

**Electromagnetic compatibility  
and Radio spectrum Matters (ERM);  
Guidance for drafting an  
ETSI System Reference document (SRdoc)**

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**Reference**

REG/ERM-RM-056

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**Keywords**

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## Intellectual Property Rights

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

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

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## Foreword

This ETSI Guide (EG) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).

An "empty SRdoc" (Empty Draft ETSI TR 10WXYZ Vmab\_asm\_v211.doc) is contained in eg\_201788v020101p0.zip which accompanies the present document.

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## Introduction

As shown in the history box, the present document has been initially published as a TR.

The present version of this guide is expected to be used together with the "empty SRdoc".

The empty SRdoc is attached to the present document in order to help potential users.

The present document has been produced in cooperation with CEPT/ECC and its subordinate bodies.

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# 1 Scope

The present document contains guidance for drafting a system reference document which is intended to be used initially for internal coordination within ETSI and subsequently, in particular, for co-operation with the Electronic Communications Committee (ECC) of the European Conference of Post and Telecommunications Administrations (CEPT), under the Memorandum of Understanding between ECC and ETSI.

The present document is applicable to all ETSI Technical Bodies producing deliverables affecting radio frequencies.

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## 2 References

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.
- Non-specific reference may be made only to a complete document or a part thereof and only in the following cases:
  - if it is accepted that it will be possible to use all future changes of the referenced document for the purposes of the referring document;
  - for informative references.

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

NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

### 2.1 Normative references

The following referenced documents are indispensable for the application of the present document. For dated references, only the edition cited applies. For non-specific references, the latest edition of the referenced document (including any amendments) applies.

Not applicable.

### 2.2 Informative references

The following referenced documents are not essential to the use of the present document but they assist the user with regard to a particular subject area. For non-specific references, the latest version of the referenced document (including any amendments) applies.

- [i.1] CEPT/ERC/Recommendation 74-01E: "Unwanted Emissions in the Spurious Domain".
- [i.2] ERC Report 25: "The European table of frequency allocations and utilizations in the frequency range 9 kHz to 3000 GHz".
- [i.3] ITU Radio Regulations.
- [i.4] ECC-ETSI MoU (version of April 2004).
- [i.5] RSPG Opinion on "Streamlining the regulatory environment for the use of spectrum", document RSPG 08-246.
- [i.6] CEPT/ERC/Recommendation (02)05: "Unwanted Emissions".

[i.7] EG 201 788 (V1.2.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Guidance for drafting an ETSI System Reference Document".

## 3 Symbols and abbreviations

### 3.1 Symbols

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

a.s.m	Designates the prepublication version number of a deliverable
m.a.b	Designates the target version number of a deliverable for publication
n	Represents a number, used for the numbering of the parts in a deliverable
N	Represents a number, used for the numbering of annexes in a deliverable
< >	Indicates that text should be inserted in accordance with the instructions given within the brackets
[ ]	Indicates that the text in square brackets is optional (square brackets are also used to identify references)
	Indicates that the text on the left and the right of this symbol is to be used on an "or"-basis
{ }	Indicates the beginning and the end of text to be processed as indicated above

### 3.2 Abbreviations

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

CEPT	European Conference of Post and Telecommunications Administrations
EC	European Commission
ECC	Electronic Communications Committee
ITU	International Telecommunications Union
RSCom	Radio Spectrum Committee
SRdoc	System Reference document
TC-ERM	Electromagnetic compatibility and Radio spectrum Matters Technical Committee
WG ERM-RM	ERM Working Group Radio Matters
WG FM	Working Group Frequency Management

## 4 Purpose of System Reference documents

A "System Reference document" (SRdoc) is usually produced in support of any new system, service or application, in particular when a change of the present frequency designation / utilization within the EU or the CEPT or a change in the present regulatory framework for the proposed band(s) regarding either wanted or unwanted emissions is needed.

SRdocs can also be prepared in order to help users understanding the concepts relating to a particular standard, even in cases where a SRdoc would not be required for frequency coordination purposes.

NOTE 1: The ECC-ETSI MoU [i.4] provides the relationship between the two organizations in relation to these issues:

- "The ECC will also have to develop guidance on the related regulatory conditions (e.g. spectrum sharing criteria) for the proposed ETSI deliverable".

And also:

- "Each party shall inform the other if, during the development of its deliverable, it comes to the conclusion that, in order to fulfil the objectives of the deliverable, it has to reconsider the initial working assumptions, e.g. taking account of conclusions of spectrum compatibility studies. Both parties shall in this case reconsider whether a renewed agreement can be achieved".

NOTE 2: In addition chapter 5.8 of the RSPG Opinion [i.5], also addresses the relationship between ECC and ETSI regarding the sharing and compatibility studies and their implications.

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## 5 Phases of System Reference documents

ETSI has been using a phased release approach for the drafts of SRdocs, in order to provide ECC with early information. This implies a very clear understanding of the status of the versions released during each phase by all parties involved.

Initially three stages had been proposed:

- Stage 1: a statement is sent to CEPT indicating that a proposal had been received (and that ETSI will perform an internal co-ordination procedure).
- Stage 2: the original proposal together with an assembled set of comments from individual ETSI members following the internal consultation round is available (noting that ETSI intends to discuss these comments with a view to providing consolidated text).
- Stage 3: a stable document indicating the (possibly modified) spectrum proposal and a statement of additional views put forward by different ETSI members is available.

However, it has been shown that it is more practical to adapt the various phases of a particular SRdoc to the situations on an ad-hoc basis. Several versions of a SRdoc may also be made available within a particular stage, as a result of the completion of different steps during one particular stage. Hence the importance of the status and of the version number of each document. See clause 7.5 and annex A, in particular clause A2.

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## 6 Deliverable type

The type of deliverable to be used in the case of a System Reference document is an ETSI Technical Report (TR).

The ETSI Drafting Rules apply. Guidance on the formatting of a TR can be obtained from the ETSI Secretariat (<http://portal.etsi.org/edithelp>).

As an example, see also the "empty SRdoc" (Empty Draft ETSI TR 10WXYZ Vmab\_asm\_v211.doc) that is contained in the file eg\_201788v020101p0.zip which accompanies the present document.

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## 7 Contents of the System Reference document

The following clauses refer, when possible to the appropriate clauses of the [draft] SRdoc itself.

### 7.1 Title Page

The title should be:

*"Electromagnetic compatibility and Radio spectrum Matters (ERM); System Reference document;  
<Name of radio system> [; Part <n>: Part element of title]"*.

### 7.2 Foreword

This clause should include the following text:

*"This Technical Report (TR) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM)".*

*See the ETSI Drafting Rules for other permitted elements.*



## 7.3 Executive summary

This clause should be a 1-2 page **executive summary** of the document. If the document contains alternative viewpoints, this can be reflected using the following form of words: "The proponents believe...". "Other members of ETSI believe...".

## 7.4 Introduction

This clause should include the following text:

*"The present document has been developed { to support the co-operation between ETSI and the Electronic Communications Committee (ECC) of the European Conference of Post and Telecommunications Administrations (CEPT) | for internal reference within ETSI }".*

*See the ETSI Drafting Rules for other permitted elements.*

## 7.5 Status of pre-approval draft

Since System Reference documents are frequently circulated before their final approval by ETSI, each System Reference document will contain a statement of its approval status in the Introduction. The following text is recommended:

*"The present document was developed by <proponents | name of Technical Body or Task Group of ERM>*

*[and approved by ERM [RM] at its <number> meeting, <date>] |*

*[The information in it has not yet undergone coordination by ERM [RM]] |*

*[It contains <preliminary | stable > information.>]."*

According to the format given in EG 201 788 (V1.2.1) [i.7], such information used to be located in clause 4.1 of SRdocs.

This clause includes also a table providing a history of the pre-approval draft versions.

## 7.6 "1 Scope"

This clause should include the following text:

*"The present document describes <name of radio system>*

*{<which may require a change of the present frequency designation / utilization within the EU or CEPT>*

*| <which may require a change in the present regulatory framework for the proposed band(s) regarding either wanted or unwanted emissions>}.*

*It includes in particular:*

- *Market information;*
- *Technical information [including expected sharing and compatibility issues] Note: The information on sharing and compatibility studies is required when new spectrum or new spectrum usage is requested.*
- *Regulatory issues.*

## 7.7 "2 References"

This clause should include the appropriate references in line with the ETSI Drafting Rules.

## 7.8 "3 Definitions, symbols and abbreviations"

Where possible, definitions from the ITU Radio Regulations [i.3] should be used. If there is not a definition in the ITU Radio Regulations [i.3], wherever possible, existing definitions in the ETSI TEDDI should be used rather than creating new ones (see Decision D-OCG 21/3).

## 7.9 "4 [Comments on the System Reference document]"

Add here possible difficulties encountered (e.g. reservations on this SRdoc and corresponding reasons). This clause does not need to be filled systematically; the aim is to provide to CEPT-ECC (and/or the EC), as far as possible, a consolidated document, achieved as the result of a consensus between all ETSI members.

Please, note that in accordance with the formats used in previous version 1.2.1 [i.7] of the present document, clause 4.1 used to contain the Status of the document. This information is now to be found, in accordance with the present format, in a particular clause, in the Introduction.

### 7.9.1 "4.1 [Statements by ETSI Members]"

ETSI members are entitled to include a statement at this point in the document, if their concerns cannot be included elsewhere. Such statements should be clearly attributable to the ETSI member(s) making these statements. However, members are encouraged to try to reflect alternative viewpoints within the body of the document.

## 7.10 "5 Presentation of the system or technology"

This clause may include high level information such as system description, applications, new technology (if any).

## 7.11 "6 Market information"

To be offered by the proponents of the system. This clause should include the market size and value, traffic and equipment density forecasts and timing. This information should be accurate enough for possible sharing and compatibility studies to provide meaningful results. This information may also play a role in the more general discussions.

ETSI members making comments should endeavour to reach consensus amongst themselves, to minimize the number of comments. If consensus cannot be reached on a clause, then it is divided into two sections: one for the proponents and one for comments on the text of the proponents. Such statements should be clearly attributable to the ETSI member(s) making these statements.

## 7.12 "7 Technical information"

ETSI members making comments should endeavour to reach consensus amongst themselves, to minimize the number of comments. If consensus cannot be reached on a clause, then it is divided into two sections: one for the proponents and one for comments on the text of the proponents. Such statements should be clearly attributable to the ETSI member(s) making these statements.

### 7.12.1 "7.1 Detailed technical description"

Include references if appropriate.

### 7.12.2 "7.2 Technical parameters and implications on spectrum"

The list of technical parameters should be sufficiently complete to enable sharing and compatibility studies, if required, to be carried out by CEPT.

### 7.12.2.1 "7.2.1 Status of technical parameters"

#### 7.12.2.1.1 "7.2.1.1 Current ITU and European Common Allocations"

To be completed by the Rapporteur and/or ETSI ERM [RM].

EFIS, which is managed by ERO (pointer), ERC Report 25 [i.2], usually contain the necessary information.

#### 7.12.2.1.2 "7.2.1.2 Sharing and compatibility studies (if any) already available"

This clause should list any sharing and compatibility studies that have been conducted on, or are relevant to, the system (and corresponding assumptions, if any) and which have already been used in the derivation of the technical parameters. These may be used by CEPT for their sharing and compatibility studies. To be completed by ERM [RM] and the appropriate ETSI Technical { Body | Bodies }.

#### 7.12.2.1.3 "7.2.1.3 Sharing and compatibility issues still to be considered"

Include here information concerning foreseen sharing and compatibility issues (and corresponding assumptions, if any) together with Parameters concerning the Victims, when available. Parameters of Victims could also be detailed in (a) separate clause(s).

### 7.12.2.2 "7.2.2 Transmitter parameters"

#### 7.12.2.2.1 "7.2.2.1 Transmitter Output Power / Radiated Power"

Include the transmission mask, the adjacent channel power, power control, the spectral power density, and any restrictions imposed by regulations (ITU-R or CEPT) and the relevant antenna parameters (in particular, when an integral antenna is used).

#### 7.12.2.2.2 "7.2.2.2 Antenna Characteristics"

Include the radiation pattern envelope mask and antenna gain plus any other relevant antenna parameters.

#### 7.12.2.2.3 "7.2.2.3 Operating Frequency"

Preferably give several options of frequency bands and/or tuning ranges, so that CEPT/ECC-WG FM can choose the most suitable ones. Include frequency accuracy and stability and the tuning range of the equipment.

#### 7.12.2.2.4 "7.2.2.4 Bandwidth"

Include the necessary bandwidth and occupied bandwidth (as defined by articles 1.152 and 1.153 of the ITU Radio Regulations [i.3] and using the limits defined in CEPT/ERC/Recommendation 74-01E [i.1] plus CEPT/ERC/Recommendation (02) 05 [i.6]).

#### 7.12.2.2.5 "7.2.2.5 Unwanted emissions"

Include the spurious emissions and the out-of-band emissions (as defined by the Article 1.146 of the ITU Radio Regulations [i.3] and using the limits defined in CEPT/ERC/Recommendation 74-01E [i.1]).

#### 7.12.2.2.6 "7.2.2 <x> <Parameter>"

Include information concerning the appropriate parameter(s).

### 7.12.2.3 "7.2.3 Receiver parameters"

Include sensitivity, selectivity, intermodulation, co-channel rejection and blocking.

#### 7.12.2.4 "7.2.4 Channel access parameters"

Include parameters such as duty cycle, and parameters defining Listen Before Talk and/or frequency agility.

#### 7.12.3 "7.3 Information on relevant standard(s) "

Information can be given here over current or future standards, including the development of ETSI Harmonized Standards. Such information may include any publicly available standard and is not restricted to ETSI deliverables.

### 7.13 "8 Radio spectrum request and justification"

This clause should include information on how much radio spectrum, which frequencies are preferred and the justification for these preferences. It should also indicate the rationale for a need for dedicated harmonized spectrum or if a tuning range approach would also be acceptable.

### 7.14 "9 Regulations"

In this clause the term "regulation" should be taken in its broadest sense.

#### 7.14.1 "9.1 Current regulations"

Include, in particular, ITU, EC and ECC applicable regulations (see also annexes B and C).

#### 7.14.2 "9.2 Proposed regulation and justification"

Consider proposing as open as possible options for frequencies (see clause 7.12.2.2.3) and how to use them, to give EC and ECC flexibility when the frequency designation for new systems and applications is being considered.

### 7.15 "Annex <N> Bibliography"

The bibliography is the last annex of the SRdoc. See ETSI Drafting Rules, clause 17.

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## Annex A: Survival guide for drafting/updating SRdocs

Internal consistency and accuracy of the various versions of the SRdocs are of prime importance, as SRdocs are expected to be used, in particular outside ETSI, even in early stages of their development (this is a consequence of the phased approach which is now currently used).

Experience shows that the "Status" of a SRdoc and its version number are critical aspects.

Version numbers of SRdocs are composed of two parts, in order to make sure that version numbers are unique and that there are not two drafts having different contents and nevertheless exhibiting the same version number (or file name) :

- the three leftmost numbers (<m.a.b>) correspond to the target version number of the document at publication, as defined by the ETSI Directives, usually "1.1.1" the first time a particular document is published (it appears on the front page, and the font Arial 20 is used for the 3 corresponding digits);
- the three rightmost numbers (<a.s.m>, as defined below in clause A.2) identify a particular version of the draft of the SRdoc; they are managed by the ETSI TBs and are usually "0.0.1" for the very first draft corresponding to a given target version number (<a.s.m> appears on the front page, using the font Arial 16);
- the 2 fields defined above are separated by an underscore ("\_").
- at the time of publication of the present document, the "complete version number" (i.e. <m.a.b>\_<a.s.m>) is automatically copied into the header of each page when using the skeleton documents (i.e. templates) made available by ETSI for the various ETSI deliverables.

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### A.1 Check list

Before sending out a new draft, editors are advised to check, in particular, the following points:

- Version number found on the front page.
- Version number in the table found in "Status of pre-approval draft" and in the History box (last page).
- Date of the document (found on the front page).
- "Status" and "Comments" clauses (and, in particular, relations with dates and version numbers).
- Table of contents to be rebuilt (if necessary).
- When using WORD™ under "Files|Properties" there may also be fields to be checked for consistency with the items above.

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### A.2 Further details concerning the management of the <a.s.m> field

In order to make sure that version numbers are unique and that there are not two drafts having different contents and the same <a.s.m> field (i.e. the identification of each version of a draft) a, s and m are defined as follows:

- a identifies the approval stage of the draft
- (0 = draft not approved yet at any level
  - 2 = draft for TC approval
  - 3 = draft approved by the TC for publication)

NOTE:  $a = 1$  it is to be used in order to show that the draft has already been approved at some level (e.g. at some level within the TG structure). It has not been defined precisely intentionally, as this definition would depend heavily on the actual organization of the subordinated bodies within the TC.

s identifies changes in the structure of the document and other major changes.

m is updated at each technical and/or editorial change.

It is incremented at each minor change.

Rule: an increment of s resets m.

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## Annex B: ECC deliverables available

In order to offer further guidance to the "originating bodies", it can be noted that among the ECC deliverables are:

- ECC RECommendations; and
- ECC DECisions.

ECC DECisions are expected to be implemented before a particular date (stated explicitly in the DECision itself) by the Countries that have declared their commitment to implement them.

ECC RECommendations are not supported by any commitment of the CEPT member Countries or by implementation dates.

At the time of publication of the present document, published ECC deliverables can be found in the ERO web site. See:

- <http://www.erodocdb.dk>.

The ERO has been trying to increase visibility concerning implementations by the various CEPT member countries.

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## Annex C: EC regulations used in the context of frequency management

In order to offer further guidance to the "originating bodies", it can be noted that among the EC regulations used in the context of frequency management are:

- EC Decisions.

EC Decisions are expected to be implemented before a particular date (stated explicitly in the EC Decision itself) by the various EU Member States. Typically EC Decisions are approved by the RSCoM following a mandate to CEPT to study that particular topic.

At the time of publication of the present document, published EC Decisions can be found in EC websites such as the site of DG Information Society (for RSCoM). See:

- [http://ec.europa.eu/information\\_society/policy/ecom/radio\\_spectrum/documents/index\\_en.htm](http://ec.europa.eu/information_society/policy/ecom/radio_spectrum/documents/index_en.htm).



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## History

<b>Document history</b>		
V1.1.1	March 2000	Publication as TR 101 788
V1.2.1	May 2001	Publication as TR 101 788 (Historical)
V1.1.1	September 2001	Publication
V1.2.1	February 2007	Publication
V2.1.1	June 2009	Membership Approval Procedure MV 20090821: 2009-06-23 to 2009-08-21
V2.1.1	August 2009	Publication