed in Annex to EC Mandate/284 [9] and associated TBRs. Within the tables the combinations suggested refer to a minimum combining of the technical phenomena of existing deliverables, that are considered essential under Article 3.2 of the R&TTE Directive [1], into a single candidate harmonized standard. These combinations of equipments, which are of a similar nature based on the technical phenomena listed in EG 201 399 [4], are further elaborated in clause 6.

In the Document column the reference "(98/85/EC)" indicates that the ETSI standard is quoted in the Marine Equipment Directive [5] as an alternative test standard for that equipment.

5.2.1.1 TC/ERM RP01

5.2.1.1.1 Existing

Table 1: RE deliverables of TC/ERM RP01

Work Item	Document	Abbreviated Title	Comments
NOTE 1: Maritime equipment is subject to the Marine Equipment Directive (98/85/EC [5]). Equipment not subject to the 1974 SOLAS Convention is subject to the R&TTE Directive [1].			
DE/RES-1006	ETS 300 065 (Harmonized) (98/85/EC)	Narrow-band direct-printing telegraph equipment for receiving meteorological or navigational information (NAVTEX)	
DE/RES-01001	ETS 300 067 (98/85/EC)	Radiotelex equipment operating in the maritime MF/HF service	
REN/ERM-RP01-029	ETS 300 152	Maritime Emergency Position Indicating Radio Beacons (EPIRBs) intended for use on the frequency 121,5 MHz, or the frequencies 121,5 MHz and 243 MHz for homing purposes only	
RE/RES-01-10	ETS 300 066 (98/85/EC)	Float-free maritime satellite Emergency Position Indicating Radio Beacons (EPIRBs) operating on 406,025 MHz	
DE/RES-01009	ETS 300 372 (98/85/EC)	Maritime float-free satellite Emergency Position Indicating Radio Beacon (EPIRB) operating in the 1,6 GHz band through geostationary satellites	
RE/ERM-RP01-032	ETS 300 225 (98/85/EC)	Survival craft portable VHF radiotelephone apparatus	Note 2
DE/RES-01-05	EN 300 338 (98/85/EC)	Equipment for generation, transmission and reception of Digital Selective Calling (DSC) in the maritime MF, MF/HF and/or VHF mobile service	Note 2
DEN/ERM-RP01-019	EN 301 025	VHF radiotelephone equipment for general communications and associated equipment for Class "D" Digital Selective Calling (DSC)	Note 2
DE/RES-01014	ETS 300 698	Radio telephone transmitters and receivers for the maritime mobile service operating in the VHF bands used on inland waterways	Note 2
RE/ERM-RP01-022	ETS 300 162 (Harmonized) (98/85/EC)	Radiotelephone transmitters and receivers for the maritime mobile service operating in VHF bands; Technical characteristics and methods of measurement	Note 2
DEN/ERM-RP01-012	EN 301 178	Portable Very High Frequency (VHF) radiotelephone equipment for the maritime mobile service operating in the VHF bands (for non-GMDSS applications only)	Note 2
DE/RES-01-03	ETS 300 373 (98/85/EC)	Maritime mobile transmitters and receivers for use in the MF and HF bands	
DE/RES-01011	ETS 300 720	UHF on-board communications systems and equipment	
DTS/ERM-RP01030	TS 101 089 (98/85/EC)	Maritime Very High Frequency (VHF) distress radio equipment operating on aeronautical frequencies	

Work Item	Document	Abbreviated Title	Comments
DE/RES-01-07	ETS 300 441 (Harmonized) (98/85/EC)	Maritime radiotelephone watch receivers for the distress and calling frequency 2 182 kHz	Special Case for reception of emergency signals
DEN/ERM-RP01-017	EN 301 033 (98/85/EC)	Shipborne watchkeeping receivers for reception of Digital Selective Calling (DSC) in the maritime MF, MF/HF and VHF bands	Special Case for reception of emergency signals
NOTE 2: The technical phenomena of ETS 300 225, EN 300 338, EN 301 025, ETS 300 698, ETS 300 162 and EN 301 178 could be combined into one standard but in view of the ME Directive [5], the requirements of the SOLAS Convention and Article 8.3 of the R&TTE Directive [1] a draft scope and technical phenomena for the combination are not proposed.			

5.2.1.2 TC/ERM RP02

5.2.1.2.1 Existing

Table 2: RE deliverables of TC/ERM RP02

Work Item	Document	Abbreviated Title	Comments
REN/ERM-RP02-19	I-ETS 300 219 (Replaced by EN 300 219)	Land mobile service; radio equipment transmitting signals to initiate a specific response in the receiver	Combination A, see note 1
DE/RES-02-03	ETS 300 341 (Harmonized)	Land mobile service; radio equipment using an integral antenna transmitting signals to initiate a specific response in the receiver	Combination A, see note 1
DEN/ERM-RP02-033	EN 301 166 (Harmonized)	Land mobile service; radio equipment for analogue and/or digital communication (speech and/or data) and operating on narrowband channels and having an antenna connector	Combination A, see note 1
DE/RES-02002	ETS 300 086 (Harmonized)	Land mobile service; radio equipment with an internal or external RF connector intended primarily for analogue speech	Combination A, see note 1
RE/RES-02-12	ETS 300 113 (Harmonized)	Land mobile service; radio equipment intended for the transmission of data (and speech) and having an antenna connector	Combination A, see note 1
DE/RES-02-07	ETS 300 296 (Harmonized)	Land mobile service; radio equipment using integral antennas intended primarily for analogue speech	Combination A, see note 1
DE/RES-02-04	ETS 300 390 (Harmonized)	Land mobile service; radio equipment intended for the transmission of data (and speech) and using an integral antenna	Combination A, see note 1
RE/RES-02-09	ETS 300 328 (Harmonized)	Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques	
DE/RES-02-14	ETS 300 471	Land mobile service; access protocol, occupation rules and corresponding technical characteristics of radio equipment for the transmission of data on shared channels	
DEN/ERM-RP02-024	EN 300 793	Land mobile service; Presentation of equipment for type testing	No Requirements
DEN/ERM-RP02-034	EN 301 391	Data communications using short range devices; Access protocol, occupation rules and corresponding technical characteristics for the transmission of data	
DE/RES-02-BA	ETS 300 135 (Harmonized)	Angle-modulated Citizens' Band radio equipment (CEPT PR 27 Radio Equipment)	Combination B, see note 2
DE/RES-00005	ETS 300 433 (Harmonized)	Double Side Band (DSB) and/or Single Side Band (SSB) amplitude modulated Citizens' Band (CB) radio equipment	Combination B, see note 2
NOTE 1: The technical phenomena of ETS 300 086, ETS 300 113, ETS 300 296, ETS 300 390, EN 301 166, EN 300 219 and ETS 300 341 could be combined into one standard.			
NOTE 2: The technical phenomena of ETS 300 135 and ETS 300 433 could be combined into one standard.			

5.2.1.2.2 Combinations

The suggested possible combinations identified within table 2 are shown in subclause 6.2.1.

5.2.1.3 TC/ERM RP04

5.2.1.3.1 Existing

Table 3: RE deliverables of TC/ERM RP04

Work Item	Document	Abbreviated Title	Comments
RE/ERM-RP04-007-6	ETS 300 133-6	Enhanced Radio Message System (ERMES); Base station conformance specification	Combination A, see note Additional to ETS 300 113
RE/ERM-RP04-013	ETS 300 224 (Harmonized)	On-site paging service; Technical and functional characteristics for on-site paging systems	Combination A, see note
DE/RES-04005-2	ETS 300 719-1 (Harmonized)	Private wide area paging service; Functional characteristics and access protocol for private wide-area paging systems on shared channels	Combination A, see note
NOTE: The technical phenomena of ETS 300 133-6, ETS 300 224 and ETS 300 719-1 could be combined into one standard.			

5.2.1.3.2 Combinations

The suggested possible combination identified within table 3 are shown in subclause 6.2.2.

5.2.1.4 TC/ERM RP05

5.2.1.4.1 Existing

Table 4: RE deliverables of TC/ERM RP05

Work Item	Document	Abbreviated Title	Comments
DTBR/ERM-RP05-002	TBR 23	Terrestrial Flight Telecommunications System (TFTS); Technical requirements for TFTS	Combination A, see note
RE/ERM-RP05-005-2	ETS 300 326-2	Terrestrial Flight Telecommunications System (TFTS); Part 2: Speech services, radio interface	Combination A, see note
DI/RES-05-01/4	ETS 300 789	Terrestrial Flight Telecommunications System (TFTS); Avionic Termination Radio Testing Specification	
DE/RES-00007	ETS 300 676	Radio transmitters and receivers at aeronautical stations of the aeronautical mobile service operating in the VHF band (118 MHz - 137 MHz) using amplitude modulation and 8,33 kHz channel spacing	
NOTE: The technical phenomena of TBR 23 and ETS 300 326-2 could be combined into one standard.			

5.2.1.4.2 Combinations

The combination of TBR 23 and ETS 300 326-2 results are shown in the TBR report [10].

5.2.1.5 TC/ERM RP08

5.2.1.5.1 Existing

Table 5: RE deliverables of TC/ERM RP08

Work Item	Document	Abbreviated Title	Comments
DE/RES-08-0304	ETS 300 454 (Harmonized)	Wide band audio links	
DE/RES-080402	ETS 300 761	Automatic Vehicle Identification (AVI) for railways	
DE/RES-08-0501	ETS 300 718	Avalanche Beacons; Transmitter-receiver systems	Transmitter requirements and Special Case for emergency signals for receiver
REN/ERM-RP08-0107-1	EN 300 220-1 (Harmonized)	Short range devices; radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW; Parameters intended for regulatory purposes	Combination A, see note 1
REN/ERM-RP08-0107-2	EN 300 220-2	Short range devices; radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW; Supplementary parameters not intended for regulatory purposes	No Requirements
REN/ERM-RP08-0108	EN 300 330 (Harmonized)	Short Range Devices (SRD); radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9 kHz to 30 MHz	Combination A, see note 1
REN/ERM-RP08-0109	EN 300 440 (Harmonized)	Short range devices; radio equipment to be used in the 1 GHz to 40 GHz frequency range	Combination A, see note 1
REN/ERM-RP08-0306	EN 300 422	Wireless microphones in the 25 MHz to 3 GHz frequency range	
DEN/ERM-RP08-0307	EN 301 357	Analogue cordless wideband audio devices using integral antennas operating in the CEPT recommended 863 MHz to 865 MHz frequency range	
DES/ERM-RP08-0105A	ES 200 674-1	Road Transport and Traffic Telematics (RTTT); High Data Rate (HDR) data transmission equipment operating in the 5,8 GHz Industrial, Scientific and Medical (ISM) band	Co-ordinate with CEN EN 300 674 applies
DES/ERM-RP08-0105-B	ES 200 674-2	Road Transport and Traffic Telematics (RTTT); Low Data Rate (LDR) data transmission equipment operating in the 5,8 GHz Industrial, Scientific and Medical (ISM) band	Co-ordinate with CEN EN 300 674 applies

Work Item	Document	Abbreviated Title	Comments
DEN/ERM-RP08-0105	EN 300 674 (Harmonized)	Road Transport and Traffic Telematics (RTTT); Dedicated Short Range Communication (DSRC) transmission equipment (500 kbit/s / 250 kbit/s) operating in the 5,8 GHz Industrial, Scientific and Medical (ISM) band	Co-ordinate with CEN ES 200 674-1 ES 200 674-2 apply
DEN/ERM-RP08-0401	EN 301 091 (Harmonized)	Road Transport and Traffic Telematics (RTTT); radar equipment operating in the 76 GHz to 77 GHz band	
DI/RES-00002	I-ETS 300 235	Radio aspects of cordless telephones CT1	Combination B, see note 2
RI/RES-03015	I-ETS 300 131	Common air interface; interworking between cordless telephone apparatus in the frequency band 864,1 MHz to 868,1 MHz, including public access services	Combination B, see note 2
NOTE 1: The technical phenomena of EN 300 220-1, EN 300 330 and EN 300 440 could be combined into one standard.			
NOTE 2: The technical phenomena of I-ETS 300 131 (CT2) and I-ETS 300 235 (CT1) could be combined into one standard.			

5.2.1.5.2 Combinations

The suggested possible combinations identified within table 5 are shown in subclause 6.2.3.

5.2.1.6 TC/ERM EMC

5.2.1.6.1 Existing

Table 6: RE deliverables of TC/ERM EMC

Work Item	Document	Abbreviated Title	Comments
DE/RES-09016	ETS 300 684	ElectroMagnetic Compatibility (EMC) standard for commercially available amateur radio equipment	No requirement

The only reason for this ETS being included in this report is that it is listed in Annex to EC Mandate/284 [9] as a radio standard. For further information see the EMC report [10].

5.2.1.7 TC/TM TM4

5.2.1.7.1 Existing

Table 7: RE deliverables assigned to TC/TM TM4

Work Item	Document	Abbreviated Title	Comments
RE/TM-04053	EN 300 197 (Harmonized)	Parameters for radio relay systems for the transmission of digital signals and analogue video signals operating at 38 GHz.	Combination A, see note 1
REN/TM-04082	EN 300 198 (Harmonized)	Parameters for radio relay systems for the transmission of digital signals and analogue video signals operating at 23 GHz	Combination A, see note 1
REN/TM-04061	EN 300 234	High capacity digital radio-relay systems carrying 1 x STM-1 signals and operating in frequency bands with about 30 MHz channel spacing and alternated arrangements	Combination B, see note 2
DE/TM-04006	ETS 300 407	Parameters for Digital Radio Relay Systems (DRRS) for the transmission of digital signals and analogue video signals operating around 55 GHz	Combination A, see note 1
DE/TM-04007 (REN/TM-04072)	ETS 300 408 (To be harmonized)	Parameters for radio-relay systems for the transmission of digital signals and analogue video signals operating at around 58 GHz, which do not require coordinated frequency planning	Combination A, see note 1
DEN/TM-04011	EN 300 430	High capacity digital radio-relay systems carrying 1 x Synchronous Transport Module-level 1 (1 x STM-1) signals operating in the 18 GHz frequency band with channel spacing of 55 MHz.	Combination B, see note 2
DE/TM-04013 (REN/TM-04076)	ETS 300 431 (To be harmonized)	Low capacity point-to-point Digital Radio Relay Systems (DRRS) operating in the 1,4 GHz frequency band	Combination C, see note 3
DE/TM-04014 (REN/TM-04063-06)	ETS 300 630 (To be harmonized)	Low capacity point-to-point Digital Radio Relay Systems (DRRS) operating in the 1,4 GHz frequency band	Combination C, see note 3
DE/TM-04015 (REN/TM-04063-07)	ETS 300 636 (To be harmonized)	Time Division Multiple Access (TDMA) point-to-multipoint digital radio systems in the frequency range 1 to 3 GHz	Combination D, see note 4
DE/TM-04016 (REN/TM-04063-08)	ETS 300 639 (To be harmonized)	Sub-STM1 Digital Radio Relay Systems (DRRS) operating in the 13 GHz, 15 GHz and 18 GHz frequency bands with about 28 MHz co-polar and 14 MHz cross-polar channel spacing	Combination B, see note 2
DEN/TM-04083	EN 300 631-1	Radio relay equipment; Antennas for point-to-point and point-to-multipoint radio links in bands 1 to 3 GHz.	Combination E, see note 5
DEN/TM-04060	EN 300 631-2	Digital Radio Relay Systems (DRRS); Part 2: Antennas for Point-to-Multipoint (P-MP) radio links in the 1 GHz to 3 GHz band	Combination E, see note 5

Work Item	Document	Abbreviated Title	Comments
REN/TM-04062	EN 301 021	Digital Radio Relay Systems (DRRS); Time Division Multiple Access (TDMA); Point-to-multipoint radio systems in the Frequency Division Duplex (FDD) bands in the range 3 GHz to 11 GHz	Combination D, see note 4
DE/TM-04022	ETS 300 638	Digital Radio Relay Systems (DRRS); Fixed point-to-point radio link equipment for the transmission of digital signals and analogue video signal operating in the frequency bands 10 GHz and 14 GHz with 20 MHz alternate channel spacing.	Combination A, see note 1
DE/TM-04025	ETS 300 632	Fixed radio link equipment for the transmission of analogue video signals operating in the frequency range 24,25 GHz to 29,50 GHz	Combination A, see note 1
DEN/TM-04026	EN 301 126-1/-2/-3	Fixed Radio Systems; Conformance testing	No requirement
DE/TM-04028	ETS 300 635	Synchronous Digital Hierarchy (SDH); Radio specific functional blocks for transmission of Mx STM-N	No requirement
DE/TM-04029	ETS 300 785	Synchronous Digital Hierarchy (SDH); Radio specific functional blocks for transmission of M x sub-STM-1	No requirement
DEN/TM-04031 (REN/TM-04063-13)	EN 301 055 (To be harmonized)	Digital Radio Relay Systems (DRRS); Direct Sequence Code Division Multiple Access (DS-CDMA) point-to-multipoint DRRS in frequency bands in the range 1 GHz to 3 GHz	Combination F, see note 6
DE/TM-04033	ETS 300 786	Digital Radio Relay Systems (DRRS); Sub-STM-1 DRRS operating in the 13 GHz, 15 GHz and 18 GHz frequency bands with about 14 MHz co-polar channel spacing	Combination B, see note 2
DE/TM-04034 (REN/TM-04063-16)	ETS 300 633 (To be harmonized)	Digital Radio Relay Systems (DRRS); Low and medium capacity point-to-point DRRS operating in the frequency range 2,1 to 2,6 GHz	Combination C, see note 3
DE/TM-04036	ETS 300 833	Fixed Radio Systems; Point to point antennas; Antennas for point-to-point fixed radio systems operating in the frequency band 3 GHz to 60 GHz	Combination E, see note 5
DEN/TM-04037	EN 301 129	Digital Radio Relay Systems (DRRS); Synchronous Digital Hierarchy (SDH); System performance monitoring parameters of SDH DRRS	No requirement
DEN/TM-04039	EN 301 128	Digital Radio Relay Systems (DRRS); Plesiochronous Digital Hierarchy (PDH); Low and medium capacity DRRS operating in the 13 GHz, 15 GHz and 18 GHz frequency bands	Combination G, see note 7
DEN/TM-04041	EN 301 277	Digital Radio Relay Systems (DRRS); High capacity DRRS transmitting STM-4 or 4 x STM-1 in a 40 MHz radio frequency channel using Co-Channel Dual Polarized (CCDP) operation	Combination B, see note 2

Work Item	Document	Abbreviated Title	Comments
DEN/TM-04042	EN 301 124	Digital Radio Relay Systems (DRRS); Direct Sequence Code Division Multiple Access (DS-CDMA) point-to-multipoint DRRS in frequency bands in the range 3 GHz to 11 GHz	Combination F, see note 6
DEN/TM-04044	EN 301 216	Digital Radio Relay Systems (DRRS); Plesiochronous Digital Hierarchy (PDH); Low and medium capacity and STM-0 DRRS operating in the frequency bands in the range 3 GHz to 11 GHz	Combination G, see note 7
DEN/TM-04045	EN 301 373	Digital Radio Relay Systems (DRRS); Frequency Division Multiple Access (FDMA); Point-to-multipoint DRRS in frequency bands in the range 1 GHz to 3 GHz	Combination H, see note 8
DEN/TM-04046	EN 301 080	Digital Radio Relay Systems (DRRS); Frequency Division Multiple Access (FDMA); Point-to-multipoint DRRS in the bands allocated to the fixed service in the range from 3 GHz to 11 GHz	Combination H, see note 8
DEN/TM-04047	EN 301 387	Digital Radio Relay Systems (DRRS); Plesiochronous Digital Hierarchy (PDH); Low and medium capacity DRRS operating in the frequency band 48,5 GHz to 51,4 GHz	Combination G, see note 7
DEN/TM-04049	EN 302 085	Point-to-multipoint antennas; Antennas for point-to-multipoint fixed radio systems in the 3 GHz to 11 GHz band	Combination E, see note 5
DEN/TM-04050-1	EN 301 213-1	Digital Radio Relay Systems (DRRS); Point-to-multipoint DRRS in frequency bands in the range 24,25 GHz to 29,5 GHz using different access methods; Part 1: Basic parameters	
DEN/TM-04050-2	EN 301 213-2	Digital Radio Relay Systems (DRRS); Point-to-multipoint DRRS 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	Combination H, see note 8
DEN/TM-04050-3	EN 301 213-3	Digital Radio Relay Systems (DRRS); Point-to-multipoint DRRS 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	Combination D, see note 4
DE/TM-04057-1	EN 301 215-1	Digital Radio Relay Systems (DRRS); Antennas for use in point-to-multipoint DRRS in the 11 GHz to 60 GHz band; Part 1: General aspects	Combination E, see note 5
DE/TM-04057-2	EN 301 215-2	Digital Radio Relay Systems (DRRS); Antennas for use in point-to-multipoint DRRS; in the 11 GHz to 60 GHz band; Part 2: 24 GHz to 30 GHz	Combination E, see note 5

Work Item	Document	Abbreviated Title	Comments
DEN/TM-04058	EN 301 179	Digital Radio Relay Systems (DRRS); Frequency Hopping Code Division Multiple Access (FH-CDMA); Point-to-multipoint DRRS in the bands within the range 1 GHz to 3 GHz	Combination F, see note 6
DEN/TM-04059	EN 301 253	Digital Radio Relay Systems (DRRS); Frequency Hopping Code Division Multiple Access (FH-CDMA) point-to-multipoint systems in frequency bands in the range 3 GHz to 11 GHz	Combination F, see note 6
DEN/TM-04065	EN 301 669	Digital Radio Relay Systems (DRRS); High capacity DRRS carrying STM-4 in two 40 MHz channels or 2 x STM-1 in a 40 MHz channel with alternate channel arrangement	Combination B, see note 2
<p>NOTE 1: The technical phenomena of EN 300 197, EN 300 198, ETS 300 407, ETS 300 408, ETS 300 632 and ETS 300 638 could be combined into one standard.</p> <p>NOTE 2: The technical phenomena of EN 300 234, EN 300 430, ETS 300 639, ETS 300 786, EN 301 277 and EN 301 669 could be combined into one standard.</p> <p>NOTE 3: The technical phenomena of ETS 300 431, ETS 300 630 and ETS 300 633 could be combined into one standard.</p> <p>NOTE 4: The technical phenomena of ETS 300 636, EN 301 021 and EN 301 213-3 could be combined into one standard.</p> <p>NOTE 5: The technical phenomena of EN 300 631-1/-2, EN 301 215-1/-2, EN 302 085 and ETS 300 833 could be combined into one standard.</p> <p>NOTE 6: The technical phenomena of EN 301 055, EN 301 124, EN 301 179 and EN 301 253 could be combined into one standard.</p> <p>NOTE 7: The technical phenomena of EN 301 128, EN 301 216 and EN 301 387 could be combined into one standard.</p> <p>NOTE 8: The technical phenomena of EN 301 080, EN 301 373 and EN 301 213-2 could be combined into one standard.</p>			

5.2.1.7.2 Combinations

The suggested possible combinations identified within table 7 are shown in subclause 6.2.4.

5.2.1.8 ETSI/EBU JTC

5.2.1.8.1 Existing

Table 8: RE deliverables assigned to ETSI/EBU JTC

Work Item	Document	Abbreviated Title	Comments
DE/JTC-VHFTX	ETS 300 384 (Harmonized)	Very High Frequency (VHF), frequency modulated, sound broadcasting transmitters	Combination A, see note
DE/JTC-00VHFTXHU	ETS 300 750	Very High Frequency (VHF), frequency modulated, sound broadcasting transmitters in the 66 to 73 MHz band	Combination A, see note
RE/JTC-00DAB-4	ETS 300 401	Digital Audio Broadcasting (DAB) to mobile, portable and fixed receivers	No requirements
DE/JTC-DVB-6	ETS 300 421	Framing structure, channel coding and modulation for 11/12 GHz satellite services (DVB-S)	No requirements
DE/JTC-DVB-7	ETS 300 429	Framing structure, channel coding and modulation for cable systems (DVB-C)	No requirements
DE/JTC-DVB-8	ETS 300 744	Framing structure, channel coding and modulation for digital Terrestrial television (DVB-T)	No Requirements
NOTE: The technical phenomena of ETS 300 384 and ETS 300 750 could be combined into one standard.			

5.2.1.8.2 Combinations

The suggested possible combination identified within table 8 is shown in subclause 6.2.5.

5.2.1.9 EP SMG

5.2.1.9.1 Existing

Table 9: RE deliverables assigned to EP SMG

Work Item	Document	Abbreviated Title	Comments
RI/SMG-081121PR6	I-ETS 300 609-1 (Note 1) (Superseded by EN 301 087)	Base Station System (BSS) equipment specification; Radio aspects (GSM 11.21 version 4.13.0)	Combination A, see note 2
REN/SMG-081121QR1	EN 301 087 (Note 1)	Base Station System (BSS) equipment specification; Radio aspects (GSM 11.21 version 5.4.1)	Combination A, see note 2
RE/SMG-081126PQ	ETS 300 609-4 (Note 1)	Cellular telecommunications system (Phase 2 and Phase 2+); Base Station System (BSS) equipment specification; Part 4: Repeaters (GSM 11.26 version 5.0.2)	Combination A, see note 2
RE/SMG-071110PR5-1	ETS 300 607-1 (Note 1)	Mobile Station (MS) conformance specification; Part 1: Conformance specification (GSM 11.10-1 version 4.22.0)	Combination B, see note 3
DTS/SMG-071110Q-1	TS 100 607-1 (Note 1)	Mobile Station (MS) conformance specification; Part 1: Conformance specification (GSM 11.10-1)	Combination B, see note 3
RE/SMG-020505PR8	ETS 300 577 (Note 1)	Radio transmission and reception (GSM 05.05)	Combination B, see note 3
RI/SMG-071110	I-ETS 300 020-3 (Note 1)	Mobile station conformance test system Part 3: DCS 1 800 mobile station conformity specification (GSM 11.10-DCS)	Combination B, see note 3
RE/SMG-020505QR8	ETS 300 910 (Note 1)	Radio transmission and reception (GSM 05.05)	Combination B, see note 3
TS/SMG-020505QR1	GSM 05.05 (Note 1)	Radio transmission and reception (GSM 05.05)	Combination B, see note 3
RTBR/SMG-0719R3	TBR 19 (Harmonized) (Note 1)	Attachment requirements for Global System for Mobile communications (GSM) mobile stations; Access	Combination B, see note 3
RTBR/SMG-0731TTCNR1	TBR 31 (Harmonized) (Note 1)	Attachment requirements for mobile stations in the DCS 1 800 band and additional GSM 900 band; Access	Combination B, see note 3
NOTE 1: In Annex to EC Mandate/284 [9] the note in the table of Cellular Radio Telephony standards indicates that the GSM standards are harmonized. The TBRs although "Harmonized" do not include any specifications but refer out to other nonharmonized ETS/ENs.			
NOTE 2: The technical phenomena of ETS 300 609-4, EN 301 087 and GSM 11.20 could be combined into one standard.			
NOTE 3: The technical phenomena of ETS 300 607-1, TS 100 607-1, TS 101 431, TBR 19, TBR 31, ETS 300 577, ETS 300 910, GSM 05.05, GSM 11.10 and I-ETS 300 020-3 could be combined into one standard.			

5.2.1.9.2 Combinations

- a) The combination of I-ETS 300 609-1, I-ETS 300 609-4, EN 301 087 and GSM 11.20 is shown in subclause 6.2.6.
- b) The combination of ETS 300 607-1, TS 100 607-1, TBR 19, TBR 31, ETS 300 577, ETS 300 910, GSM 05.05, GSM 11.10, and I-ETS 300 020-3 result is shown in the TBR report [10].

5.2.1.10 EP TETRA

5.2.1.10.1 Existing

Table 10: RE deliverables assigned to EP TETRA

Work Item	Document	Abbreviated Title	Comments
DTBR/TETRA-02016	TBR 35	TETRA; Emergency access	Combination A, see notes
DEN/TETRA-02028-1	EN 301 435-1	TETRA; Emergency access	In preparation Combination A, see note
DEN/TETRA-02028-2	EN 301 435-2	TETRA; Civilian access	In preparation Combination A, see notes
NOTE 1: The technical phenomena of TBR 35, EN 301 435-1 and EN 301 435-2, could be combined into one standard.			
NOTE 2: EP/TETRA consider that the technical phenomena (under Article 5(e) of the Codified Directive [2]) and tests in the following standards should also be considered for inclusion in this single harmonized standard: ETS 300 392-2, ETS 300 392-7, ETS 300 394-1, the subparts of ETS 300 394-2, ETS 300 394-4, ETS 300 394-5, ETS 300 395-4 ETS 300 396-2, ETS 300 396-3, ETS 300 396-4, ETS 300 396-5, ETS 300 396-6, ETS 300 396-7 and ETS 300 396-10.			

5.2.1.10.2 Combinations

The combination of TBR 35, EN 301 435-1, EN 301 435-2, ETS 300 392-2 and ETS 300 394-1 result is given in the TBR report [10]. Note 2 of table 10 is also pertinent in this respect.

5.2.1.11 EP BRAN

5.2.1.11.1 Existing

Table 11: RE deliverables assigned to EP BRAN

Work Item	Document	Abbreviated Title	Comments
REN/BRAN-10-01	EN 300 652	High Performance Radio Local Area Network (HIPERLAN) Type 1; Functional specification	Combination A, see note
DE/BRAN-10-02D	ETS 300 836-1 (Harmonized)	High Performance Radio Local Area Network (HIPERLAN) Type 1; Conformance testing specification; Part 1: Radio type approval and Radio Frequency (RF) conformance test specification	Combination A, see note
DE/BRAN-10-02A	ETS 300 836-2 (Harmonized)	High Performance Radio Local Area Network (HIPERLAN) Type 1; Conformance testing specification; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification	Combination A, see note
	ETS 300 386-3 (Harmonized)	High Performance Radio Local Area Network (HIPERLAN) Type 1; Conformance testing specification; Part 3: Test Suite Structure and Test Purposes (TSS&TP) specification	Combination A, see note
	ETS 300 836-4 (Harmonized)	High Performance Radio Local Area Network (HIPERLAN) Type 1; Conformance testing specification; Part 4: Abstract Test Suite (ATS) specification	Combination A, see note
NOTE: The technical phenomena of ETS 300 836 -1/4 and EN 300 652 could be combined into one standard.			

5.2.1.11.2 Combinations

The suggested possible combinations identified within table 11 are shown in subclause 6.2.7.

5.2.1.12 EP DECT

5.2.1.12.1 Existing

Table 12: RE deliverables assigned to EP DECT

Work Item	Document	Abbreviated Title	Comments
DTBR/RES-03-09	TBR 6 (Harmonized)	Digital European Cordless Telecommunications (DECT) General terminal attachment requirements	Combination A, see note
RE/RES-03027-2	ETS 300 175-2	Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 2: Physical layer (PHL)	Combination A, see note
DE/DECT-050075-1	ETS 300 765-1	Radio in the Local Loop (RLL) Access Profile (RAP); Part 1: Basic telephony services	Under review REN/DECT-050112 No Requirements
DEN/DECT-010060	EN 301 439	Global System for Mobile communications (GSM); Attachment requirements for DECT/GSM dual-mode terminal equipment	
NOTE: The technical phenomena of TBR 6 and ETS 300 175-2 could be combined into one standard.			

5.2.1.12.2 Combinations

The combination of ETS 300 176-1, ETS 300 175-2 and TBR 6 results are given in the TBR report [10].

5.2.1.13 TC/SES

5.2.1.13.1 Existing

Table 13: RE deliverables assigned to TC/SES

Work Item	Document	Abbreviated Title	Comments
DE/SES-05006	ETS 300 487 (Harmonized)	Receive-Only Mobile Earth Stations (ROMESs) operating in the 1,5 GHz band providing data communications; Radio Frequency (RF) specifications	No Requirements
DTBR/SES-00004	TBR 26 (Harmonized)	Low data rate Land Mobile satellite Earth Stations (LMES) operating in the 1,5/1,6 GHz frequency bands	Under review DEN/SES-00043 EN 301 426
DTBR/SES-00005	TBR 27 (Harmonized)	Low data rate Land Mobile satellite Earth Stations (LMES) operating in the 11/12/14 GHz frequency bands	Being replaced by EN 301 427
DTBR/SES-00006	TBR 28 (Harmonized)	Very Small Aperture Terminal (VSAT); Transmit-only, transmit/receive or receive-only satellite earth stations operating in the 11/12/14 GHz frequency bands	Being replaced by EN 301 428
DTBR/SES-00008	TBR 30 (Harmonized)	Satellite News Gathering Transportable Earth Stations (SNG TES) operating in the 11-12/13-14 GHz frequency bands	Being replaced by EN 301 430
DTBR/SES-00017	TBR 41 (Harmonized)	Mobile Earth Stations (MESs), including handheld earth stations, for S-PCN in the 1,6/2,4 GHz bands under the Mobile Satellite Service (MSS); Terminal essential requirements	Being replaced by EN 301 441
DTBR/SES-00018	TBR 42 (Harmonized)	Mobile Earth Stations (MESs), including handheld earth stations, for S-PCN in the 2,0 GHz bands under the Mobile Satellite Service (MSS); Terminal essential requirements	Being replaced by EN 301 442
DTBR/SES-00021	TBR 43 (Harmonized)	Very Small Aperture Terminal (VSAT) transmit-only, transmit-and-receive, receive-only satellite earth stations operating in the 4 GHz and 6 GHz frequency bands	Being replaced by EN 301 443
DTBR/SES-00022	TBR 44 (Harmonized)	Land Mobile Earth Stations (LMES) operating in the 1,5 GHz and 1,6 GHz bands providing voice and/or data communications	Being replaced by EN 301 444
DE/SES-05011	ETS 300 460 (Harmonized) (98/85/EC)	Maritime Mobile Earth Stations (MMESs) operating in the 1,5/1,6 GHz bands providing Low Bit Rate Data Communications (LBRDCs) for the Global Maritime Distress and Safety System (GMDSS); Technical characteristics and methods of measurement	
DE/SES-05003	ETS 300 740	Maritime Mobile Earth Stations (MMES) operating in the 1,5/1,6 GHz bands providing Low Bit Rate Data Communications (LBRDC) in the Maritime Mobile Satellite Service (MMSS), not intended for distress and safety communications	

Work Item	Document	Abbreviated Title	Comments
REN/SES-00039	EN 300 721 (To be harmonized under Codified Directive [2])	Mobile Earth Stations (MES) providing Low Bit Rate Data Communications (LBRDC) using Low Earth Orbiting (LEO) satellites operating below 1 GHz	EN 301 xxx equivalent is being prepared
DEN/SES-00035	EN 301 681	Mobile Earth Stations (MESs), including handheld earth stations, for S-PCN in the 1,5/1,6 GHz bands, providing voice and/or data communications under the Mobile Satellite Service (MSS)	
DEN/SES-00023		Aircraft Earth Stations operating under the Aeronautical Mobile Satellite Service (AMSS)/Mobile Satellite Service (MSS)	
DEN/SES-00044-46	EN 301 459 (To be harmonized under R&TTE Directive [1])	Satellite Interactive Terminals (SIT) and Satellite User Terminals (SUT) transmitting towards satellites in geostationary orbit in the 29,5 GHz to 30,0 GHz frequency band	
DEN/SES-00028	EN 301 360	Satellite User Terminals transmitting towards satellites in geostationary orbit in the 27,5 GHz to 30,0 GHz	
DEN/SES-00027	EN 301 358	Satellite User Terminals (SUT) using satellites in geostationary orbit operating in the 19,7 GHz to 20,2 GHz (space-to-earth) and 29,5 GHz to 30 GHz (earth-to-space) frequency bands	Being replaced by EN 301 459
DEN/SES-00026	EN 301 359	Satellite Interactive Terminals (SIT) using satellites in geostationary orbit operating in the 11 GHz to 12 GHz (space-to-earth) and 29,5 GHz to 30,0 GHz (earth-to-space) frequency bands	Being replaced by EN 301 459

5.2.1.13.1 Combinations

Any suggested combinations are given in the TBR report [10].

5.3 Emerging radio technologies

Table 14 lists the possible deliverables that could include technical phenomena considered essential under the R&TTE Directive [1] and includes those deliverables for radio equipment listed in Annex to EC Mandate/284 [9].

Table 14: RE Emerging technologies

Work Item	TB	Document	Abbreviated Title	Comments
	ETSI/EBU JTC		Digital Video Broadcasting	Perhaps covered by items in table 8
DTS/TSGR-0425103U	EP 3GPP		RF parameters in support of Radio Resource Management	
DTS/TSGR-0425101U	EP 3GPP		UE Radio transmission and reception (FDD)	
DTS/TSRG-0425102U	EP 3GPP		UTRA (UE) MS Radio transmission and reception (TDD)	
DTS/TSGR-0425104U	EP 3GPP		UTRA (BS) Radio transmission and reception (FDD)	
DTS/TSGT-0134123_CS_U	EP 3GPP		Mobile Station (MS) conformance specification; Part 1: Conformance specification (3G TS 34.123-1)	
DEN/SES-000-HS-TERM	TC/SES		S-UMTS	

The Technical Specifications being prepared by EP 3GPP may contain requirements considered essential under Articles 3.2 of the R&TTE Directive [1]. It is possible that any requirements under Article 3.2 could be combined in one candidate harmonized standard.

The EP 3GPP list above is only provisional and may be added to as further work items are opened.

5.4 New radio work items

Table 15 lists those work items that have been identified in the EMC report [11] where a corresponding RE standard could be the subject of a new work item.

Table 15: EMC work items for which the RE standard is unidentified

Work Item	Abbreviated Title	Equipment standard	Comments
DEN/ERM-EMC-029	VHF ground-based and portable aeronautical equipment		
DEN/ERM-EMC-030	Wireless Video Links (WVL) operating in the 1,3 to 50 GHz band		

6 Proposed CHS

6.1 General approach

As a result of this study, a set of candidate harmonized standards for radio equipment is proposed.

A proforma for the production of harmonized standards within ETSI has been produced and is available as SR 001 470 [3].

An exhaustive list of current technical phenomena under Article 3.2 of the R&TTE Directive [1] which may be included in such a harmonized standard is given in Annex A.

Tables 1 to 13 identified combinations of technical phenomena under Article 3.2 of the R&TTE Directive [1] and subclause 6.2 gives suggested scopes for new harmonized standards reflecting the minimum combining shown in the tables.

For each proposed harmonized standard an appropriate set of technical phenomena derived from the list in Annex A is suggested.

The final decisions on which technical phenomena are essential, and sufficient, under the R&TTE Directive [1] is the responsibility of the competent Technical Body, who will then need to decide which test suites for these technical phenomena are essential under Annex III of the R&TTE Directive [1].

6.2 Possible technical phenomena combinations

6.2.1 TC/ERM RP02

6.2.1.1 Combination A

The combination of the technical phenomena of ETS 300 086, ETS 300 113, ETS 300 296, ETS 300 390, EN 301 166, I-ETS 300 219 and ETS 300 341 could result in the following scope and technical phenomena.

1 Scope

The present document applies to the following radio equipment types:

- 1 Equipment intended to initiate a specific response in the receiver;
- 2 Equipment intended for the transmission of analogue speech;
- 3 Equipment intended for the transmission of data or speech.

These radio equipment types can be either:

- 1 Base station equipment;
- 2 Mobile station equipment;
- 3 Hand portable equipment.

These radio equipment types are capable of operating in all or any part of the Land Mobile Service using frequency bands within the range from 30 MHz to 1 000 MHz and can utilize differing channel spacing.

The present document is intended to cover the provisions of Directive 1999/5/EC (R&TTE Directive) [1] Article 3.2 which states that "...radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications 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.

Technical phenomena that could be included in such a Harmonized Standard are shown in table 16:

Table 16: Combination A

Function	Technical Phenomena	Justification/Comments
Transmitting	Frequency error	
	Transmitter power	Carrier, effective radiated, maximum
	Adjacent channel power	
	Spurious emissions	
	Inter-modulation attenuation	
	Release time	
	Transient behaviour of the transmitter	
Receiving	Modulation Accuracy	
	(Maximum usable) sensitivity (inc. duplex)	
	Co-channel rejection	
	Adjacent channel selectivity	
	Spurious response rejection (inc. duplex)	
	Inter-modulation response rejection	
	Blocking or desensitization (inc. duplex)	
	Spurious emissions	

6.2.1.2 Combination B

The combination of the technical phenomena of ETS 300 135 and ETS 300 433 could result in the following scope and technical phenomena.

1 Scope

The present document applies to the following radio equipment types:

- 1 Angle-modulated Citizens' Band radio equipment (CEPT PR 27 Radio Equipment);
- 2 Double Side Band (DSB) and/or Single Side Band (SSB) amplitude modulated Citizens' Band (CB) radio equipment.

These radio equipment types are capable of operating in all or any part of the frequency bands for Citizens band equipment.

The present document is intended to cover the provisions of Directive 1999/5/EC (R&TTE Directive) [1] Article 3.2 which states that "...radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications 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.

Technical phenomena that could be included in such a Harmonized Standard are shown in table 17:

Table 17: Combination B

Function	Technical Phenomena	Justification/Comments
Transmitting	Frequency error	
	Frequency stability	Frequency deviation
	Transmitter power	Power
	Adjacent channel power	
	Spurious emissions	
	Transient behavior of the transmitter	Transient frequency behavior of the transmitter
Receiving	Modulation Accuracy	Unwanted amplitude modulation
	(Maximum usable) sensitivity (inc. duplex)	
	Adjacent channel selectivity	
	Spurious response rejection (inc. duplex)	
	Inter-modulation response rejection	
	Spurious emissions	Spurious radiations

6.2.2 TC/ERM RP04

6.2.2.1 Combination A

The combination of the technical phenomena of ETS 300 133-6, ETS 300 224 and ETS 300 719-1 could result in the following scope and technical phenomena.

1 Scope

The present document applies to the following radio equipment types:

- 1 Enhanced Radio Message System (ERMES) transmitters;
- 2 Paging service transmitters.

These radio equipment types are for ERMES, on-site and private wide-area paging systems.

The present document is intended to cover the provisions of Directive 1999/5/EC (R&TTE Directive) [1] Article 3.2 which states that "...radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications 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.

Technical phenomena that could be included in such a Harmonized Standard are shown in table 18:

Table 18: Combination A

Function	Technical Phenomena	Justification/Comments Notes 1, 2
Transmitting	Frequency error	
	Frequency stability	Frequency deviation
	Transmitter power	Carrier power; effective radiated power
	Adjacent channel power	
	Spurious emissions	Spurious radiations
Receiving	Transient behavior of the transmitter	
	(Maximum usable) sensitivity (inc. duplex)	Base station sensitivity for analogue speech; for messages
	Co-channel rejection	Base station, for analogue speech; for messages
	Adjacent channel selectivity	for analogue speech; for messages
	Spurious response rejection (inc. duplex)	Spurious response immunity for analogue speech; for messages
	Inter-modulation response rejection	Inter modulation immunity for analogue speech; for messages
	Blocking or desensitization (inc. duplex)	Analogue speech; for messages
Spurious emissions	(Pocket receiver) Spurious radiations; base station conducted spurious components; radiated spurious components	
NOTE: The same table applies also to inductive loop equipment.		

6.2.3 TC/ERM RP08

6.2.3.1 Combination A

The combination of the technical phenomena of ETS 300 220-1, EN 300 330 and EN 300 440 could result in the following scope and technical phenomena.

1 Scope

The present document applies to Short range device radio equipment.

This radio equipment is capable of operating in all or any part of the frequency range 9 kHz to 40 GHz.

The present document is intended to cover the provisions of Directive 1999/5/EC (R&TTE Directive) [1] Article 3.2 which states that "...radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications 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.

Technical phenomena that could be included in such a Harmonized Standard are shown in table 19:

Table 19: Combination A

Function	Technical Phenomena	Justification/Comments
Transmitting	Frequency error	
	Frequency stability	Under low voltage conditions
	Transmitter power	Conducted, radiated, field strength, output levels – H-field, E-field, RF carrier current
	Adjacent channel power	
	Spurious emissions	
	Transient behaviour of the transmitter	Frequency hop
	Modulation Accuracy	Bandwidth, deviation, depth
	Duty cycle	
Receiving	Spurious emissions	Spurious radiation

6.2.3.2 Combination B

The combination of the technical phenomena of I-ETS 300 131 and I-ETS 300 235 could result in the following scope and technical phenomena.

1 Scope

The present document applies to the following radio equipment types:

- 1 CT1;
- 2 CT2.

These radio equipment types are capable of operating in all or any part of the frequency bands as shown in table 1.

Table 1: Frequency bands for CT 1 equipment

Equipment	Band 1:	Paired Band:
CT 1	914-915 MHz	959-960 MHz
CT 1+	885-887 MHz	930-932 MHz

Table 2: Frequency bands for CT 2 equipment

Equipment	Band
CT 2	864.1-868.1 MHz

The present document is intended to cover the provisions of Directive 1999/5/EC (R&TTE Directive) [1] Article 3.2 which states that "...radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications 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.

Technical phenomena that could be included in such a Harmonized Standard are shown in table 20:

Table 20: Combination B

Function	Technical Phenomena	Justification/Comments
Transmitting	Frequency error	
	Transmitter power	Carrier, control
	Adjacent channel power	
	Spurious emissions	
	Inter-modulation attenuation	
	Transient behaviour of the transmitter	
Receiving	Modulation Accuracy	RF modulation, RF envelope
	(Maximum usable) sensitivity (inc. duplex)	
	Co-channel rejection	
	Adjacent channel selectivity	
	Spurious response rejection (inc. duplex)	
	Inter-modulation response rejection	
	Spurious emissions	radiations

6.2.4 TC/TM TM4

6.2.4.1 Combination A

The combination of the technical phenomena of EN 300 197, EN 300 198, ETS 300 407, ETS 300 408, ETS 300 632 and ETS 300 638 could result in the following scope and technical phenomena.

1 Scope

The present document applies to the following radio equipment type:

- 1 Radio relay systems for the transmission of digital signals and analogue video signals;
- 2 Fixed radio link equipment for the transmission of analogue video signals.

This radio equipment type is capable of operating in all or any part of the microwave radio frequency range 1 GHz to 60 GHz. Operation of the actual equipment may be limited by design to a sub-band of the overall frequency range.

The present document is intended to cover the provisions of Directive 1999/5/EC (R&TTE Directive) [1] Article 3.2 which states that "...radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications 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.

Technical phenomena that could be included in such a Harmonized Standard are shown in table 21:

Table 21: Combination A

Function	Technical Phenomena	Justification/Comments
Transmitting	Frequency error	Tolerance
	Transmitter power	Range, tolerance
	Spurious emissions	
	Modulation Accuracy	Spectrum mask, radiated spectrum, deviation
Receiving	(Maximum usable) sensitivity (inc. duplex)	Input level range, threshold
	Spurious response rejection (inc. duplex)	Interference sensitivity
	Blocking or desensitization (inc. duplex)	Noise figure
	Spurious emissions	

A suggested method of differentiating between the systems and frequency bands within a normative annex is shown below. The columns within the EN-RT would be used to show which parameter band the relevant equipment was designed to operate in.

Annex A (Normative): Table of Technical Parameters

Table A.1: Table of technical parameters

Parameter	38Ghz	23Ghz	55Ghz	58Ghz	24.5-29.5	10 and 14 GHz
Parameters for digital systems						
<i>Transmitter characteristics</i>						
Transmitter power range	< 1 W					
Transmitter output power tolerance	±3 dB or ±2dB					
RF spectrum mask Power spectral density	See figure 1 and table A.3					
Spectrum reference level	Note					
Spurious emissions	30 MHz to 21,2 GHz – 90 dBW; 21,2 GHz to 80 GHz- 60 dBW.					
RF frequency tolerance	±50 ppm.					
<i>Receiver characteristics</i>						
Input level range	-50 dBW					
Spurious emissions	30 MHz to 21,2 GHz – 90 dBW; 21,2 GHz to 80 GHz- 60 dBW.					
						Continued

Table A.1: Table of technical parameters (Continued)

Parameter	38Ghz	23Ghz	55Ghz	58Ghz	24.5-29.5	10 and 14 GHz
Parameters for wide band analogue systems						
<i>Transmitter characteristics</i>						
Transmit power range	< 1 W					
Transmit output power tolerance	±4 dB or ±3 dB					
Radiated spectrum power density	See figures 6 and 7					
Frequency deviation	See table 2					
Spurious emissions	30 MHz to 21,2 GHz – 90 dBW; 21,2 GHz to 80 GHz- 60 dBW.					
RF frequency tolerance	±100 ppm					
<i>Receiver characteristics</i>						
Input level range	-50 dBW to threshold					
Spurious emissions	30 MHz to 21,2 GHz – 90 dBW; 21,2 GHz to 80 GHz- 60 dBW.					
Noise figure	< 12 dB					
Transmit/receive performance						
Receiver threshold						
Interference sensitivity						

NOTE:
$$SRL = 10 \log_{10} \left(\frac{\text{Analyser IF Bandwidth (Hz)}}{\text{Symbol Rate (baud)}} \right)$$

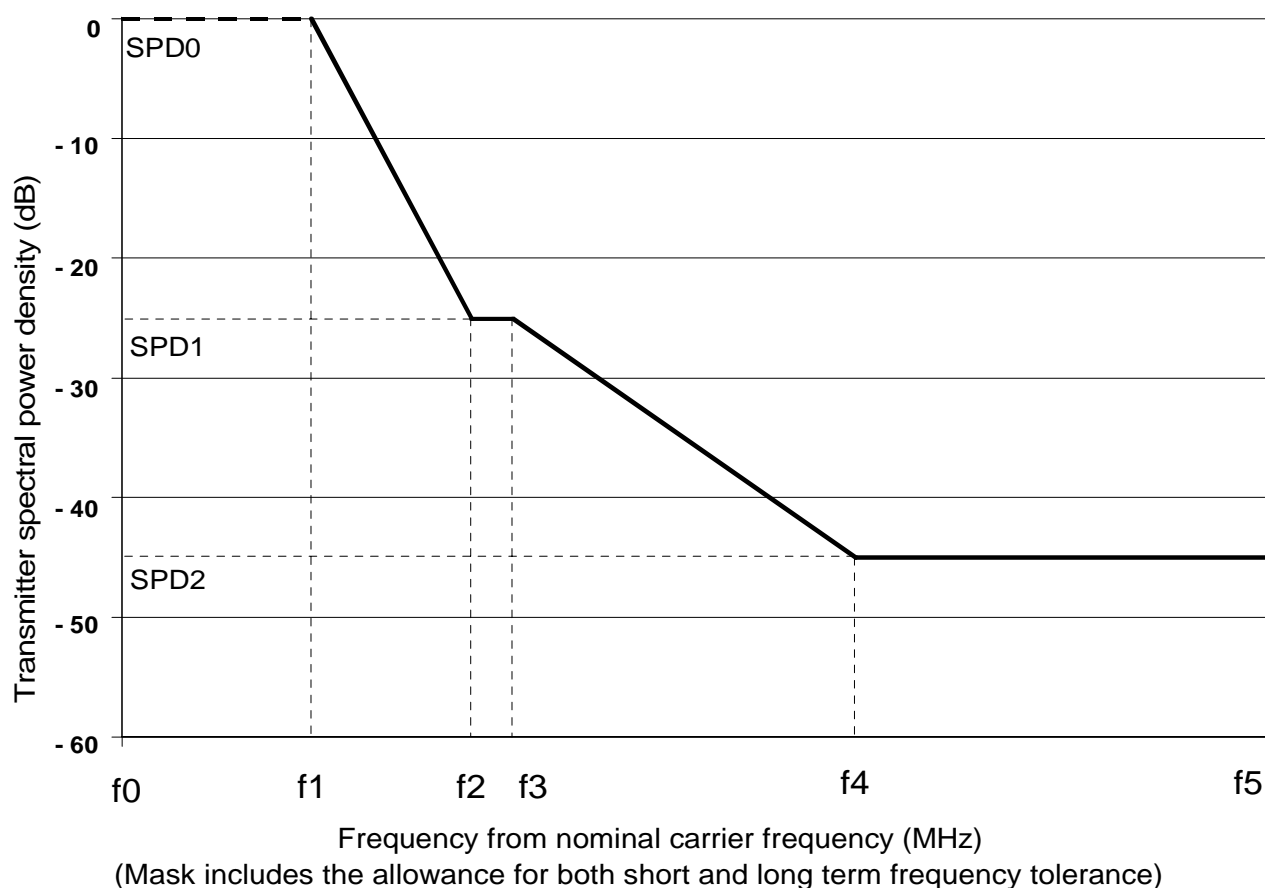


Figure A.1: Limits of spectral power density for minimum system rate of m Mbit/s using channel spacing of n MHz (referred to nominal centre frequency (fo))

**Table A.1: Transmitter characteristics:
Maximum frequency deviations of the main carrier by sub-carriers**

Video baseband	< 3,5 MHz	< 6 MHz	< 10 MHz	< 14 MHz
Channel spacing	28 MHz	56 MHz	56 MHz	56 MHz
Maximum frequency deviation of the main carrier				
Primary video	No limit	No limit	No limit	No limit
Sub-carriers				
- CW (pilot)	0,6 MHz	1 MHz	1 MHz	-
-Narrow band analogue (audio)	0,6 MHz	2 MHz	2 MHz	-
-Wide band analogue (video)	-	4 MHz	4 MHz	-
-Digital	-	2 MHz	2 MHz	-
Spectrum mask	figure 9	figure 10	figure 10	figure 10

Table A.2: Limits of spectral power density (SPD) for minimum system rates in reference to figure A.1.

System/ Parameter	2/7	8/14	34/28	140;155/140	34/56
f0	0 MHz	0 MHz	0 MHz	0 MHz	0 MHz
SPD0	0 dB	0 dB	0 dB	0 dB	0 dB
f1	3,3 MHz	6 MHz			
f2	6,1 MHz	11,6 MHz			
SPD1	-25 dB	-25 dB	-25 dB	-25 dB	-25 dB
f3	6,8 MHz	13 MHz			
f4	12,8 MHz	22 MHz			
SPD2	-45 dB	-45 dB	-45 dB	-45 dB	-45 dB
f5	20 MHz	30 MHz			

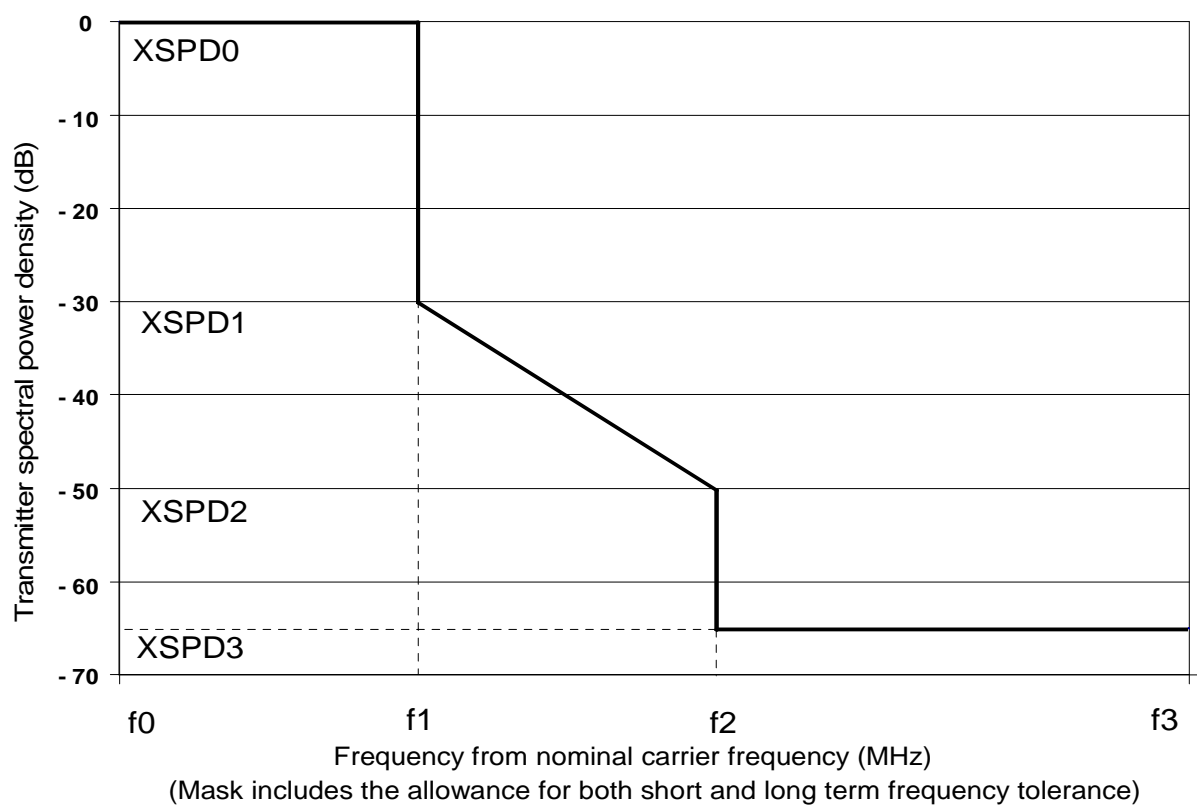


Figure A.2: Limits of spectral power density for video basebands up to p MHz using channel spacing of q MHz (referred to nominal centre frequency (fo))

Table A.3: Limits of transmit spectral power density in reference to figure A.2

System/ Parameter	3.5/28	14/56
f0	0 MHz	0 MHz
XSPD0	0 dB	0 dB
f1	7 MHz	14 MHz
XSPD1	-30 dB	-30 dB
f2		
XSPD2	-50 dB	-50 dB
XSPD3	-65 dB	-65 dB
f3		

Annex B (Normative): Table of Essential Requirements**Table B.1: EN Requirements table (EN-RT)**

EN Reference		EN <xxx xxx>				Comment
No.	Reference	EN-R (Note 1)	Status	Frequency Band	Support	
1	<4.3.1>	<Limits for parameter 1>				
2	<etc.>	<etc.>				
3						
<etc.>						

NOTE 1: These EN-Rs are justified under Article 3.2 of the R&TTE Directive.

Key to columns:

No: EN-RT entry number

Reference: Clause number within the present document of the supporting text for the entry

EN-R: EN Requirement Title of entry within this EN-RT

Status: Status of the entry (M = Mandatory, O = Optional, N/A. Not Applicable)

Frequency Band: The actual frequency band that the equipment is designed to operate within.

Support: Yes indicates implementation in full compliance with the EN-R in accordance with the specification
 No indicates that the implementation does not claim full support of the EN-R in accordance with the specification.

NOTE: Requirements under Article 3.1(a) and 3.1(b) do not appear in this requirement table.

Annex C (Normative) Test methods

Test methods will either be referenced from the existing TM4 documents, be merged into a test method harmonized standard or be reproduced here (preferred solution).

6.2.4.2 Combination B

The combination of the technical phenomena of EN 300 234, EN 300 430, ETS 300 639, ETS 300 786, EN 301 277 and EN 301 669 could result in the following scope and technical phenomena.

1 Scope

The present document applies to High capacity digital radio-relay systems carrying STM-x signals radio equipment.

This radio equipment is capable of operating in all or any part of the microwave radio frequency range 1 GHz to 60 GHz.

The present document is intended to cover the provisions of Directive 1999/5/EC (R&TTE Directive) [1] Article 3.2 which states that "...radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications 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.

Technical phenomena that could be included in such a Harmonized Standard are shown in table 22:

Table 22: Combination B

Function	Technical Phenomena	Justification/Comments
Transmitting	Frequency stability	Tolerance
	Transmitter power	Output
	Spurious emissions	
	Modulation Accuracy	Spectrum mask
Receiving	(Maximum usable) sensitivity (inc. duplex)	Input level range
	Co-channel rejection	Interference sensitivity
	Adjacent channel selectivity	Interference sensitivity
	Spurious response rejection (inc. duplex)	CW sensitivity
	Blocking or desensitization (inc. duplex)	Interference sensitivity, image rejection
	Spurious emissions	

6.2.4.3 Combination C

The combination of the technical phenomena of ETS 300 431, ETS 300 630 and ETS 300 633 could result in the following scope and technical phenomena.

1 Scope

The present document applies to low and medium capacity point-to-point Digital Radio Relay Systems (DRRS) operating in the 1,4 GHz frequency band radio equipment.

This radio equipment is capable of operating in all or any part of the microwave radio frequency range 1 GHz to 3 GHz.

The present document is intended to cover the provisions of Directive 1999/5/EC (R&TTE Directive) [1] Article 3.2 which states that "...radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications 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.

Technical phenomena that could be included in such a Harmonized Standard are shown in table 23:

Table 23: Combination C

Function	Technical Phenomena	Justification/Comments
Transmitting	Frequency stability	Tolerance
	Transmitter power	
	Spurious emissions	
	Modulation Accuracy	Spectrum mask
Receiving	(Maximum usable) sensitivity (inc. duplex)	Input level range
	Spurious emissions	

6.2.4.4 Combination D

The combination of the technical phenomena of EN 301 021, ETS 300 636 and EN 301 213-3 could result in the following scope and technical phenomena.

1 Scope

The present document applies to Time Division Multiple Access (TDMA) point-to-multipoint digital radio systems radio equipment.

This radio equipment is capable of operating in all or any part of the microwave radio frequency range 1 GHz to 60 GHz. (Continued)

(Continued)

The present document is intended to cover the provisions of Directive 1999/5/EC (R&TTE Directive) [1] Article 3.2 which states that "...radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications 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.

Technical phenomena that could be included in such a Harmonized Standard are shown in this unnumbered table 24:

Table 24: Combination D

Function	Technical Phenomena	Justification/Comments
Transmitting	Frequency error	Accuracy, tolerance
	Frequency stability	Frequency control
	Transmitter power	Output, ATPC
	Spurious emissions	
	Modulation Accuracy	Spectrum mask
Directional	Off-axis EIRP density	Radiation pattern envelope
	Antenna gain	
Receiving	(Maximum usable) sensitivity (inc. duplex)	Input level range
	Co-channel rejection	Interference sensitivity
	Adjacent channel selectivity	Interference sensitivity
	Spurious response rejection (inc. duplex)	CW spurious/interference, Image frequency rejection
	Inter-modulation response rejection	Distortion sensitivity
	Spurious emissions	

6.2.4.5 Combination E

The combination of the technical phenomena of EN 300 631-1/-2, EN 301 215-1/-2, EN 302 085 and ETS 300 833 could result in the following scope and technical phenomena.

1 Scope

The present document applies to antennas radio equipment.

This radio equipment is capable of operating in all or any part of the microwave radio frequency range 1 GHz to 60 GHz.

The present document is intended to cover the provisions of Directive 1999/5/EC (R&TTE Directive) [1] Article 3.2 which states that "...radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications 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.

Technical phenomena that could be included in such a Harmonized Standard are shown in table 25:

Table 25: Combination E

Function	Technical Phenomena	Justification/Comments
Directional	Off-axis EIRP density	Radiation pattern
	Antenna gain	
	Antenna X-polar discrimination	Cross, co-polar
	Antenna pointing accuracy/control	Stability – wind, ice

6.2.4.6 Combination F

The combination of the technical phenomena of EN 301 055, EN 301 124, EN 301 179 and EN 301 253 could result in the following scope and technical phenomena.

1 Scope

The present document applies to the following radio equipment type:

- 1 Digital Radio Relay Systems (DRRS); Direct Sequence Code Division Multiple Access (DS-CDMA) point-to-multipoint systems;
- 2 Digital Radio Relay Systems (DRRS); Frequency Hopping Code Division Multiple Access (FH-CDMA) point-to-multipoint systems.

This radio equipment type is capable of operating in all or any part of the microwave radio frequency range 1 GHz to 60 GHz.

The present document is intended to cover the provisions of Directive 1999/5/EC (R&TTE Directive) [1] Article 3.2 which states that "...radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications 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.

Technical phenomena that could be included in such a Harmonized Standard are shown in table 26:

Table 26: Combination F

Function	Technical Phenomena	Justification/Comments
Transmitting	Frequency error	Tolerance
	Transmitter power	Range
	Spurious emissions	
	Modulation Accuracy	Spectrum mask
Receiving	(Maximum usable) sensitivity (inc. duplex)	Dynamic range
	Co-channel rejection	Interference sensitivity
	Adjacent channel selectivity	Interference sensitivity
	Spurious response rejection (inc. duplex)	CW Interference rejection
	Spurious emissions	

6.2.4.7 Combination G

The combination of the technical phenomena of EN 301 128, EN 301 216 and EN 301 387 could result in the following scope and technical phenomena.

1 Scope

The present document applies to Digital Radio Relay Systems (DRRS); Plesiochronous Digital Hierarchy (PDH); Low and medium capacity and STM-0 systems radio equipment.

This radio equipment is capable of operating in all or any part of the microwave radio frequency range 1 GHz to 60 GHz.

The present document is intended to cover the provisions of Directive 1999/5/EC (R&TTE Directive) [1] Article 3.2 which states that "...radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications and orbital resources so as to avoid harmful interference".

(Continued)

(Continued)

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.

Technical phenomena that could be included in such a Harmonized Standard are shown in table 27:

Table 27: Combination G

Function	Technical Phenomena	Justification/Comments
Transmitting	Frequency error	Tolerance
	Transmitter power	Range
	Spurious emissions	
	Modulation Accuracy	Spectrum mask
Receiving	(Maximum usable) sensitivity (inc. duplex)	Dynamic range
	Co-channel rejection	Interference sensitivity
	Adjacent channel selectivity	Interference sensitivity
	Spurious response rejection (inc. duplex)	CW Interference rejection
	Spurious emissions	

6.2.4.8 Combination H

The combination of the technical phenomena of EN 301 080, EN 301 373 and EN 301 213-2 could result in the following scope and technical phenomena.

1 Scope

The present document applies to Digital Radio Relay Systems (DRRS); Frequency Division Multiple Access (FDMA); Point-to-multipoint systems radio equipment.

This radio equipment is capable of operating in all or any part of the microwave radio frequency range 1 GHz to 60 GHz.

The present document is intended to cover the provisions of Directive 1999/5/EC (R&TTE Directive) [1] Article 3.2 which states that "...radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications 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.

Technical phenomena that could be included in such a Harmonized Standard are shown in table 28:

Table 28: Combination H

Function	Technical Phenomena	Justification/Comments
Transmitting	Frequency error	Tolerance
	Frequency stability	Control
	Transmitter power	Output
	Spurious emissions	
	Modulation Accuracy	Spectrum mask
Receiving	(Maximum usable) sensitivity (inc. duplex)	Input level range
	Co-channel rejection	Interference sensitivity
	Adjacent channel selectivity	Interference sensitivity
	Spurious response rejection (inc. duplex)	CW spurious interference
	Inter-modulation response rejection	Distortion sensitivity
	Spurious emissions	

6.2.4.9 Single combination

It is believed that following the procedure outlined in subclause 6.2.4.1, for the combination of the technical phenomena of EN 300 197, EN 300 198, ETS 300 407, ETS 300 408, ETS 300 632 and ETS 300 638, a further reduction in the number of Harmonized Standards could be achieved.

6.2.5 ETSI/EBU JTC

6.2.5.1 Combination A

The combination of the technical phenomena of ETS 300 384 and ETS 300 750 could result in the following scope and technical phenomena.

1 Scope

The present document applies to VHF frequency modulated sound broadcast transmitters radio equipment.

This radio equipment is capable of operating in all or any part of the VHF broadcast frequency ranges shown in figure 1.

Figure 1: VHF Broadcast frequency bands

Frequency band
66 – 73 MHz
88 – 108 MHz

The present document is intended to cover the provisions of Directive 1999/5/EC (R&TTE Directive) [1] Article 3.2 which states that "...radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications 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.

Technical phenomena that could be included in such a Harmonized Standard are shown in table 29:

Table 29: Combination A

Function	Technical Phenomena	Justification/Comments
Transmitting	Frequency error	Frequency adjustment, frequency deviation, over deviation
	Frequency stability	Frequency drift; unwanted frequency shift; deviation sensitivity stability
	Transmitter power	
	Spurious emissions	Spurious emissions; out-of-band emissions
	Modulation Accuracy	Synchronous AM (AM due to FM); hum and noise (residual AM)

6.2.6 EP SMG

6.2.6.1 Combination A

The combination of the technical phenomena of I-ETS 300 609-1, I-ETS 300 609-4, EN 301 087 and GSM 11.20 could result in the following scope and technical phenomena.

1 Scope

The present document applies to the following radio equipment types:

- 1 GSM base station;
- 2 GSM repeater station.

This radio equipment type is capable of operating in all or any part of the frequency bands given in table 1.

Table 1: Frequency bands for GSM900 and DCS1800 Base Station Systems

Designation	TX:	RX:
R-GSM900	921-960 MHz	876-915 MHz
E-GSM900	925-960 MHz	880-915 MHz
P-GSM900	935-960 MHz	890-915 MHz
DCS1800	1805-1880 MHz	1710-1785 MHz

The present document is intended to cover the provisions of Directive 1999/5/EC (R&TTE Directive) [1] Article 3.2 which states that "...radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications 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.

Technical phenomena that could be included in such a Harmonized Standard are shown in table 30:

Table 30: Combination A

Function	Technical Phenomena	Justification/Comments
Transmitting	Frequency error	Phase and Mean frequency
	Transmitter power	Mean carrier, RF carrier power versus time
	Adjacent channel power	
	Spurious emissions	
	Inter-modulation attenuation	
Directional	Antenna gain	Out of band gain
Receiving	(Maximum usable) sensitivity (inc. duplex)	Signal strength, Static Reference
	Spurious response rejection (inc. duplex)	Interference level, AM suppression
	Inter-modulation response rejection	
	Blocking or desensitization (inc. duplex)	
	Spurious emissions	
	Multipath sensitivity	
Control and Monitoring Functions	Enabling Signalling	Synchronization
	Network interface bit errors	Adaptive frame alignment
	Logical channel arrangement	Frame structure
	Control of basic link communication	Radio link management

6.2.7 EP BRAN

6.2.7.1 Combination A

The combination of the technical phenomena of ETS 300 836-1, ETS 300 836-2, ETS 300 836-3, ETS 300 836-4 and ETS 300 652 could result in the following scope and technical phenomena.

1 Scope

The present document applies to High Performance Radio Local Area Network (HIPERLAN) Type 1 Units operating in all or any part of the band 5,15 GHz to 5,30 GHz and that use Non-Pre-emptive Priority Multiple Access as the channel access method radio equipment.

The present document is intended to cover the provisions of Directive 1999/5/EC (R&TTE Directive) [1] Article 3.2 which states that "...radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications 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.

Technical phenomena that could be included in such a Harmonized Standard are shown in table 31:

Table 31: Combination A

Function	Technical Phenomena	Justification/Comments
Transmitting	Frequency error	Frequency error, Phase error
	Frequency stability	
	Transmitter power	Peak envelope power, control, Instantaneous, burst
	Spurious emissions	Spurious, Unwanted emissions outside the HIPERLAN bands, Unwanted RF radiation
	Modulation Accuracy	Technique, output spectrum, signalling rate, accuracy
	Duty cycle	Switching times
Receiving	(Maximum usable) sensitivity (inc. duplex)	Signal strength, Maximum operating input, Sensitivity limit
	Adjacent channel selectivity	Selectivity
	Spurious emissions	Unwanted emissions
Control and Monitoring Functions	Enabling Signalling	PHY Layer Management
	Network interface bit errors	Frame Error Ratio

6.3 Contents of harmonized standards

Authors of standards intended to be harmonized under the R&TTE Directive [1] should follow the guidance given in EG 201 399 [4]. In particular:

Technical Bodies should consider the maximum list of technical phenomena for the attributes applicable to their equipment and for each technical phenomenon whether or not it is actually essential (see 6.4.2 in the guide [4]).

NOTE 1: It should be noted that for RE the essential requirements applied at the antenna port (radiation and immunity) and at the "enclosure" (or cabinet radiation) need to be considered in the radio harmonized standard as they are specifically excluded from classical EMC standards.

Parameters shall only be considered as essential if there is a possibility of harmful interference that is unlikely to be controlled by other means (see 6.4.2 in the guide [4]).

Every technical requirement shall be expressed so as to be capable of objective verification (see 5.1.2 in the guide [4]).

The candidate Harmonized Standard shall include all technical specifications necessary for demonstrating presumption of conformity of the products and phenomena within its scope (see Annex B.1.e in the guide [4]).

Where methods of measurement need to be specified this should preferably be by normative reference to other relevant standards; however tests and test methods shall not be identified in themselves as technical requirements (see 5.1.2 and Annex B.1.f in the guide [4]).

NOTE 2: If the radio test suites for an RE are contained in a standard harmonized under the R&TTE Directive [1], then those test suites become the essential radio test suites for conformity assessment under Annex III procedures of the R&TTE Directive [1]. It is therefore very important that the radio test suites in a harmonized standard do not leave out anything essential, and do not include anything not essential, to the avoidance of harmful interference.

Whilst technical requirements for the receiving parts of radio equipment may be regarded as essential by a Technical Body there are no essential test suites for receiving parts as the requirements of Annex III do not apply to receiving parts of radio equipment (see R&TTE Directive [1], Article 10.4 and 5.1.2 in the guide [4]).

7 Conclusions

1. The candidate harmonized standards proposed in this report could cover all the essential technical phenomena for RE under Article 3.2 of the R&TTE Directive [1] currently being considered by ETSI.
2. A suggested list of applicable technical phenomena is given for each candidate harmonized standard.
3. It should be noted that for RE the essential requirements applied at the antenna port (radiation and immunity) and at the "enclosure" (or cabinet radiation) need to be considered in the radio harmonized standard as they are specifically excluded from classical EMC standards.
4. For any particular candidate harmonized standard under Article 3.2 of the R&TTE Directive [1], technical phenomena should only be considered as essential if there is a possibility of harmful interference that is unlikely to be avoided by other means.
5. Technical Bodies responsible for each CHS need to assess precisely which technical phenomena are essential to ensure conformance of their equipment types with the essential requirements of Article 3.2 of the R&TTE Directive [1].
6. These Technical Bodies also need to assess precisely which radio test suites are essential to satisfy the requirements of Annex III of the R&TTE Directive [1].

Annex A (informative): Technical requirements proforma

Annex A comprises an exhaustive list those current technical phenomena that could be considered as being essential requirements to show compliance with article 3.2 of the R&TTE Directive [1]. Technical Bodies may wish to consider each phenomena in accordance with EG 201 399 [4].

The list has been formulated in accordance with EG 201 399 [4] and numbered according to the Candidate Harmonized Standard proforma but without the style headings being applied.

4.2 Conformance requirements

<

4.2.1<Transmitter>

Guidance note: Remove this clause if equipment is not able to transmit.

4.2.1.1<Frequency error>

Guidance note: Remove this subclause and each of the subclauses below when Not Applicable, renumbering as appropriate.

4.2.1.2<Frequency stability>

4.2.1.3<Designation of channels>

4.2.1.4<Transmitter power>

4.2.1.5<Adjacent channel power>

4.2.1.6<Spurious emissions>

4.2.1.7<Inter-modulation attenuation>

4.2.1.8<Release time>

4.2.1.9<Transient behavior of the transmitter>

4.2.1.9<Modulation Accuracy>

4.2.1.10<Duty cycle>

>

<

4.2.2<Directional>

Guidance note: Remove this whole clause if equipment has no directional capability, renumbering as appropriate.

4.2.2.1<Off-axis EIRP density>

Guidance note: Remove this subclause and each of the subclauses below when Not Applicable, renumbering as appropriate.

4.2.2.2<Antenna gain>

4.2.2.3<Antenna X-polar discrimination>

4.2.2.4<Antenna pointing accuracy/control>

>

<

4.2.3<<Receiver>

Guidance note: Remove this whole clause when equipment is unable to receive or when the clause is Not Applicable, renumbering as appropriate.

4.2.3.1<(Maximum usable) sensitivity (inc. duplex)>

Guidance note: Remove this subclause and each of the subclauses below when Not Applicable, renumbering as appropriate.

4.2.3.2<Co-channel rejection>

4.2.3.3<Adjacent channel selectivity>

4.2.3.4<Spurious response rejection (inc. duplex)>

4.2.3.5<Inter-modulation response rejection>

4.2.3.6<Blocking or desensitization (inc. duplex)>

4.2.3.7<Spurious emissions>

4.2.3.8<Multi-path sensitivity>

>

<

4.2.4<Control and Monitoring>

Guidance note: Remove this whole clause when equipment does not use control and monitoring.

4.2.4.1<Enabling Signaling>

Guidance note: Remove this subclause and each of the subclauses below when Not Applicable, renumbering as appropriate.

4.2.4.2<Sharing Protocols>

4.2.4.3<Network interface bit errors>

4.2.4.4<Error control by coding and decoding of logical channels>

4.2.4.5<Logical channel arrangement>

4.2.4.6<Control of communication in logical channels>

4.2.4.7<Correct interpretation of Network control information>

4.2.4.8<Network interface addressing>

4.2.4.9<Control of basic link communication>

4.2.4.10<Control of random access>

4.2.4.11<Control of radio resource allocation>

4.2.4.12<Monitoring functions for cell selection>

4.2.4.13<Control functions for usage of cells>

4.2.4.14<Control of group attach/detach>

4.2.4.15<TX enable/disable control>

4.2.4.16<TX Call set up control>

4.2.4.17<Control of call maintenance>

4.2.4.18<Control of call disconnect>

4.2.4.19<Authentication control>

4.2.4.20<Encryption control procedures>

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Bibliography

The following material, though not specifically referenced in the body of the present document (or not publicly available), gives supporting information.

- Council Directive 96/98/EC of 20 December 1996 on marine equipment.

History

Document history		
V1.1.1	December 1999	Publication