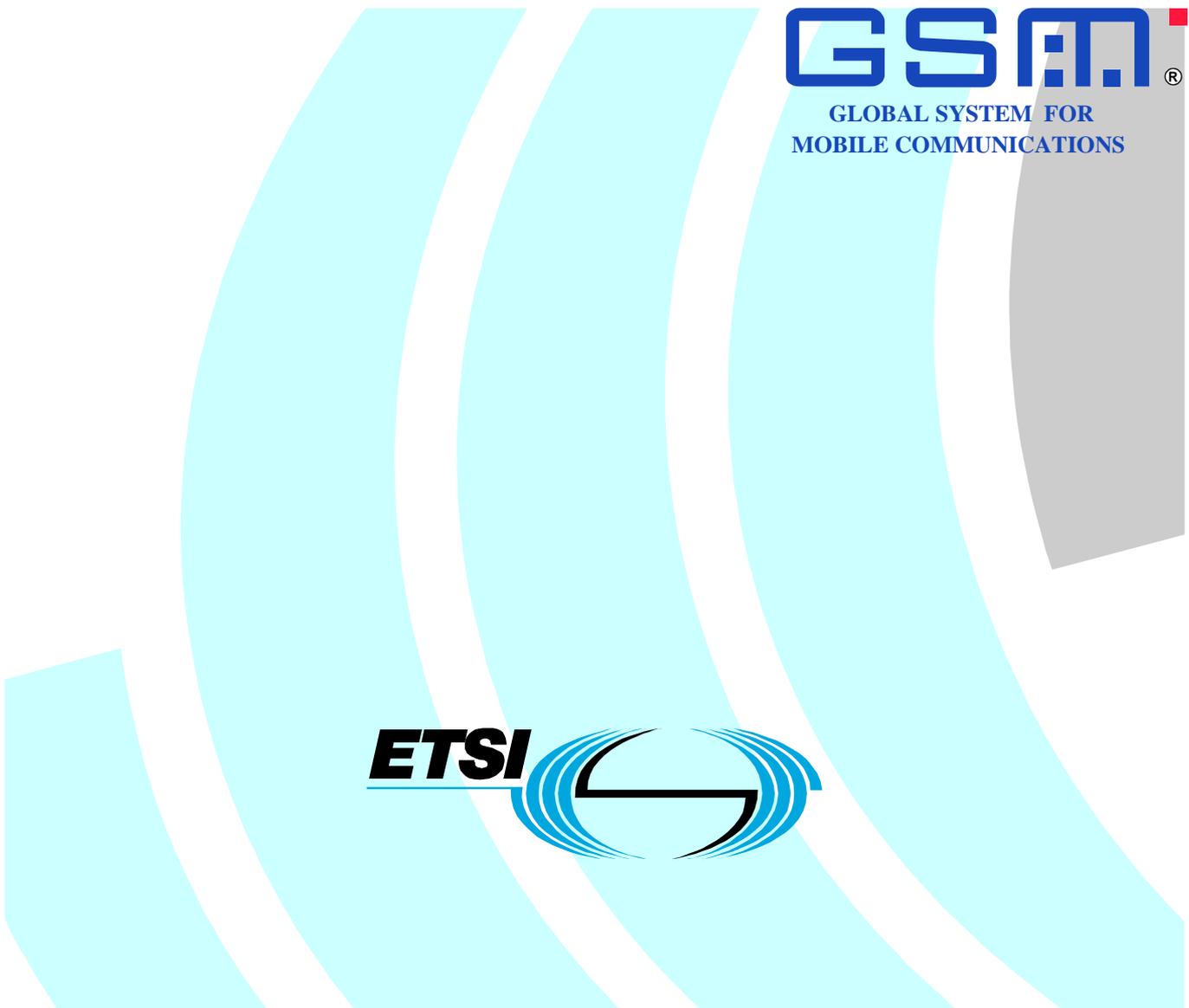


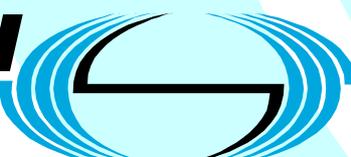
ETSI EN 301 511 V9.0.2 (2003-03)

Candidate Harmonized European Standard (Telecommunications series)

**Global System for Mobile communications (GSM);
Harmonized EN for mobile stations
in the GSM 900 and GSM 1800 bands
covering essential requirements under
article 3.2 of the R&TTE directive (1999/5/EC)**



GSM®
GLOBAL SYSTEM FOR
MOBILE COMMUNICATIONS

ETSI 

Reference

REN/MSG-GSM-1311Q7R1

Keywords

GSM

ETSI

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

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

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

Important notice

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

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

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at

<http://portal.etsi.org/tb/status/status.asp>

If you find errors in the present document, send your comment to:

editor@etsi.org

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2003.
All rights reserved.

DECT™, **PLUGTESTS™** and **UMTS™** are Trade Marks of ETSI registered for the benefit of its Members.
TIPHON™ and the **TIPHON logo** are Trade Marks currently being registered by ETSI for the benefit of its Members.
3GPP™ is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

Contents

Intellectual Property Rights	5
Foreword.....	5
Introduction	6
1 Scope	8
2 References	9
3 Definitions and abbreviations.....	11
3.1 Definitions	11
3.2 Abbreviations	11
4 Technical requirements specifications	12
4.1 Environmental profile.....	12
4.2 Conformance requirements	12
4.2.1 Transmitter - Frequency error and phase error	12
4.2.2 Transmitter - Frequency error under multipath and interference conditions	12
4.2.3 Transmitter - Frequency error and phase error in HSCSD multislot configuration	12
4.2.4 Frequency error and phase error in GPRS multislot configuration.....	12
4.2.5 Transmitter output power and burst timing.....	12
4.2.6 Transmitter - Output RF spectrum.....	12
4.2.7 Transmitter output power and burst timing in HSCSD multislot configurations.....	12
4.2.8 Transmitter - Output RF spectrum in HSCSD multislot configuration.....	12
4.2.9 Transmitter - Output RF spectrum for MS supporting the R-GSM frequency band.....	13
4.2.10 Transmitter output power in GPRS multislot configuration	13
4.2.11 Output RF spectrum in GPRS multislot configuration	13
4.2.12 Conducted spurious emissions - MS allocated a channel	13
4.2.13 Conducted spurious emissions - MS in idle mode	13
4.2.14 Conducted spurious emissions for MS supporting the R-GSM frequency band - MS allocated a channel.....	13
4.2.15 Conducted spurious emissions for MS supporting the R-GSM frequency band - MS in idle mode.....	13
4.2.16 Radiated spurious emissions - MS allocated a channel	13
4.2.17 Radiated spurious emissions - MS in idle mode	13
4.2.18 Radiated spurious emissions for MS supporting the R-GSM frequency band - MS allocated a channel.....	13
4.2.19 Radiated spurious emissions for MS supporting the R-GSM frequency band - MS in idle mode.....	13
4.2.20 Receiver Blocking and spurious response - speech channels	13
4.2.21 Receiver Blocking and spurious response - speech channels for MS supporting the R-GSM frequency band.....	14
4.2.22 Frequency error and Modulation accuracy in EGPRS Configuration.....	14
4.2.23 Frequency error under multipath and interference conditions in EGPRS Configuration.....	14
4.2.24 EGPRS Transmitter output power	14
4.2.25 Output RF spectrum in EGPRS configuration	14
4.2.26 Blocking and spurious response in EGPRS configuration.....	14
5 Testing for compliance with technical requirements.....	14
5.1 Environmental conditions for testing	14
5.2 Essential radio test suites.....	14
5.2.1 Transmitter - Frequency error and phase error	14
5.2.2 Transmitter - Frequency error under multipath and interference conditions	14
5.2.3 Transmitter - Frequency error and phase error in HSCSD multislot configuration	14
5.2.4 Frequency error and phase error in GPRS multislot configuration.....	15
5.2.5 Transmitter output power and burst timing.....	15
5.2.6 Transmitter - Output RF spectrum.....	15
5.2.7 Transmitter output power and burst timing in HSCSD multislot configurations.....	15
5.2.8 Transmitter - Output RF spectrum in HSCSD multislot configuration.....	15
5.2.9 Transmitter - Output RF spectrum for MS supporting the R-GSM frequency band.....	15
5.2.10 Transmitter output power in GPRS multislot configuration	15

5.2.11	Output RF spectrum in GPRS multislot configuration	15
5.2.12	Conducted spurious emissions - MS allocated a channel	15
5.2.13	Conducted spurious emissions - MS in idle mode	15
5.2.14	Conducted spurious emissions for MS supporting the R-GSM frequency band - MS allocated a channel	15
5.2.15	Conducted spurious emissions for MS supporting the R-GSM frequency band - MS in idle mode.....	15
5.2.16	Radiated spurious emissions - MS allocated a channel	16
5.2.17	Radiated spurious emissions - MS in idle mode	16
5.2.18	Radiated spurious emissions for MS supporting the R-GSM frequency band - MS allocated a channel	16
5.2.19	Radiated spurious emissions for MS supporting the R-GSM frequency band - MS in idle mode.....	16
5.2.20	Receiver Blocking and spurious response - speech channels	16
5.2.21	Receiver Blocking and spurious response - speech channels for MS supporting the R-GSM frequency band.....	16
5.2.22	Frequency error and Modulation accuracy in EGPRS Configuration.....	16
5.2.23	Frequency error under multipath and interference conditions in EGPRS Configuration.....	16
5.2.24	EGPRS Transmitter output power	16
5.2.25	Output RF spectrum in EGPRS configuration	16
5.2.26	Blocking and spurious response in EGPRS configuration.....	16
Annex A (normative):	The EN requirements table (EN-RT)	17
A.1	Type of Mobile Stations	19
A.2	Additional Information.....	19
Annex B (informative):	The EN title in the official languages	20
Annex C (informative):	Change history	21
History		22

Intellectual Property Rights

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

All published ETSI deliverables shall include information which directs the reader to the above source of information.

Foreword

This Candidate Harmonized European Standard (Telecommunications series) has been produced by ETSI Technical Committee Mobile Standards Group (MSG).

The present document has been produced by ETSI in response to a mandate from the European Commission issued under Council Directive 98/34/EC [33] (as amended) laying down a procedure for the provision of information in the field of technical standards and regulations.

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

Technical specifications relevant to Directive 1999/5/EC [1] are given in annex A.

National transposition dates	
Date of adoption of this EN:	14 March 2003
Date of latest announcement of this EN (doa):	30 June 2003
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 December 2003
Date of withdrawal of any conflicting National Standard (dow):	30 June 2004

Introduction

The present document is part of a set of standards designed to fit in a modular structure to cover all radio and telecommunications terminal equipment under the R&TTE Directive [1]. Each standard is a module in the structure. The modular structure is shown in figure 1.

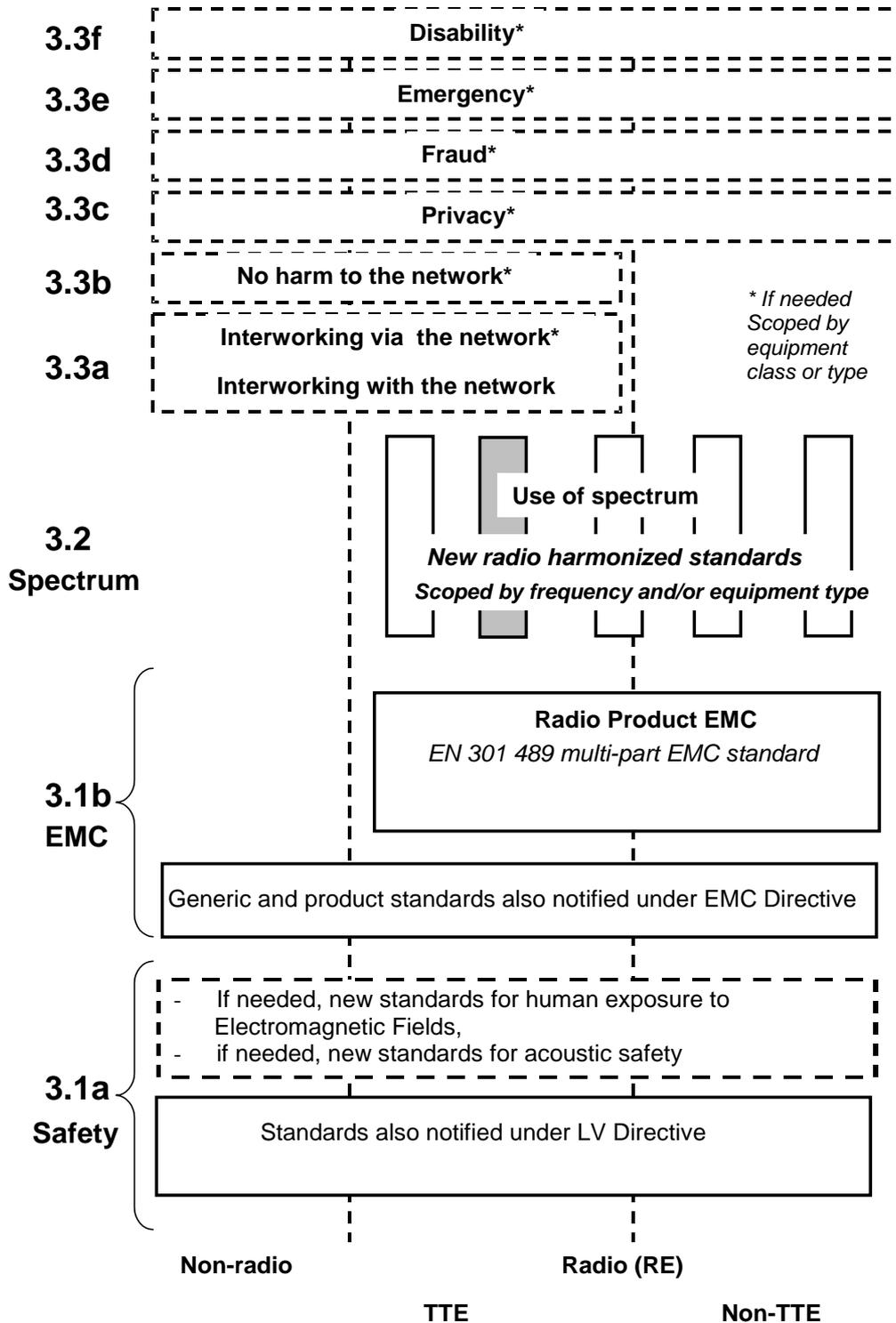


Figure 1: Modular structure for the various standards used under the R&TTE Directive [1]

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

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

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

For article 3.1b the diagram shows EN 301 489 [32], the multi-part product EMC standard for radio used under the EMC Directive [30].

For article 3.1a the diagram shows the existing safety standards currently used under the LV Directive [31] and new standards covering human exposure to electromagnetic fields. New standards covering acoustic safety may also be required.

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. A radio spectrum standard will apply if it is radio equipment. An article 3.3 standard will apply as well only if the relevant essential requirement under the R&TTE Directive [1] is adopted by the Commission and if the equipment in question is covered by the scope of the corresponding standard. Thus, depending on the nature of the equipment, the essential requirements under the R&TTE Directive [1] may be covered in a set of standards.

The modularity principle has been taken because:

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

1 Scope

The present document applies to the following radio telecommunications terminal equipment types:

- GSM mobile station.

This radio equipment type is for operation within the Digital cellular telecommunications system in the GSM 900 and/or GSM 1800 frequency bands as shown in table 1.

Table 1: Frequency bands for GSM900 and GSM1800 Mobile Station system

Type	TX	RX
P-GSM900	890 MHz to 915 MHz	935 MHz to 960 MHz
GSM1800	1 710 MHz to 1 785 MHz	1 805 MHz to 1 880 MHz
E-GSM900	880 MHz to 915 MHz	925 MHz to 960 MHz
R-GSM900	876 MHz to 915 MHz	921 MHz to 960 MHz

with a channel separation of 200 kHz, utilising constant envelope modulation and carrying traffic channels according to the Time Division Multiple Access (TDMA) principle.

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".

The present document covers the general access requirements for terminal equipment for Phase 2 and Releases 1996, 1997, 1998, 1999 and Rel-4. The general access requirements, applied to the terminal equipment, are for one release only. The present document does not cover the GPRS Class A mobiles, the GPRS only mobiles and the ECSD mobiles.

For each test purpose and its corresponding conformance requirement, a reference is given to the test method in TS 151 010-1 [2]. The requirements apply at the air interface, which may be stimulated to perform the tests by additional equipment if necessary.

The measurement uncertainty is described in TS 151 010-1 [2].

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] will apply to equipment within the scope of the present document.

NOTE 1: A list of such ENs is included on the web site <http://www.newapproach.org>.

TS 151 010-1 [2] constitutes the conformance test suite for GSM. The verification of the conformance requirements in the present document is based on the tests described in this reference. The set of requirements in TS 151 010-1 [2] and the set of requirements in the present document need not be identical.

Some requirements only apply to specific types of mobile station (e.g. data tests only apply to mobile stations with a data facility, tests that only apply to GSM900 or only to GSM1800 or to both). The present document indicates the specific test which should be carried out for each mobile station type.

An active accessory is covered by the present document if it modifies the terminal performance in an aspect which affects conformance to essential requirements.

NOTE 2: Only active devices are subject to the present document. Accessories may be tested with specific terminals, and either approved for use with those terminals only, or may possibly be approved for use with a wider range of terminals, depending on the nature and effect of the accessory.

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 and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- For this Release 4 document, references to GSM documents with numbers of the form "aa.bb" - for example, GSM 02.03 - are for:

Phase 2 (version 4.x.y)

Phase 2+ Release 96 (version 5.x.y)

Phase 2+ Release 97 (version 6.x.y)

Phase 2+ Release 98 (version 7.x.y)

Phase 2+ Release 99 (version 8.x.y)

- And references to GSM documents with numbers of the form "aa.bbb" - for example, 22.003 - are for:

Phase 2+ Release 99 (version 3.x.y)

Phase 2+ Release 4 (version 4.x.y)

Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

- [1] Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (R&TTE Directive).
- [2] ETSI TS 151 010-1 (V4.9.0): "Digital cellular telecommunications system (Phase 2+); Mobile Station (MS) conformance specification; Part 1: Conformance specification (3GPP TS 51.010-1 version 4.9.0 Release 4)".
- [3] ETSI TS 151 010-2 (V4.6.0): "Digital cellular telecommunications system (Phase 2+); Mobile Station (MS) conformance specification; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification (3GPP TS 51.010-2 version 4.6.0 Release 4)".
- [4] ETSI ETS 300 502 (1994): "European digital cellular telecommunications system (Phase 2); Teleservices supported by a GSM Public Land Mobile Network (PLMN) (GSM 02.03)".
- [5] ETSI ETS 300 905 (1998): "Digital cellular telecommunications system (Phase 2+) (GSM); Teleservices supported by a GSM Public Land Mobile Network (PLMN) (GSM 02.03 version 5.3.2)".
- [6] ETSI TS 100 905 (V6.0.0): "Digital cellular telecommunications system (Phase 2+) (GSM); Teleservices supported by a GSM Public Land Mobile Network (PLMN) (GSM 02.03 version 6.0.0 Release 1997)".
- [7] ETSI TS 100 905 (V7.0.0): "Digital cellular telecommunications system (Phase 2+) (GSM); Teleservices supported by a GSM Public Land Mobile Network (PLMN) (GSM 02.03 version 7.0.0 Release 1998)".
- [8] ETSI TS 122 003 (V3.3.0): "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Circuit Teleservices supported by a Public Land Mobile Network (PLMN) (3GPP TS 22.003 version 3.3.0 Release 1999)".

- [9] ETSI TS 122 003 (V4.3.0): "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Circuit Teleservices supported by a Public Land Mobile Network (PLMN) (3GPP TS 22.003 version 4.3.0 Release 4)".
- [10] ETSI EN 301 113 (V6.3.1): "Digital cellular telecommunications system (Phase 2+) (GSM); General Packet Radio Service (GPRS); Service description; Stage 1 (GSM 02.60 version 6.3.1 Release 1997)".
- [11] ETSI TS 101 113 (V7.5.0): "Digital cellular telecommunications system (Phase 2+) (GSM); General Packet Radio Service (GPRS); Service description; Stage 1 (GSM 02.60 version 7.5.0 Release 1998)".
- [12] ETSI TS 122 060 (V3.5.0): "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); General Packet Radio Service (GPRS); Service description; Stage 1 (3GPP TS 22.060 version 3.5.0 Release 1999)".
- [13] ETSI TS 122 060 (V4.4.0): "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); General Packet Radio Service (GPRS); Service description; Stage 1 (3GPP TS 22.060 version 4.4.0 Release 4)".
- [14] ETSI TS 101 349 (V6.13.0): "Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Mobile Station (MS) - Base Station System (BSS) interface; Radio Link Control/Medium Access Control (RLC/MAC) protocol (3GPP TS 04.60 version 6.13.0 Release 1997)".
- [15] ETSI TS 101 349 (V7.10.0): "Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Mobile Station (MS) - Base Station System (BSS) interface; Radio Link Control/ Medium Access Control (RLC/MAC) protocol (3GPP TS 04.60 version 7.10.0 Release 1998)".
- [16] ETSI TS 101 349 (V8.16.0): "Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Mobile Station (MS) - Base Station System (BSS) interface; Radio Link Control/ Medium Access Control (RLC/MAC) protocol (3GPP TS 04.60 version 8.16.0 Release 1999)".
- [17] ETSI TS 144 060 (V4.8.0): "Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Mobile Station (MS) - Base Station System (BSS) interface; Radio Link Control/ Medium Access Control (RLC/MAC) protocol (3GPP TS 44.060 version 4.8.0 Release 4)".
- [18] ETSI TS 100 574 (V4.11.0): "Digital cellular telecommunications system (Phase 2); Multiplexing and Multiple Access on the Radio Path (3GPP TS 05.02 version 4.11.0 GSM Phase 2)".
- [19] ETSI TS 100 908 (V5.10.0): "Digital cellular telecommunications system (Phase 2+); Multiplexing and multiple access on the radio path (3GPP TS 05.02 version 5.10.0 Release 1996)".
- [20] ETSI TS 100 908 (V6.10.0): "Digital cellular telecommunications system (Phase 2+); Multiplexing and multiple access on the radio path (3GPP TS 05.02 version 6.10.0 Release 1997)".
- [21] ETSI TS 100 908 (V7.7.0): "Digital cellular telecommunications system (Phase 2+); Multiplexing and multiple access on the radio path (3GPP TS 05.02 version 7.7.0 Release 1998)".
- [22] ETSI TS 100 908 (V8.10.0): "Digital cellular telecommunications system (Phase 2+); Multiplexing and multiple access on the radio path (3GPP TS 05.02 version 8.10.0 Release 1999)".
- [23] ETSI TS 145 002 (V4.5.0): "Digital cellular telecommunications system (Phase 2+); Multiplexing and multiple access on the radio path (3GPP TS 45.002 version 4.5.0 Release 4)".
- [24] ETSI ETS 300 577 (V4.23.1): "Digital cellular telecommunications system (Phase 2) (GSM); Radio transmission and reception (GSM 05.05 version 4.23.1)".
- [25] ETSI TS 100 910 (V5.13.0): "Digital cellular telecommunications system (Phase 2+) (GSM); Radio transmission and reception (3GPP TS 05.05 version 5.13.0 Release 1996)".

- [26] ETSI TS 100 910 (V6.8.0): "Digital cellular telecommunications system (Phase 2+); Radio Transmission and Reception (3GPP TS 05.05 version 6.8.0 Release 1997)".
- [27] ETSI TS 100 910 (V7.9.0): "Digital cellular telecommunications system (Phase 2+); Radio Transmission and Reception (3GPP TS 05.05 version 7.9.0 Release 1998)".
- [28] ETSI TS 100 910 (V8.14.0): "Digital cellular telecommunications system (Phase 2+); Radio Transmission and Reception (3GPP TS 05.05 version 8.14.0 Release 1999)".
- [29] ETSI TS 145 005 (V4.9.0): "Digital cellular telecommunications system (Phase 2+); Radio transmission and reception (3GPP TS 45.005 version 4.9.0 Release 4)".
- [30] Council Directive 89/336/EEC of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility (EMC Directive).
- [31] Council Directive 73/23/EEC of 19 February 1973 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (LV Directive).
- [32] ETSI EN 301 489 (all parts): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services".
- [33] Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in the R&TTE Directive [1] and the following apply:

environmental profile: Range of environmental conditions under which equipment within the scope of the present document is required to comply with the provisions of the present document.

3.2 Abbreviations

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

MS	Mobile Station which includes a GSM radio part
R&TTE	Radio and Telecommunications Terminal Equipment
RF	Radio Frequency

4 Technical requirements specifications

4.1 Environmental profile

The technical requirements of the present document apply under the environmental profile for operation of the equipment, which shall be declared by the supplier. The equipment shall comply with all the technical requirements of the present document at all times when operating within the boundary limits of the required operational environmental profile.

4.2 Conformance requirements

The present document contains all requirements that are needed for terminals to meet the essential requirement as defined in the Directive 1999/5/EC [1], article 3.2.

- The present document gives normative reference to a sub clause of TS 151 010-1 [2] containing the conformance requirement text, and references to the base standard.

4.2.1 Transmitter - Frequency error and phase error

Refer to clause 13.1 of TS 151 010-1 [2].

4.2.2 Transmitter - Frequency error under multipath and interference conditions

Refer to clause 13.2 of TS 151 010-1 [2].

4.2.3 Transmitter - Frequency error and phase error in HSCSD multislot configuration

Refer to clause 13.6 of TS 151 010-1 [2].

4.2.4 Frequency error and phase error in GPRS multislot configuration

Refer to clause 13.16.1 of TS 151 010-1 [2].

4.2.5 Transmitter output power and burst timing

Refer to clause 13.3 of TS 151 010-1 [2].

4.2.6 Transmitter - Output RF spectrum

Refer to clause 13.4 of TS 151 010-1 [2].

4.2.7 Transmitter output power and burst timing in HSCSD multislot configurations

Refer to clause 13.7 of TS 151 010-1 [2].

4.2.8 Transmitter - Output RF spectrum in HSCSD multislot configuration

Refer to clause 13.8 of TS 151 010-1 [2].

4.2.9 Transmitter - Output RF spectrum for MS supporting the R-GSM frequency band

Refer to clause 13.9 of TS 151 010-1 [2].

4.2.10 Transmitter output power in GPRS multislots configuration

Refer to clause 13.16.2 of TS 151 010-1 [2].

4.2.11 Output RF spectrum in GPRS multislots configuration

Refer to clause 13.16.3 of TS 151 010-1 [2].

4.2.12 Conducted spurious emissions - MS allocated a channel

Refer to clause 12.1.1 of TS 151 010-1 [2].

4.2.13 Conducted spurious emissions - MS in idle mode

Refer to clause 12.1.2 of TS 151 010-1 [2].

4.2.14 Conducted spurious emissions for MS supporting the R-GSM frequency band - MS allocated a channel

Refer to clause 12.3.1 of TS 151 010-1 [2].

4.2.15 Conducted spurious emissions for MS supporting the R-GSM frequency band - MS in idle mode

Refer to clause 12.3.2 of TS 151 010-1 [2].

4.2.16 Radiated spurious emissions - MS allocated a channel

Refer to clause 12.2.1 of TS 151 010-1 [2].

4.2.17 Radiated spurious emissions - MS in idle mode

Refer to clause 12.2.2 of TS 151 010-1 [2].

4.2.18 Radiated spurious emissions for MS supporting the R-GSM frequency band - MS allocated a channel

Refer to clause 12.4.1 of TS 151 010-1 [2].

4.2.19 Radiated spurious emissions for MS supporting the R-GSM frequency band - MS in idle mode

Refer to clause 12.4.2 of TS 151 010-1 [2].

4.2.20 Receiver Blocking and spurious response - speech channels

Refer to clause 14.7.1 of TS 151 010-1 [2].

4.2.21 Receiver Blocking and spurious response - speech channels for MS supporting the R-GSM frequency band

Refer to clause 14.7.3 of TS 151 010-1 [2].

4.2.22 Frequency error and Modulation accuracy in EGPRS Configuration

Refer to clause 13.17.1 of TS 151 010-1 [2].

4.2.23 Frequency error under multipath and interference conditions in EGPRS Configuration

Refer to clause 13.17.2 of TS 151 010-1 [2].

4.2.24 EGPRS Transmitter output power

Refer to clause 13.17.3 of TS 151 010-1 [2].

4.2.25 Output RF spectrum in EGPRS configuration

Refer to clause 13.17.4 of TS 151 010-1 [2].

4.2.26 Blocking and spurious response in EGPRS configuration

Refer to clause 14.18.5 of TS 151 010-1 [2].

5 Testing for compliance with technical requirements

5.1 Environmental conditions for testing

Tests defined in the present document shall be carried out at representative points within the boundary limits of the required operational environmental profile.

Where technical performance varies subject to environmental conditions a sufficient variety of environmental conditions (within the boundary limits of the required operational environmental profile) to give confidence of compliance should be inserted here for the affected technical requirements.

5.2 Essential radio test suites

5.2.1 Transmitter - Frequency error and phase error

Refer to TS 151 010-1 [2], clause 13.1.

5.2.2 Transmitter - Frequency error under multipath and interference conditions

Refer to TS 151 010-1 [2], clause 13.2.

5.2.3 Transmitter - Frequency error and phase error in HSCSD multislots configuration

Refer to TS 151 010-1 [2], clause 13.6.

5.2.4 Frequency error and phase error in GPRS multislots configuration

Refer to TS 151 010-1 [2], clause 13.16.1.

5.2.5 Transmitter output power and burst timing

Refer to TS 151 010-1 [2], clause 13.3.

5.2.6 Transmitter - Output RF spectrum

Refer to TS 151 010-1 [2], clause 13.4.

5.2.7 Transmitter output power and burst timing in HSCSD multislots configurations

Refer to TS 151 010-1 [2], clause 13.7.

5.2.8 Transmitter - Output RF spectrum in HSCSD multislots configuration

Refer to TS 151 010-1 [2], clause 13.8.

5.2.9 Transmitter - Output RF spectrum for MS supporting the R-GSM frequency band

Refer to TS 151 010-1 [2], clause 13.9.

5.2.10 Transmitter output power in GPRS multislots configuration

Refer to TS 151 010-1 [2], clause 13.16.2.

5.2.11 Output RF spectrum in GPRS multislots configuration

Refer to TS 151 010-1 [2], clause 13.16.3.

5.2.12 Conducted spurious emissions - MS allocated a channel

Refer to TS 151 010-1 [2], clause 12.1.1.

5.2.13 Conducted spurious emissions - MS in idle mode

Refer to TS 151 010-1 [2], clause 12.1.2.

5.2.14 Conducted spurious emissions for MS supporting the R-GSM frequency band - MS allocated a channel

Refer to TS 151 010-1 [2], clause 12.3.1.

5.2.15 Conducted spurious emissions for MS supporting the R-GSM frequency band - MS in idle mode

Refer to TS 151 010-1 [2], clause 12.3.2.

5.2.16 Radiated spurious emissions - MS allocated a channel

Refer to TS 151 010-1 [2], clause 12.2.1.

5.2.17 Radiated spurious emissions - MS in idle mode

Refer to TS 151 010-1 [2], clause 12.2.2.

5.2.18 Radiated spurious emissions for MS supporting the R-GSM frequency band - MS allocated a channel

Refer to TS 151 010-1 [2], clause 12.4.1.

5.2.19 Radiated spurious emissions for MS supporting the R-GSM frequency band - MS in idle mode

Refer to TS 151 010-1 [2], clause 12.4.2.

5.2.20 Receiver Blocking and spurious response - speech channels

Refer to TS 151 010-1 [2], clause 14.7.1.

5.2.21 Receiver Blocking and spurious response - speech channels for MS supporting the R-GSM frequency band

Refer to TS 151 010-1 [2], clause 14.7.3.

5.2.22 Frequency error and Modulation accuracy in EGPRS Configuration

Refer to TS 151 010-1 [2], clause 13.17.1.

5.2.23 Frequency error under multipath and interference conditions in EGPRS Configuration

Refer to TS 151 010-1 [2], clause 13.17.2.

5.2.24 EGPRS Transmitter output power

Refer to TS 151 010-1 [2], clause 13.17.3.

5.2.25 Output RF spectrum in EGPRS configuration

Refer to TS 151 010-1 [2], clause 13.17.4.

5.2.26 Blocking and spurious response in EGPRS configuration

Refer to TS 151 010-1 [2], clause 14.18.5.

Annex A (normative): The EN requirements table (EN-RT)

Notwithstanding the provisions of the copyright clause related to the text of the present document, ETSI grants that users of the present document may freely reproduce the EN-RT proforma in this annex so that it can be used for its intended purposes and may further publish the completed EN-RT.

The EN Requirements Table (EN-RT) serves a number of purposes, as follows:

- it provides a tabular summary of all the requirements;
- it shows the status of each EN-R, whether it is essential to implement in all circumstances (Mandatory), or whether the requirement is dependent on the supplier having chosen to support a particular optional service or functionality (Optional). In particular it enables the EN-Rs associated with a particular optional service or functionality to be grouped and identified;
- when completed in respect of a particular equipment it provides a means to undertake the static assessment of conformity with the EN.

The EN-RT is placed in an annex of the EN in order that it may be photocopied and used as a proforma.

Table A.1: EN Requirements Table (EN-RT)

EN Reference		EN 301 511			TS 151 010-1 Clause
No.	Reference	EN-R (note)	Status	Supported	
1	4.2.1	Transmitter - Frequency error and phase error	M		13.1
2	4.2.2	Transmitter - Frequency error under multipath and interference conditions	M		13.2
3	4.2.3	Transmitter - Frequency error and phase error in HSCSD multislot configuration	C5		13.6
4	4.2.4	Frequency error and phase error in GPRS multislot configuration	C6		13.16.1
5	4.2.5	Transmitter output power and burst timing	M		13.3
6	4.2.6	Transmitter - Output RF spectrum	C2		13.4
7	4.2.7	Transmitter output power and burst timing in HSCSD multislot configurations	C5		13.7
8	4.2.8	Transmitter - Output RF spectrum in HSCSD multislot configuration	C5		13.8
9	4.2.9	Transmitter - Output RF spectrum for MS supporting the R-GSM frequency band	C4		13.9
10	4.2.10	Transmitter output power in GPRS multislot configuration	C6		13.16.2
11	4.2.11	Output RF spectrum in GPRS multislot configuration	C6		13.16.3
12	4.2.12	Conducted spurious emissions - MS allocated a channel	C1		12.1.1
13	4.2.13	Conducted spurious emissions - MS in idle mode	C1		12.1.2
14	4.2.14	Conducted spurious emissions for MS supporting the R-GSM frequency band - MS allocated a channel	C3		12.3.1
15	4.2.15	Conducted spurious emissions for MS supporting the R-GSM frequency band - MS in idle mode	C3		12.3.2
16	4.2.16	Radiated spurious emissions - MS allocated a channel	C2		12.2.1

EN Reference		EN 301 511			TS 151 010-1 Clause
No.	Reference	EN-R (note)	Status	Supported	
17	4.2.17	Radiated spurious emissions - MS in idle mode	C2		12.2.2
18	4.2.18	Radiated spurious emissions for MS supporting the R-GSM frequency band - MS allocated a channel	C4		12.4.1
19	4.2.19	Radiated spurious emissions for MS supporting the R-GSM frequency band - MS in idle mode	C4		12.4.2
20	4.2.20	Receiver Blocking and spurious response - speech channels	C7		14.7.1
21	4.2.21	Receiver Blocking and spurious response - speech channels for MS supporting the R-GSM frequency band	C8		14.7.3
22	4.2.22	Frequency error and Modulation accuracy in EGPRS Configuration	C10		13.17.1
23	4.2.23	Frequency error under multipath and interference conditions in EGPRS Configuration	C9		13.17.2
24	4.2.24	EGPRS Transmitter output power	C10		13.17.3
25	4.2.25	Output RF spectrum in EGPRS configuration	C10		13.17.4
26	4.2.26	Blocking and spurious response in EGPRS configuration	C9		14.18.5

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

C1	IF NOT A.2/2 AND A.3/2 THEN M ELSE N/A	-- NOT Type_R-GSM AND TSPC_AddInfo_PermAntenna
C2	IF NOT A.2/2 THEN M ELSE N/A	-- NOT Type_R-GSM
C3	IF A.2/2 AND A.3/2 THEN M ELSE N/A	-- Type_R-GSM AND TSPC_AddInfo_PermAntenna
C4	IF A.2/2 THEN M ELSE N/A	-- Type_R-GSM
C5	IF A.2/1 THEN M ELSE N/A	-- Type_HSCSD_Multislot
C6	IF A.2/3 THEN M ELSE N/A	-- Type_GPRS_Multislot_uplink
C7	IF NOT A.2/2 AND A.3/1 THEN M ELSE N/A	-- NOT Type_R-GSM AND TSPC_Serv_TS11
C8	IF A.2/2 AND A.3/1 THEN M ELSE N/A	-- Type_R-GSM AND TSPC_Serv_TS11
C9	IF A.2/4 THEN M ELSE N/A	Type_EGPRS
C10	IF A.2/5 THEN M ELSE N/A	Type_EGPRS_8PSK_uplink

Key to columns:

No Table entry number;

Reference Clause reference number of conformance requirement within the present document;

EN-R Title of conformance requirement within the present document;

Status Status of the entry as follows:

- M Mandatory, shall be implemented under all circumstances;
- O Optional, may be provided, but if provided shall be implemented in accordance with the requirements;
- O.<n> this status is used for mutually exclusive or selectable options among a set. The integer "n" shall refer to a unique group of options within the EN-RT. A footnote to the EN-RT shall explicitly state what the requirement is for each numbered group. For example, "It is mandatory to support at least one of these options", or, "It is mandatory to support exactly one of these options".
- C<n> Conditional number <n>. Reference is made to a Boolean expression under the table with predicates of support answers, which will resolve to either "M", "X", "N", or "O.<n>" for a specific implementation. In all cases "ELSE Not Applicable" is implied, if an ELSE expression is omitted. Expressions such as A.x/y refer to item "y" in table A.x.

N/A Not applicable.

X Excluded or Prohibited.

Only the requirements necessary to determinate the applicability of the test cases have been included in this clause.

A.1 Type of Mobile Stations

Table A.2: Type of Mobile Station

Item	Type of Mobile Station	Ref.	Status	Support	Mnemonic
1	HSCSD Multislot MS	TS 100 908 [19] to [22], clause B.1; TS 145 002 [23], clause B.1	O		Type_HSCSD_Multislot
2	R-GSM MS	TS 100 910 [25] to [28], clause 2; TS 145 005 [29], clause 2	O		Type_R-GSM
3	Support of GPRS Multislot class on the uplink	TS 100 908 [20] to [22], clause B.1; TS 145 002 [23], clause B.1	O		Type_GPRS_Multislot_uplink
4	EGPRS	TS 122 060 [12] and [13]	O		Type_EGPRS
5	EGPRS capable of 8PSK in Uplink, of all Multislot classes	TS 101 349 [16], clause 11.2.5a; TS 144 060 [17], clause 11.2.5a	O		Type_EGPRS_8PSK_uplink

A.2 Additional Information

Table A.3: Additional information

Item	Additional Information	Ref.	Status	Support	Mnemonic
1	Telephony.	ETS 300 905 [5], clause A.1.1; TS 100 905 [6] and [7], clause A.1.1; TS 122 003 [8] and [9], clause A.1.1	O		TSPC_Serv_TS11
2	Permanent Antenna Connector.	TS 151 010-1 [2], clauses 12.1.1 and 12.1.2	O		TSPC_AddInfo_PermAntenna

Annex B (informative): The EN title in the official languages

Language	EN title
Danish	Globalt System for Mobilkommunikation (GSM); Harmoniseret EN for mobilterminaler i GSM 900 og GSM 1800 frekvensbåndene omfattende essentielle krav i R&TTE direktivets artikel 3.2
Dutch	Wereldwijd Systeem voor Mobiele communicatie (GSM); Geharmoniseerde EN voor mobiele apparatuur in de GSM 900 en GSM 1800 frequentiebanden ter afdekking van de essentiële voorwaarden onder artikel 3.2 van de R&TTE richtlijn
English	Global System for Mobile communications (GSM); Harmonized EN for mobile stations in the GSM 900 and GSM 1800 bands covering essential requirements under article 3.2 of the R&TTE directive (1999/5/EC)
Finnish	Maaailman laajuinen systeemi matkapuhelin viestintään (GSM); Tärkeät vaatimuksen artiklan 3.2 R&TTE direktiivin mukaan GSM 900 ja GSM 1800 taajuisten matkapuhelinten harmonisoituun EN
French	Système global de communications mobiles (GSM); EN harmonisée pour les stations mobiles dans les bandes GSM 900 et GSM 1800, et couvrant les exigences essentielles de l'article 3.2 de la Directive R&TTE (1999/5/EC)
German	Globales System für mobile Kommunikation (GSM); Harmonisierter EN für Mobiltelefone im GSM 900 und GSM 1800 Band zur Erfüllung der minimalen Anforderungen von Artikel 3.2 der R&TTE Direktive
Greek	Παγκόσμιο σύστημα κινητής τηλεπικοινωνίας (GSM); Αρμονισμένο πρότυπο για κινητούς σταθμούς στις GSM 900 και GSM 1800 ζώνες συχνοτήτων που καλύπτουν ουσιώδεις απαιτήσεις μέσω του άρθρου 3.2 των R&TTE οδηγιών
Italian	Sistemi globali per la comunicazione mobile (GSM); EN armonizzata relativa ai requisiti essenziali sotto l'articolo 3.2 della direttiva R&TTE (1999/5/EC) per stazioni mobili nella banda GSM 900 e GSM 1800
Portuguese	Sistema global de comunicações móveis (GSM); EN harmonizada para estações base das faixas GSM 900 e GSM 1800, cobrindo os requisitos essenciais no âmbito do artigo 3.2 da Directiva R&TTE (1999/5/EC)
Spanish	Sistema Global para comunicaciones Móviles (GSM); EN armonizado para estaciones móviles en las bandas GSM 900 y GSM 1800 cubriendo requisitos esenciales según el artículo 3.2 de la directiva de R&TTE (1999/5/EC)
Swedish	Globalt system för mobila kommunikationer (GSM); Harmoniserad EN för mobila stationer i banden GSM 900 och GSM 1800 omfattande väsentliga krav enligt artikel 3.2 i R&TTE-direktivet (1999/5/EC)

Annex C (informative): Change history

Date	Version	Comments
February 99	1.0.0	Presented at SMG #28 for information
August 99	1.0.1	Changes approved at SMG7 #22
September 99	1.1.0	Adapted to R&TTE Steering Committee HS proforma
January 00	1.1.1	Selection of test cases for Phase 2. Addition of sections for Phase 2+. Phase 2+ test cases are for further study
February 00	1.1.5	Editorial reorganisation to comply with proforma and with latest proforma sentences by STF 149
April 00	1.1.6	References update and editorial modifications
May 00	1.1.7	Edited during SMG7#25
June 00	1.1.8	Electronically approved by SMG7
June 00	2.0.0	Presented for approval at SMG #32
June 00	7.0.0	Approved at SMG #32
December 00	7.0.1	Update to Version 7.0.1 for Publication
September 02	9.0.0	Update to Version 9.0.0 for MSG Approval. All requirements up to and including Rel-4 requirements are included
October 02	9.0.2	Approval at MSG #5

History

Document history		
V7.0.1	December 2000	Publication
V9.0.2	November 2002	One-step Approval Procedure OAP 20030314: 2002-11-13 to 2003-03-14
V9.0.2	March 2003	Publication