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

Reference

REG/ERM-RM-282

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Foreword

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

Modal verbs terminology

In the present document "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Introduction

As shown in the history box, the present document has been initially published as an ETSI Technical Report (TR).

The present version of this guide is expected to be used together with the ETSI TR skeleton that can be found at the ETSI portal on the skeleton page (<https://portal.etsi.org/Services/editHelp/Standards-development/Drafting/Skeletons>).

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

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 related to radio frequencies.

2 References

2.1 Normative references

Normative references are not applicable in the present document.

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

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

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] [ERC Recommendation 74-01](#): "Unwanted Emissions in the Spurious Domain".
- [i.2] [ERC Report 25](#): "The European table of frequency allocations and applications in the frequency range 8.3 kHz to 3000 GHz (ECA table)".
- [i.3] ITU Radio Regulations.
- [i.4] ECC-ETSI MoU (version of May 2016).
- [i.5] RSPG Opinion on "Streamlining the regulatory environment for the use of spectrum", document RSPG 08-246.
- [i.6] [ECC Recommendation \(02\)05](#): "Unwanted Emissions".

3 Definition of terms, symbols and abbreviations

3.1 Terms

Void.

3.2 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 |
| < > | 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 |

3.3 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 |
| ECO | European Communications Office |
| EFIS | ECO Frequency Information System |
| ERC | Electronic Radiocommunications Committee |
| EU | European Union |
| ITU | International Telecommunications Union |
| MoU | Memorandum of Understanding |
| RSCoM | Radio Spectrum Committee |
| RSPG | Radio Spectrum Policy Group |
| SRdoc | System Reference document |
| TR | Technical Report |
| 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.

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 A.2.

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 following clauses refer, when possible, to the appropriate clauses of the TR skeleton.

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

7 Contents of the System Reference document

7.1 Executive summary

This clause should be a 1 to 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 [i.e. ...] believe...*".

7.2 "Introduction" Status of pre-approval draft

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

"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 .

The present document was developed by <proponents | name of Technical Body or Task Group of ERM> [and approved by ERM at its <number> meeting, <date>]. <The information in it has [not yet] undergone coordination by ERM | It contains <preliminary | final> information>.

| Target version | Pre-approval date version (see note) | | | Date | Description |
|----------------|---|---|---|------|-------------|
| Vm.a.b | a | s | m | | |
| | | | | | |
| | | | | | |
| | | | | | |

NOTE: See clause A.2.

".

7.3 "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."*

7.4 "3 Definition of terms, symbols and abbreviations"

Where possible, definitions from the ITU Radio Regulations [i.3] should be used. If there is not a term in the ITU Radio Regulations [i.3], wherever possible, existing definitions in the ETSI TEDDI should be used rather than creating new ones.

7.5 "4 [Comments by ETSI Members on the System Reference document]"

Add in clause 4, 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 interested 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.

7.6 "5 Presentation of the system or technology"

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

7.7 "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.

7.8 "7 Technical information"

7.8.0 General

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.

7.8.1 "7.1 Detailed technical description"

Include references if appropriate.

7.8.2 "7.2 Technical parameters and implications on spectrum"

7.8.2.0 General

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

7.8.2.1 "7.2.1 Status of technical parameters"

7.8.2.1.1 "7.2.1.1 Current ITU and European Common Allocations"

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

The ECO Frequency Information System ([EFIS](#)), which is managed by ECO, ERC Report 25 [i.2], usually contain the necessary information.

7.8.2.1.2 "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 ETSI ERM and the appropriate ETSI Technical { Body | Bodies }.

7.8.2.1.3 "7.2.1.3 Sharing and compatibility issues still to be considered"

Include in clause 7.2.1.3 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).

7.8.2.2 "7.2.2 Transmitter parameters"

7.8.2.2.1 "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).

7.8.2.2.2 "7.2.2.2 Antenna Characteristics"

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

7.8.2.2.3 "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.

7.8.2.2.4 "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 ERC Recommendation 74-01 [i.1] plus ECC Recommendation (02)05 [i.6]).

7.8.2.2.5 "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 ERC Recommendation 74-01 [i.1]).

7.8.2.2.6 "7.2.2 <x> <Parameter>"

Include information concerning the appropriate parameter(s).

7.8.2.3 "7.2.3 Receiver parameters"

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

7.8.2.4 "7.2.4 Channel access parameters"

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

7.8.3 "7.3 Information on relevant standard(s)"

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

7.9 "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 harmonised spectrum or if a tuning range approach would also be acceptable.

7.10 "9 Regulations"

7.10.0 General

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

7.10.1 "9.1 Current regulations"

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

7.10.2 "9.2 Proposed regulation and justification"

Consider proposing as open as possible options for frequencies (see clause 7.8.2.2.3) and how to use them, to give EC and ECC flexibility when the frequency designation for new systems and applications is being considered.

Annex A: Survival guide for drafting/updating SRdocs

A.0 Introduction

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);
- 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 WI rapporteur 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);
- the 2 fields defined above are separated by an underscore ("_").

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.

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.

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 CEPT web site. See <https://docdb.cept.org/>.

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 at the following EC website:

- <https://digital-strategy.ec.europa.eu/en/library/radio-spectrum-decisions>.

History

| Document history | | |
|-------------------------|----------------|--|
| V1.1.1 | March 2000 | Publication as ETSI TR 101 788 |
| V1.2.1 | May 2001 | Publication as ETSI TR 101 788 (Historical) |
| V1.1.1 | September 2001 | Publication |
| V1.2.1 | February 2007 | Publication |
| V2.1.1 | August 2009 | Publication |
| V2.2.0 | November 2024 | Membership Approval Procedure MV 20250107: 2024-11-08 to 2025-01-07 |
| V2.2.1 | January 2025 | Publication |