CEPT ECC
Electronic Communications Committee

ECC Report 180

Guidance on the interpretation of the requirements of ECC/DEC/(01)03 on EFIS

Approved September 2012

0 EXECUTIVE SUMMARY

This ECC Report provides guidance on the interpretation of the ECC/DEC/(01)03 [1] requirements. It provides assistance to administrations to implement this ECC Decision and to upload data to the EFIS database, in similar and comparable ways.

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Annex 1 informs about requirements under ECC/DEC/(01)03 Annex 3 [1] for the national radio interface information

Annex 2 contains the Radio Interface Specifications (RIS) template skeleton for National Radio Interfaces with which the EFIS database system is compatible.

Annex 3 informs about requirements under ECC/DEC/(01)03 Annex 4 [1] for the right of use information.

Annex 4 provides the list of Electronic Communications Services (ECS) frequency bands.

Annex 5 provides guidance on licensing information type documents.

Annex 6 provides the tables showing the mapping of the application grouping in the spectrum inventory section with the EFIS layer 1 and 2 terminology.

Annex 7 provides a list of the CEPT, ECC and EC deliverables which include definitions for the application terminology used in EFIS and ECA (European Common Allocations) for radio services and applications.

Annex 8 contains the list of references.

The Report highlights demonstrations of how administrations have fulfilled the implementation of the ECC/DEC/(01)03 [1]. The requirements of the EC Decision 2007/344/EC [2], applicable to EU Member States, in particular concerning the RIS information and the right of use information are also mentioned in relevant annexes of the present Report.

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LIST OF ABBREVIATIONS

Abbreviation	Explanation
CEPT	European Conference of Postal and Telecommunications Administrations
CRAF	Committee on Radio Astronomy Frequencies
DTD	Document Type Definition
EC	European Commission
ECA	European Common Allocation
ECC	Electronic Communications Committee
ECO	European Communications Office
ECS	European Committee for Standardization
EESS	Earth Exploration-satellite Service
EFIS	European Frequency information System
ERM	ETSI Technical Committee EMC and Radio Spectrum Matters
ETSI	European Telecommunications Standards Institute
EU	European Union
ISO	International Organization for Standardization
ITU	International Telecommunication Union
LoU	Letter of Understanding
MoU	Memorandum of Understanding
PAMR	Public Access Mobile Radio
PMR	Private Mobil Radio, Professional Mobile Radio
PMSE	Programme Making and Special Events
PPDR	Public Protection and Disaster Relief
RSCOM	Radio Spectrum Committee- Consulting Inc. designs, develops and maintains custom software programs for a wide cross section of industries
R&TTE	Radio Equipment and Telecommunications Terminal Equipment
RIS templates	Guide for usage of Radio Interface Specifications template within the ECC
RR	Radio Regulation
SRD	Short Range Devices
SWEFT	SWEFT tools proposed to make writing software faster better and automatic
TCAM	Telecommunications Conformity Assessment and Market Surveillance Committee
TRA-ECS	Terrestrial Radio Applications Capable of Providing Electronic Communications
WG FM	Working Group Frequency Management

1 INTRODUCTION

On 31 January 2002 the ERO (now ECO) launched a new online frequency information system called EFIS. EFIS is available to the public on the Internet either via the ECO website or directly under www.efis.dk.

EFIS contributes to the CEPT policy objectives of harmonisation and transparency of information in spectrum rights and usage. The RSPG Opinion on Spectrum Review [24] highlights the role of EFIS in the context of the European Union policy objectives laid down in the Decision of the Council and European Parliament on Radio Spectrum Policy (article 9 of Decision 243/2012/EU of the European Parliament and of the Council [22]).

In 2005, the European Commission issued a mandate to CEPT on the feasibility for EFIS to develop into a European portal for spectrum information. The response from CEPT is given in CEPT Report 11 [3].

ECC developed and updated ECC/DEC/(01)03 [1] taking into account evolution of the European regulatory framework.

Based on the CEPT Report 11 [23] responding to the above EC mandate, EC Decision 2007/344/EC [2] on harmonised availability of information regarding spectrum use within the European Community was published on the 16th of May 2007 and entered into force on 1st January 2008. In accordance with this EC Decision, EU Member States shall upload data into EFIS about the use of radio spectrum on their territory.

CEPT administrations upload information on regulatory framework in force: the national table of frequency allocations, national application plans, national radio interfaces, and right of use information, and, when and where relevant, on future usage of spectrum. This ECC report provides additional background information to ensure that administrations upload information in EFIS according to the same approach. A better harmonisation improves the visibility, for example, on spectrum usage comparisons and how the spectrum is used by various sectors either private or public.

EFIS is a unique and central source of information in Europe on spectrum usage and is regularly updated by the CEPT administrations (at least twice a year).

With EFIS, ECO, with the support of CEPT administrations supplying data, aims at providing a valuable service to all parties with an interest in spectrum rights and usage.

In EFIS you can search for and compare spectrum utilisation across Europe (allocations, applications, radio interfaces) and find related information such as documents about CEPT activities and national or international regulations. One major issue is that various terms attached to allocations, applications, radio interfaces and right of use should have the same interpretations among CEPT members in order to ensure a harmonised upload of information in the database. The following sections and information in the annexes to the present report provide information on this issue.

EFIS is an information tool, not a legally binding instrument. Although all is being done to ensure that the data contained in EFIS is valid and up-to-date, ECO cannot be held responsible for any incorrect information contained in EFIS.

As of August 2012, 42 CEPT countries have an account in the EFIS database.

By end of 2011, ECO merged EFIS and ECA (the European table of Frequency Allocations and Applications in the frequency range 9 kHz to 3 000 GHz) and launched a new software release for EFIS accordingly. The interaction between EFIS and ECA is clarified in the relevant section of this report. ECA established a strategic framework for the utilisation of the radio spectrum in Europe.

2 DEMONSTRATIONS SHOWING HOW REQUIREMENTS CAN BE FULFILLED

While allocations and designated applications are comprehensively uploaded into the EFIS database, some discrepancies exist in the comments sections. There are some differences in the level of information provided by the administrations in the national radio interface and right of use sections. This report provides some possible explanations and ways for improvements.

2.1 ALLOCATIONS

Allocations provide information on the regulatory status of a given frequency band.

EFIS only accepts allocations from the list of services used by ITU Radio Regulations (RR) (see Annex 1 of the ECC/DEC/(01)03 [1]). Only these allocations are valid and can be selected by administrations.

Regarding the allocations with additions, only those combinations of the annexed list are allowed, with the disadvantage that this list is to be updated if necessary. The list in Table 1 reflects all currently used radio communication services and their additions used in the EFIS database.

The list is updated by the ECO after a WRC.

- Rights in a given frequency band identified by the RR (and also in the ECA table) could be "split" differently at national level in relevant sub bands. Various radiocommunications services may share same frequency bands. Multiple allocations could be foreseen in such context in a given band.

Within Section "comments", administrations are invited to enter additional regulatory information relevant to the allocation:

- Administrative body in charge (this can be in relation to the spectrum management organisation at national level such as civil/military organisational split);
- Relevant RR footnotes;
- International Agreement or Treaty in force (other than RR);

Table 1: Layer 1 to 3 structure in EFIS in the allocations

Layer 1	Layer 2	Layer 3
Amateur		
Amateur-Satellite		
Broadcasting		
Broadcasting-Satellite		
Earth Exploration-Satellite	Earth Exploration-Satellite (active) Earth Exploration-Satellite (passive) **Meteorological-Satellite**	
Fixed		
Fixed-Satellite		
Inter-Satellite		
Mobile	Aeronautical Mobile Land Mobile Maritime Mobile Mobile (distress and safety) Mobile (distress and calling) Mobile (distress, safety and calling) Mobile except aeronautical mobile Mobile except aeronautical mobile (R)	Aeronautical Mobile (R) Aeronautical Mobile (OR) Maritime Mobile (distress and safety) Maritime Mobile (distress and calling) Maritime Mobile (distress, safety and calling) Maritime Mobile (distress and calling via DSC)

Layer 1	Layer 2	Layer 3
Mobile-Satellite	**Aeronautical Mobile-Satellite** **Land Mobile-Satellite** **Maritime Mobile-Satellite** **Mobile-satellite except aeronautical mobile-satellite** **Mobile-satellite except aeronautical mobile-satellite (R)**	**Aeronautical Mobile-Satellite (R)** **Aeronautical Mobile-Satellite (OR)**
Meteorological Aids		
Radio Astronomy		
Radiodetermination	Radionavigation Radiolocation	Aeronautical Radionavigation Maritime Radionavigation Maritime Radionavigation (radiobeacons)
Radiodetermination-Satellite	**Radionavigation-Satellite** **Radiolocation-Satellite**	**Aeronautical Radionavigation-Satellite** **Maritime Radionavigation-Satellite**
Space Operation		Space Operation (satellite identification)
Space Research	Space Research (active) **Space Research (deep space)** Space Research (passive)	
Standard Frequency and Time Signal		
Standard Frequency and Time Signal-Satellite		

Note:

For bolded services it is possible to give additions/attributes (space-to-Earth, Earth-to-space, space-to-space). An alphabetical list of services with all additions as used in the EFIS database, and existing combinations of additions/attributes for allocations is provided below.

Table 2: LIST OF ALL RADIOCOMMUNICATION SERVICES WITH ADDITIONS USED IN THE EFIS Database

Radiocommunication service:	Addition:
Aeronautical mobile	(R)
Aeronautical mobile	(OR)
Amateur-satellite	(Earth-to-space)
Amateur-satellite	(space-to-Earth)
Earth exploration-satellite	(Earth-to-space)
Earth exploration-satellite	(space-to-Earth)
Earth exploration-satellite	(Earth-to-space) (space-to-space)
Earth exploration-satellite	(space-to-Earth) (space-to-space)
Earth exploration-satellite	(active)
Earth exploration-satellite	(passive)
Fixed-satellite	(Earth-to-space)
Fixed-satellite	(space-to-Earth)
Fixed-satellite	(Earth-to-space) (space-to-Earth)
Fixed-satellite	(space-to-Earth) (Earth-to-space)
Maritime mobile	(distress and calling via DSC)
Maritime mobile	(distress and calling)
Maritime radionavigation	(radiobeacons)
Meteorological-satellite	(Earth-to-space)
Meteorological-satellite	(space-to-Earth)
Mobile	except aeronautical mobile
Mobile	except aeronautical mobile (R)
Mobile	(distress and calling)
Mobile-satellite	(Earth-to-space)
Mobile-satellite	(space-to-Earth)
Mobile-satellite	except aeronautical mobile-satellite (Earth-to-space)

Radiocommunication service:	Addition:
Radiodetermination-satellite	(Earth-to-space)
Radiodetermination-satellite	(space-to-Earth)
Radiolocation-satellite	(Earth-to-space)
Radionavigation-satellite	(Earth-to-space)
Radionavigation-satellite	(space-to-Earth) (space-to-space)
Space operation	(satellite identification)
Space operation	(Earth-to-space)
Space operation	(space-to-Earth)
Space operation	(Earth-to-space) (space-to-space)
Space operation	(space-to-Earth) (space-to-space)
Space research	(Earth-to-space)
Space research	(space-to-Earth)
Space research	(space-to-space)
Space research	(deep space)
Space research	(Earth-to-space) (space-to-space)
Space research	(space-to-Earth) (space-to-space)
Space research	(deep space) (Earth-to-space)
Space research	(deep space) (space-to-Earth)
Space research	(active)
Space research	(passive)
Standard frequency and time signal	(20 kHz)
Standard frequency and time signal	(2 500 kHz)
Standard frequency and time signal	(5 000 kHz)
Standard frequency and time signal	(10 000 kHz)
Standard frequency and time signal	(15 000 kHz)
Standard frequency and time signal	(20 000 kHz)

Radiocommunication service:	Addition:
Standard frequency and time signal	(25 000 kHz)
Standard frequency and time signal-satellite	(400.1 MHz)
Standard frequency and time signal-satellite	(Earth-to-space)
Standard frequency and time signal-satellite	(space-to-Earth)

Users of the database can select for searches and comparisons a term from each of the layers, either from a flat selection panel or from structured windows selection through layers 1, 2, or 3. Selection of an allocation term in Layer 1 will include in the results also the information for which a Layer 2 or 3 allocations under this Layer 1 term is used. This is valid for the search function as well as for comparisons amongst several countries.

2.2 APPLICATIONS

The objective of the application section is to provide visibility on the usage of a given frequency band. Various applications could share the same frequency band.

CEPT administrations upload relevant usage information in accordance to the applications structured in Layers 1, 2 and 3 of the Annex 2 of the ECC Decision (01)03 [1].

This 3 layers approach is to give administrations a possibility of depth of information about applications used in a frequency band and give the search a structure for finding all applications used within frequency bands.

The idea behind is that the administrations have the possibility, where no detailed information is available or there are existing national restrictions (e.g. military frequency applications) for detailed information, to decide themselves about the detailed depth of application information (Layer 1, 2 or 3) they will publish in the EFIS system.

Where such information is available, administrations should always try to provide application information at Layer 3 level of detail in EFIS. Layer 1 applications and definitions are broad in scope, and Layers 2 and 3 narrow down the scope to be used for searches and comparisons. For example, the Layer 1 application “Land Mobile” does not differentiate between public cellular services and private mobile radio, which tend to use spectrum in a very different way and are generally subject to quite different licensing processes. On the other hand, adopting the Layer 2 application definitions would result in over 80 separate categories, making analysis of the data difficult, particularly with regard to comparing utilisation across different bands with similar applications.

Layer two provides most commonly used terms that are also used in ECC deliverables and act often as ‘umbrella terms’ or major categories for a lot of similar applications. Typical examples are PPDR, PMSE, PMR/PAMR.

Layer 3 provides better visibility on the application which is authorised in a given band. Various applications could share the same frequency band.

Terminologies of applications listed in Layers 1, 2 and 3.

In order to ensure the same understanding of the definition of applications listed in the Layers, a listing of the documents and their relation to application terms is given in Annex 9 of this report. The applications terminology originates from ECC deliverables where the application terms are used. The same terms are also used in the ECA table. The definitions are therefore found in the applicable ECC deliverables and these deliverables are indicated in the list of searchable applications (Annex 2 of the

ECC/DEC/(01)03 [1], and also in the editor's manual). Administrations are encouraged to follow the terminology which is also used in the ECA table to the maximum extent possible in order to avoid any ambiguity, for administrations with uploaded information in the database, but also for any external users of the database. It should be noted that the application terms in ECA are used in the RIS templates too, which are also found in the EFIS database.

Search & comparisons

Users of the database can select a term for searches and comparisons from each of the layers, either from a flat selection panel or from structured windows selection through the layer 1,2, or 3. Selection of an application term in Layer 1 will include in the results also the information for which a Layer 2 or 3 applications under this term is used.

Example to describe the result of a search (update):

Table 3: Maritime

Layer 1 term Maritime is given; the search result will include all entries available in the database of layers 1 to 3		
Maritime		
Maritime	GMDSS	
Maritime	GMDSS	DSC
Maritime	GMDSS	EPIRBs
Maritime	GMDSS	MSI
Maritime	GMDSS	NAVTEX
Maritime	GMDSS	SAR (communications)
Maritime	Satellite navigation systems	
Maritime	Satellite navigation systems	GALILEO
Maritime	Satellite navigation systems	GPS
Maritime	Satellite navigation systems	GLONASS
Maritime	Maritime communications	
Maritime	Maritime communications	AIS
Maritime	Maritime communications	Inland waterway communications
Maritime	Maritime communications	INMARSAT
Maritime	Maritime communications	On-board communications
Maritime	Maritime communications	
Maritime	Maritime navigation	
Maritime	Maritime navigation	Beacons (maritime)
Maritime	Maritime navigation	Inland waterway radar
Maritime	Maritime navigation	Loran C
Maritime	Maritime navigation	Maritime radar
Maritime	Maritime navigation	SAR (navigation)
Maritime	Maritime navigation	RTE

Some Layer 2 and Layer 3 terms are included under more than one Layer 1 term.

Administrations have the freedom to include information about PMSE for example under the Broadcasting or the Land mobile application. This takes into account that some administrations have PMSE in some frequency ranges under the Broadcasting service allocation and some have categorised PMSE applications under the Land mobile application for frequency ranges where both service radio allocations are given. It is also the case, that such PMSE applications are used by broadcasting services for generating programmes as well as other users. Therefore, this approach gives administrations full flexibility in such cases of having a term in several upper layer categories. Searches after PMSE in EFIS will however show all the results, so that no information will be overlooked.

However, in some cases, in particular for military, securities and enforcement agencies, to use Layer 3 may not always be possible and administrations may need to use Layer 1 or 2 information. In these cases Layer 3 is not used and stays empty. Some guidance on where this might be appropriate is listed below.

Reasons of national security

Certain information relating to the use of frequencies used for military, security services and enforcement agencies may not be available due to national security or other confidential considerations. In these cases administrations should look towards providing Layer 1 or 2 information where this is already publicly available.

Information not held by the administration

EFIS should be based on the non-confidential information that the CEPT administrations have in their records. For some administrations spectrum has been allocated to applications on a Layer 2 basis and rights holders can use any Layer 3 service under the provision of their licence. In these instances, it is therefore appropriate only to use the Layer 2 application as the administration has no accurate information on what Layer 3 applications are in use.

Use of any or all layers

The use of any or all layers is not problematic for the EFIS system and does not lead to malfunction of the system. The EFIS system is able to generate information independent of its availability in one single layer or in all layers combined.

The example in figure 1 shows the result of a comparison of national tables in EFIS (and incl ECA) for the Layer 3 terms ‘Medical implants’. It can be seen from the results that Denmark has used the Layer 3 term, whereas Croatia and Austria have not supplied the same level of detail; they have used parent terms, Layer 2 (Active medical implants) and Layer 3 (Short Range Devices) respectively. EFIS, however, displays occurrences of the immediate parent term of the term specified where there is no Layer 3 information, and of the Layer 1 term, where there is no Layer 2 term specified.

Figure 1: Comparison of national application entries

TRA-ECS:

TRA-ECS (Terrestrial radio applications capable of providing electronic communications services) describes a regulatory status. It can be applied in principle to all terrestrial applications in a given frequency band.

TRA-ECS is relative to particular rights granted in a given frequency band. The comment field should be used to provide the typical application that is currently used, planned to be used or mainly used in the respective frequency band when available and as far as possible. When using TRA-ECS as application, administrations should provide information in the "comments" field, as otherwise the usage of this frequency band is not identified. The EFIS application terms should be used in the "comments" field in order to facilitate search. The TRA-ECS term should always be used in combination with one ECA or national frequency range. A broad application of the term TRA-ECS over several consecutive frequency ranges should not be done.

The related studies in the ECC and resulting documentation can also be indicated in the comment field to describe the real application in the band.

However, it is to be noted that the usage of the comments field is not mandatory in the EFIS system. Nevertheless, without usage information in the comments field there is no visibility on the usage of the band and the mapping to the spectrum inventory category (see example in annex 6) remains also unclear.

Consequently the search for applications in the EFIS system will be extended to the comment field to find all applications used.

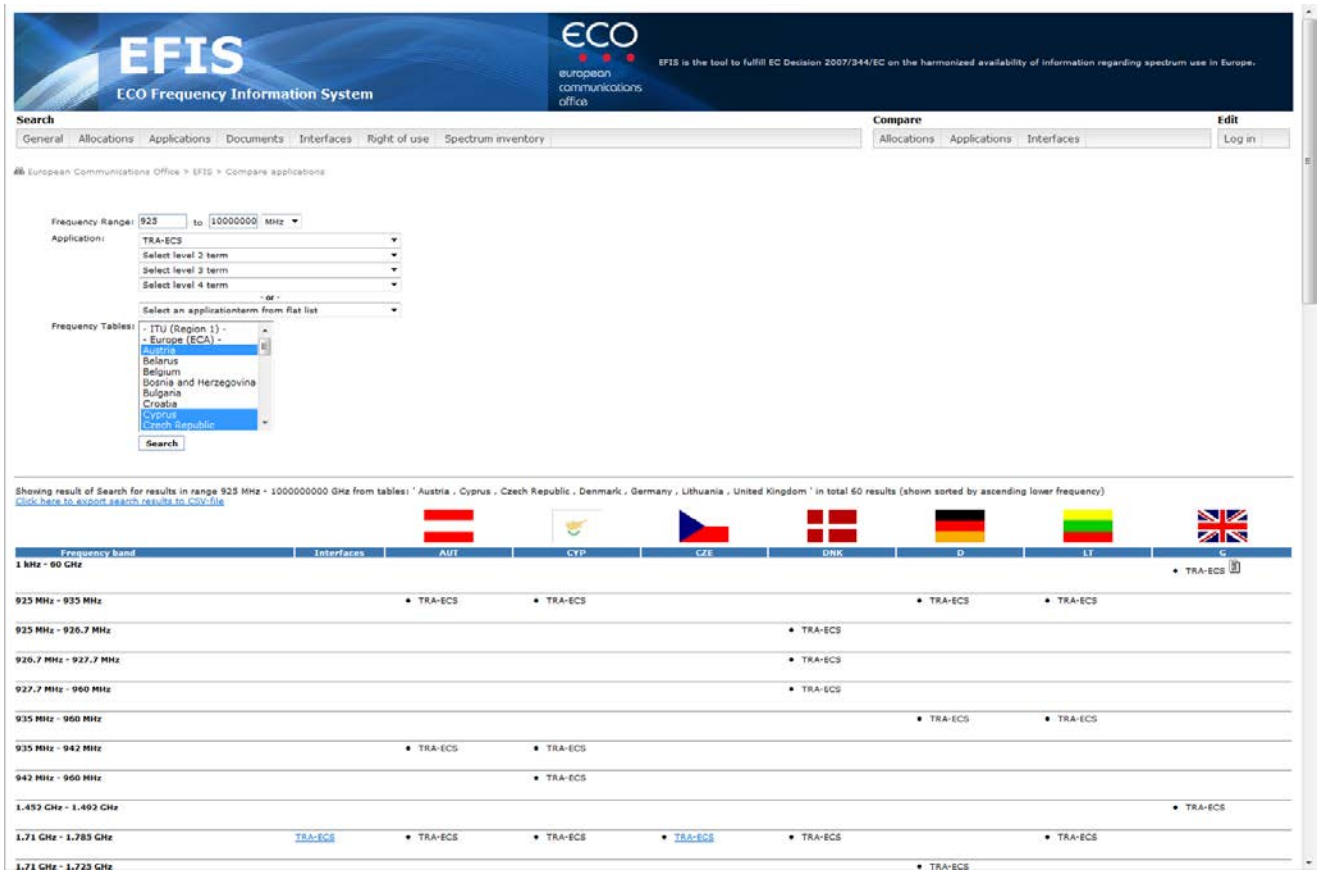


Figure 2: TRA-ECS

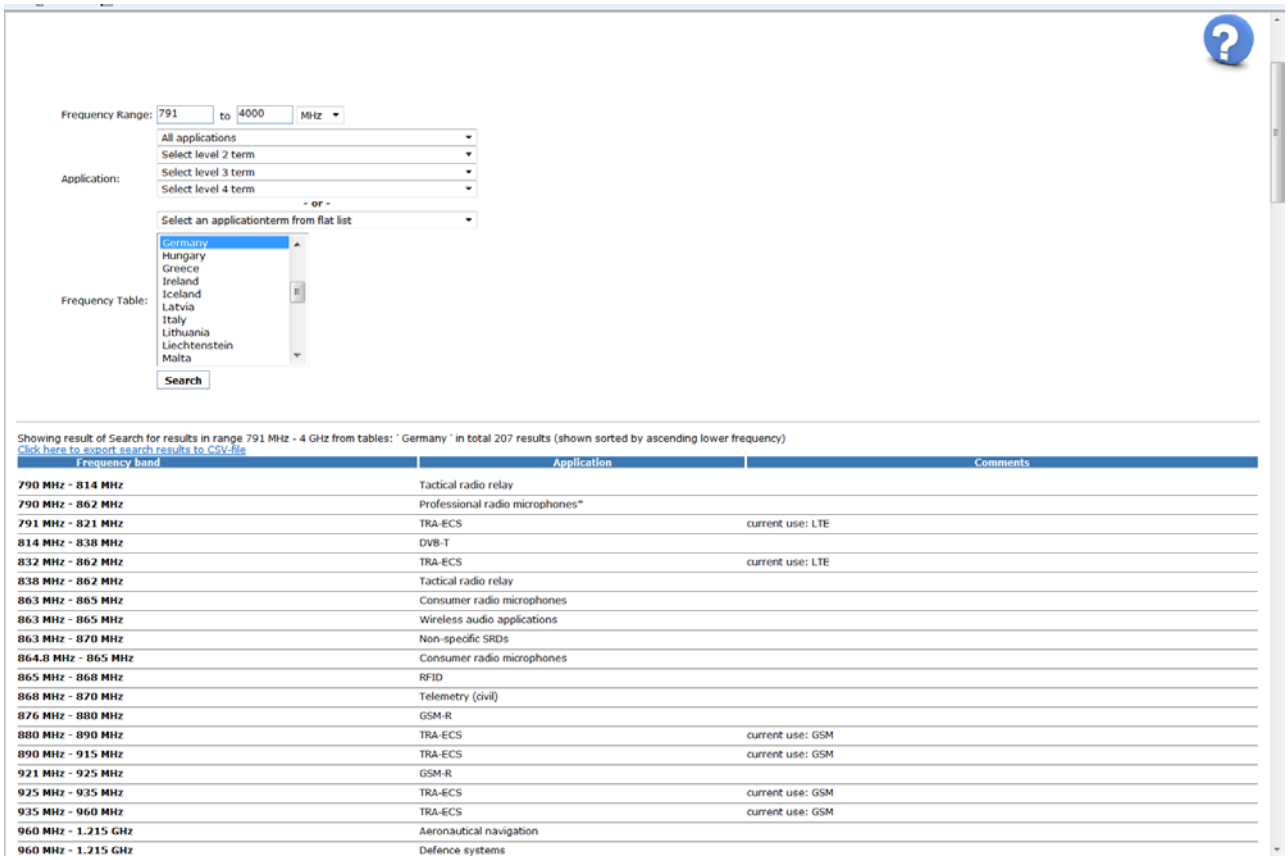


Figure 3: Usage of the comments field to describe TRA-ECS application

Comments for applications can contain:

- Current use: *application term1, application term2,* …(term2 if used by various apps)
- Main use: *application term1, application term2,* …
- Planned use: *application term1, application term2,* …
- Text “application term in the future”
- Text “application term will be phased out”.

A comparison of the actual usage of the application terminology reveals that the administrations in the great majority of cases provide the Layer 3 term. As an example, one can select and compare all countries for a specific maritime or SRD application, and the result in general shows that the Layer 3 terms are used in the vast majority of cases. Sometimes, however, the ‘umbrella’ terms are used, i.e. in these cases the Layer 1 or 2 terminology. In many of these individual cases, this will not lead to “in availability” of information because the related documentation in the EFIS database (EC, CEPT, ECC/ERC deliverables, standards, RIS models and R&TTE equipment subclasses, but also spectrum inventory information) will normally include sufficient information to explain the usage of the frequency band.

2.3 NATIONAL RADIO INTERFACE INFORMATION

For the EU Member States the Annex 1 of the EC Decision defines normative requirements for the information on National Radio Interface Specifications.

The most efficient way to provide national radio interface data to the EFIS system is to make reference to the frequency harmonisation measure, i.e. ECC and/or EC deliverables, and to the applicable Harmonised European Standard since in the vast majority of cases, the national frequency utilisation does not deviate from the requirements stipulated in these documents. After the merger of the ECA information into the EFIS database and the implementation of a new document category for EC Decisions, all relevant information is included in the EFIS database for such cases.

It is also going to be possible to attach illustrations, e.g. a more descriptive document or figure, to a national radio interface with a link to the national home page. Possible exceptions for CEPT administrations where the EU Member States should fill in all the normative fields as contained in Annex 1 of the EC Decision are described in Annex 3 of the present document.

The differences in the numbers of available radio interfaces in EFIS amongst countries simply arise from the grouping and packaging of different user categories (e.g. in PMR) in an application or grouping of frequency bands in one and the same application.

2.3.1 RIS model

The EFIS database system is compatible with the RIS template skeleton / TCAM RIG II template for National Radio Interfaces (see template in Annex 3) and National Radio Interfaces are also translated in all EU languages when being notified to the EU commission.

In June 2010, the European Commission submitted to ECC a request to implement a radio interface model developed by TCAM and RSCOM (ECC(08)38) [21]. ECC launched a trial period in order to develop relevant models implementing this radio interface model. Results of this trial period are contained in an internal ECC Report on implementation of the RIS template, Annex 3 to doc RA(11)086, September 2011 [4].

This information on radio interface is complementary information on the regulatory sides and provides visibility on requirements applicable in a given band. This RIS is only available in few frequency bands.

Nevertheless, in the context of the Spectrum Decision, the European Commission does intend to follow the spirit of the RIS model and will aim to use the relevant fields (parameter descriptions) from the template when developing spectrum Decisions.

ECC develops RIS models where appropriate and relevant. One of the aims of the RIS model is to provide “ready to use” radio interfaces that administration can adapt to update the EFIS database with comments and explanation.

The ECC is developing RIS models in order to ensure that upload of information is done on an harmonised basis. The prime aim of developing RIS implementations within CEPT is precisely to facilitate the work of administrations when declaring into EFIS their new radio interfaces.

The RIS models are available in EFIS under the document type ‘RIS Models’. These RIS model implementations shall be in accordance with the “Guide for usage of Radio Interface Specifications template within the ECC”, which is available on the Office website. The RIS model implementations in EFIS are validated by (checking for compliance with the Guide) the EFIS/MG and adopted by ECC WG FM after the initial trial period ended in December 2011. Due to the change of the ECC structure end 2011, the work of validating the implementation provided by the ECC entities (responsible for the

drafting of RIS model deliverables in relation with ECC Decision) will be carried out within the EFIS/MG (with the support of the entity which drafted the initial deliverable).

Should national administrations find it difficult to create certain national radio interfaces or have questions related to the subject, they can approach the ECO or the EFIS/MG for assistance. It is also always a good idea to have a look in the EFIS database, how other administrations have solved the issue of filling the differently data fields with information.

Below is a screenshot showing the result of a search for RIS model documents in EFIS (these are uploaded by ECO and linked to the ECA table).

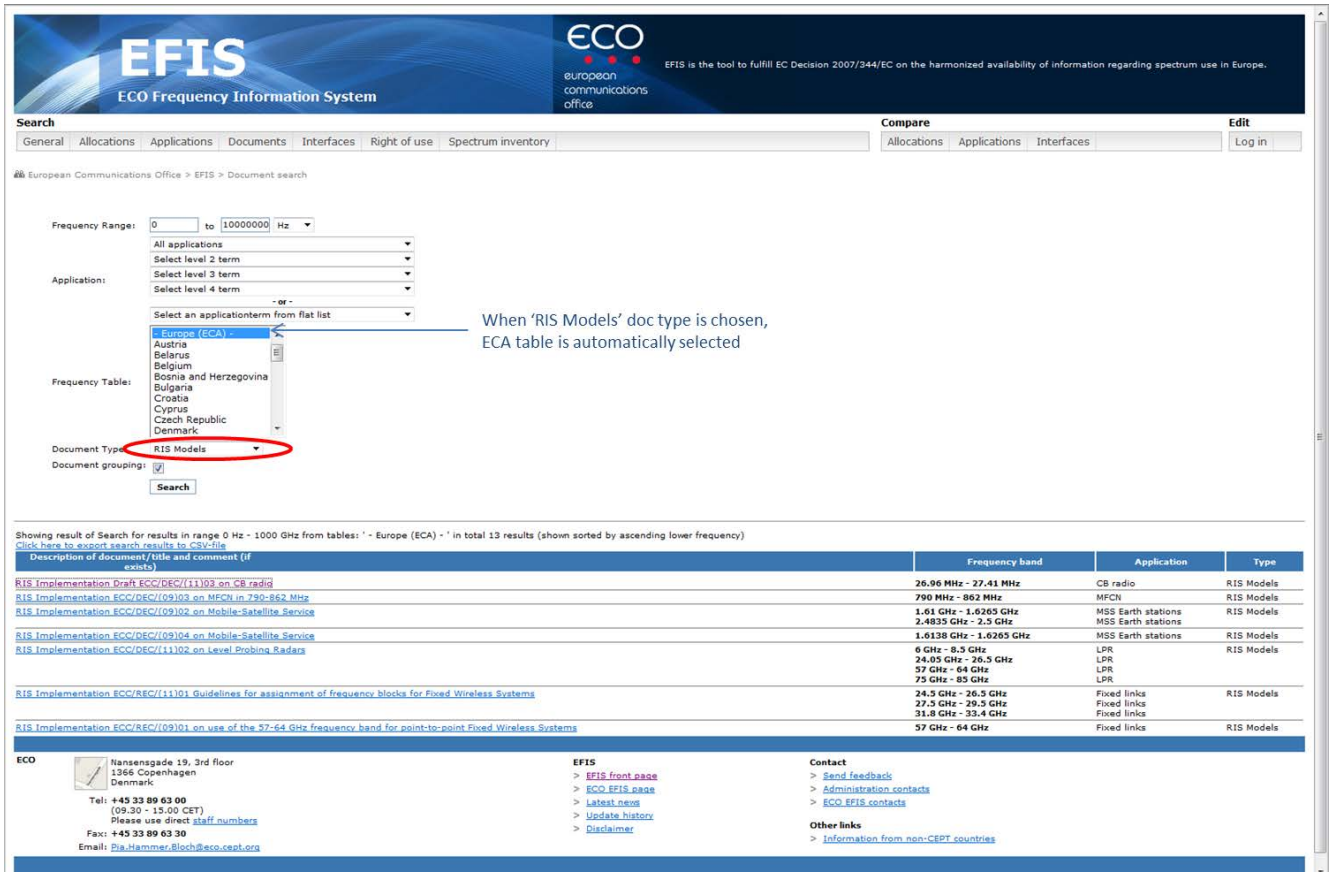


Figure 4: Example of RIS Models

The RIS model format is identical with the format used in TCAM for the R&TTE Directive 99/5/EC [14] Class1 equipment sub-classes. EFIS provides also the R&TTE Class 1 equipment information in the RIS format, i.e. RIS models and Class 1 equipment subclasses are available in EFIS and can be searched for in the database according to frequency range and/or application.

Discrepancies appear between CEPT administrations regarding the availability of national radio interfaces due to national organisations in spectrum management.

2.3.2 How to upload information

There are two possibilities to import national radio interface information into EFIS. It can be done manually or by using the XML data exchange format. The latter is recommended since it is a much more efficient way of entering information. For XML data exchanges there are two possibilities: the SWEFT tool which is available free of charge from the ECO, or the use of export functions from national database information/systems converting data into the XML data exchange format needed for the EFIS database system.

The EFIS harmonised XML interface can be used for uploading data to or downloading data from EFIS.

The interface is an XML file with a defined structure, called the EFIS XML Format, which is defined by the Document Type Definition (DTD) given in Annex 5 of the ECC/DEC/(01)03 [1].

Note: This DTD will be updated shortly to reflect a change in the EFIS XML file format.

The terms used for allocations and applications shall be taken from the List of Radio Services in the ITU RR (see Annex 1 of ECC/DEC/(01)03 [1]) and the list of searchable applications (see Annex 2 of the ECC/DEC/(01)03 [1]).

Additional assistance and information is given in the EFIS editor's manual.

2.4 RIGHT OF USE INFORMATION

ECC/DEC/(01)03 [1] invites CEPT administrations to provide information on right of use. Annex 2 of the EC Decision requires EU Member States administrations to provide information on ECS services which are tradable or were awarded by through competitive or comparative selection procedures. Most administrations provide rights of use in EFIS for those ECS bands covered under the WAPECS approach (see Annex 4 with the list of ECS frequency bands). These bands have major economic interest or significance. However, other bands are not excluded. Outside ECS, availability of information depends of organisation of spectrum management at national level. For example, In case of governmental usage of spectrum, another governmental body than the civil national regulatory authority is often responsible for administering the spectrum used exclusively by governmental users. Some details of the rights-of-use in these cases may not be publicly available and are only available at the national level. Such usage may also be not limited to a defined duration.

The level of information will depend of the type of usage (either governmental, civil or shared).

According to Annex 2 of the EC Decision 2007/344/EC [2] it is only mandatory to provide information regarding:

<< Information on Rights of Use may be limited to frequency bands used for the provision of electronic communications services, which are tradable in accordance with Article 9.3 of Directive 2002/21/EC [11] or which are granted through competitive or comparative selection procedures pursuant to Directive 2002/20/EC [10].>> This information on radio spectrum Rights of Use that may be tradable is a complementary information on the regulatory status. This information is not relevant in a context of existing actual usage of spectrum

Trading of the rights of use of radio spectrum is not harmonised in Europe except where mentioned in RSPP for the WAPECS bands for EU Member States. The authorisation regime depends also on the national approach: For example, some countries apply general authorisation for PMSE in UHF bands, others individual authorisations. As a result of this, the right of use information provided in EFIS can differ from one administration to another and the information in EFIS can be less detailed than the information held by the national administrations,

In addition to the ECS bands, some administrations have also made a number of other allocations tradable. In some cases these are high volume, but with lower economic value/interest than the ECS bands and covering technologies such as PMR and Fixed. Given the volume and nature of these services two emerging examples how to provide information on these services via EFIS are described below.

Example 1: Right of Use information regarding all tradable spectrum in a country

from Denmark:

- As of May 2011 Denmark has uploaded information about all individual licences. There are more than 22,000 licences provided to the EFIS system on a data set-by-data set basis, i.e. more than 22,000 entries.

from the United Kingdom:

Administrations can provide links to the national database in EFIS.

- The United Kingdom provides in EFIS the link to the national Wireless Telegraphy Register (http://spectruminfo.ofcom.org.uk/spectrumInfo/licences) that contains information on the UK's 90,000 tradable licences. The advantage of this solution is that it provides more detailed information and functionality. For example, one could search after licence types (i.e. applications) or in a specific geographical area. In addition the database is updated daily.

Example 2: Right of Use information regarding spectrum granted through a comparative or competitive process

from Sweden:

- Sweden provides information on all licences granted through a comparative or competitive process. The advantage of this solution is that it is easy to recognise in EFIS those licences that have significant economic value. These are typically the most interesting for spectrum trading.

Both examples demonstrate how the requirements from ECC/DEC/(01)03 [1] and Annex 2 of the EC Decision 2007/344/EC [2] could be interpreted in different ways.

It is of great benefit to all users of EFIS, in the case of right of use information most notably industry, but also other users, that the information available in EFIS is as detailed and complete (and up-to date) as possible. It is therefore of importance that administrations do their utmost to ensure that EFIS contains the relevant data, as available to them. In this context administrations are strongly encouraged to actually upload information in EFIS.

The effort of each single administration depends on how the information is available. If the information is only available in paper form it requires a lot of manpower, financial expenditure and time to convert this information into a useful electronic format. Germany, for example, for its approximately 150,000 frequency licences, has estimated 1.5 million Euro for new software and software modifications and more than 6,300 man-days to convert them all into electronic form (only for the "right of use" information in the EFIS format).

Should national administrations find it difficult to provide right of use information or have questions related to the subject, they can approach the ECO or the EFIS/MG for assistance. It is also always a good idea to have a look in the EFIS database, how other administrations solve the issue of filling the different data fields with information.

Although EFIS provides information on right of use, some national databases provide additional information on rights of use than what is mandated by the EC Decision. This includes information such as channel modulation, frequency type, channel bandwidth, antenna height, transmission power, antenna type and gain and polarisation (see radio interface section) However, it should be noted that due to issues of privacy, confidentiality and security legislation this information is sometimes only partly or not available in some countries. Moreover, such detailed information is not relevant when considering the objective of EFIS and there is no invitation to provide such detail.

A link to a national database may be a good source of supplementary information, but it cannot be considered on its own to be sufficient for the purposes of meeting the requirements of ECC/DEC/(01)03 [1] and Annex 2 of the EC Decision 2007/344/EC [2]. On the other side, the advantage of including links to the national database is often to make available detailed information with much higher granularity also through EFIS.

National administrations are also encouraged to provide licensing related information which is of interest for spectrum users and industry under the document type "licensing information". This

document type is complementary to the right-of-use information. Annex 7 describes which documents or links should be uploaded under this document type.

2.4.1 How to upload information

There are two possibilities to import right of use information to EFIS. It can be done manually or by using the XML data exchange format (see Annex 5). The latter is recommended since it is a much more efficient way to enter data. For XML data exchanges there are two possibilities; the SWEFT tool which is available free of charge from the ECO or the use of export functions that convert national database information into the XML exchange format needed for the EFIS database system. Some assistance and information is given in the EFIS editor's manual (see also section 2.3.2 of the present Report).

Overall information on rights of use that were awarded by competitive or comparative awards is provided by most administrations. It is recommended that all administrations provide, as a minimum, information on those ECS services awarded by comparative or competitive awards that are covered by the WAPECS approach.

2.4.2 Confidentiality

Related to right of use information are some aspects regarding confidentiality. These may depend on legal requirements which stem directly from national telecommunication laws and regulations concerning the individual licence issuing process (registration of an application, confirmation of the necessary payments, reception of the licence etc.). All these actions may include information which is confidential. Also, applicants may not want their application to be made public before licence awards. This may affect in specific cases more detailed information such as the exact location of a transmitting station or identities of licence holders and their related affiliations. It should furthermore be noted that the information provided by the administrations shall be in accordance with the requirements of Directive 95/46/EC [8] regarding the protection of individuals with regard to the processing of personal data and on the free movement of such data and Directive 2002/58/EC [9] on privacy and electronic communications.

2.5 EUROPEAN COMMON ALLOCATION TABLE MERGED INTO EFIS

In order to develop European common positions and proposals for use in the framework of international and regional bodies, and to forward plan and harmonise within Europe the efficient use of the radio spectrum and satellite orbits so as to satisfy the requirements of users and industry, the CEPT endorsed in 2002 the principle of adopting a harmonised European Table of Frequency Allocations and Applications to establish a strategic framework for the utilisation of the radio spectrum in Europe. After a detailed review in 2010 of the key principles defining the ECA Table, WG FM concluded at its meeting in February 2011 that the Table should essentially deliver information on the current situation, although some future-oriented information could still be maintained for some specific frequency bands.

The task of developing and maintaining the ECA Table is the responsibility of the Working Group Frequency Management (WG FM). Much of this work is carried out by the European Communications Office (ECO) on behalf of WG FM.

The ECA includes the frequency range 9 kHz to 3000 GHz (the 'ECA Table') and is provided in EFIS. It is included in the ERC Report 25 [12].

The ECA Table in EFIS also contains European footnotes and ITU Radio Regulations footnotes for Region 1.

In addition to the actual ECA table of Allocations and Publications, a wealth of additional information is uploaded to the ECA table in EFIS in the form of documents: ECC Decision and Recommendations, RIS models, EC Decisions, Class 1 sub-class information and Harmonised Standards. In the special Spectrum Inventory section, and linked to the ECA table, non-regulatory

information on spectrum inventory and the evolution of spectrum use can be found in the form of documents such as ECC and CEPT Reports, ETSI SRDocs and Draft SRDocs.

In 2011, the content of the ECA database was transferred to the EFIS database. The ECA table includes a lot of information on applicable documentation for each frequency bands and these documents are therefore available in EFIS. Furthermore, this ensures that the same application terminology is used in both ECA and EFIS. Finally, documents can now be searched for according to frequency and/or application.

The ECO will update the information on ECC/ERC deliverables and on harmonised standards in the ECA Table when it becomes available (expected three updates a year).

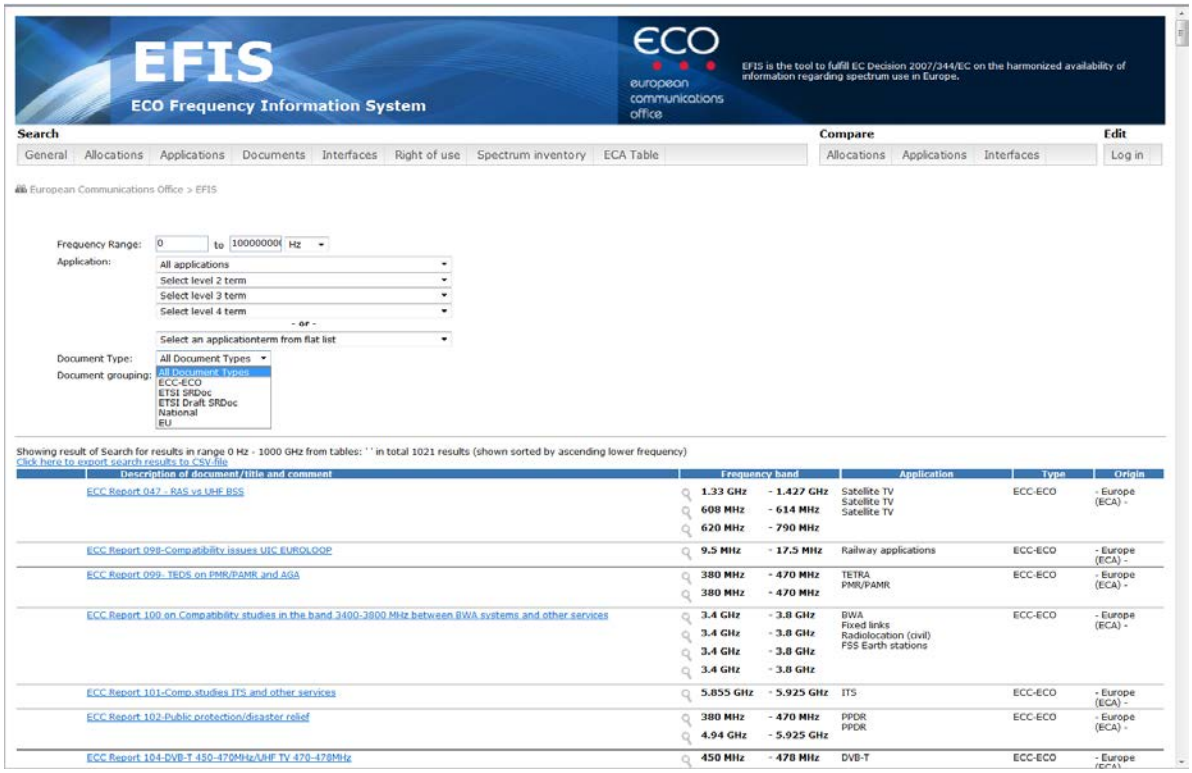
Information on “Applications” should in general be seen as of factual nature and should primarily be specified for corresponding ECC/ERC Decisions and Recommendations. Information on applications for which at least 10 CEPT administrations have made available a relevant frequency band according to EFIS is also considered to be of factual nature.

During its next meeting WG FM will confirm these new references to ECC deliverables (Decisions, Recommendations) and ETSI standards in the ECA Table or the deletion of references in case of withdrawal of ECC deliverables or ETSI standards.

ECA is maintained by ECO according to rules identified by WG FM.

2.6 NON-REGULATORY INFORMATION ON SPECTRUM USAGE (SPECTRUM INVENTORY INFORMATION)

EFIS provides non-regulatory information for spectrum inventory purposes and the evolution of spectrum use. This information in EFIS provides guidance to support searches for information on spectrum inventory documentation and the evolution of spectrum use.



Spectrum inventory documentation in EFIS includes the following documentation types:

1. ECC-ECO

This document type includes ECC or ECO documents with relevant information about current usage of one or several frequency bands, or expected future usage. The information is contained in documents such as CEPT questionnaire summaries and assessments, dedicated frequency band reviews, official ECC or ECO deliverables or external/public domain ECC/ECO documentation. Other information about application usage scenarios and usage densities may also be found in published ECC Reports.

2. ETSI System Reference Documents(ETSI SRDocs and Draft ETSI SRDocs)

A Memorandum of Understanding (MoU) for co-operation exists between ETSI and the CEPT Electronic Communications Committee (ECC). One purpose of the MoU is to ensure that ECC and ETSI deliverables do not contradict each other: ETSI produces System Reference documents (ETSI SRDocs) - ECC carries out sharing studies.

Results of these sharing studies should be mutually acceptable and implemented consistently by both parties in ECC deliverables and ETSI Harmonised European Standards.

If there is a sharing or compatibility problem or when a new spectrum allocation is required, then the originating ETSI technical group generates an SRDoc describing the radio frequency (RF) characteristics and any RF compatibility issues as detailed in ETSI EG 201 788 [13]. The information for CEPT (i.e. SRDoc, proposal, Liaison Statement) is coordinated within ETSI by ETSI TC ERM, which is responsible for interfacing with CEPT. TC ERM sends the resulting SRDoc to CEPT for consideration.

The ETSI SRDocs contained in EFIS may also include information about the market such as existing spectrum usage, current regulations, forecasted spectrum usage and a proposal for the future spectrum usage as well as regulation. Documents under document type ETSI SRDoc are already published by ETSI and sent to the CEPT.

The ETSI Draft SRDocs type includes ETSI SRDocs which are not published yet, but exist as adopted ETSI ERM Work Items or draft SRDocs. Stage 1 means that the status of the draft is that it has not yet been applied to the ETSI internal consultation. Stage 2 means that the draft SRDoc has already been in the ETSI internal consultation conducted by ETSI ERM.

3. Feedback from national inventory not already provided in other sections of EFIS

ECC-ECO, ETSI SRDoc, EU and Third Party document types are uploaded by the ECO whereas national non-regulatory spectrum usage information is uploaded by the national regulatory authorities.

National administrations may have information of non-regulatory nature on the possible evolution of spectrum use under study in their country. Such information can be uploaded in this national spectrum inventory document type. Examples are results of national consultations, spectrum reviews, reports or re-farming activities which provide information about the current usage (market) or evolution of spectrum usage (e.g. forecasts, growth or decline). The document can be either provided directly or as a link to a publicly available website of the national regulatory authority. Where possible, it should be linked to one or more frequency ranges and applicable applications of the ECA, but administrations are free to select sub frequency ranges or other applications.

Documents can be provided in the national language and should be accompanied by a title and short introduction (comments field, up to 300 characters) in the English language. This introduction as well as the title in English may include such information as whether the document describes the current use of spectrum (the word <<inventory>> should be used) and/or is also related to changes in the future or forecasted use of spectrum (the word <<demand>> should be used).

Existing application terms should be used as a general rule. Where it is not possible to even use a broad Layer 1 term, the comment field should be used to describe a future application.

In certain cases, it is more appropriate to provide documentation without a link to specific frequency ranges and/or applications. This could be a valid approach for:

- Non-technical information such as framework information on spectrum policy, allocation or trading of frequencies;

- Technical information related to the efficient use of spectrum or e.g. general information about medium access/ mitigation techniques.

  This section is planned to be enhanced to enable also future information collection processes such as dedicated questionnaires or spectrum review processes. This may also contain the introduction of protected/restricted areas (to administrations) within EFIS, an issue which should be discussed. In a first step, a contact list with the responsible contact persons for spectrum inventory persons and information in EFIS needs to be established. This document type may also be used for future surveys on spectrum use if requested by the ECC.

  Another feature that is available is to provide a date (publication date “valid from” and expiry date of the relevant information). . This is to enable the EFIS system to also show whether information is still relevant and to provide a document history, where applicable.

4. EU

This document type includes information collected by means of EC questionnaire or EC commissioned tasks or projects related to spectrum use which has subsequently become publicly available.

This section is planned to be enhanced to include also information provided by Member States in response to EC questionnaires in a given band.

5. Third parties

A “third party” document category is also planned to be established. This will first of all address spectrum inventory relevant information from e.g. MoU/LoU partners of the ECC. For some radio services, institutions such as CRAF (radio astronomy) or EUMETSAT (EESS) may provide relevant information for spectrum inventory purposes at their own level in a context of harmonised approach. The basic rule will be that the third party can propose a document and it is uploaded by the ECO in agreement. The list of third party documentation will be provided to the WGFM.

Applications grouping in the spectrum inventory section of EFIS:

The complete application terminology used in EFIS encompasses more than 250 terms.

It may be advisable to use fewer categories for spectrum inventory purposes in this informative section of the database. In line with the layer search rules in the regulatory sections of EFIS, one can still use the full terminology available to provide as detailed information as possible while at the same time the mapping to a limited number of categories may be suggested. This application grouping is currently outside the EFIS Decision; only implemented on an optional basis in the EFIS database and in only the spectrum inventory section. The item is still for further study and the mapping shown in annex 6 of the present document can change and will also be maintained in the future (e.g. withdrawal/ adding of application terms).

Such application grouping may reduce visibility on information available in EFIS system and the understanding on how the radio frequency spectrum is used. It is therefore not used in the sections of EFIS dealing with regulatory information

In order to identify at a strategic level how the spectrum is used, a grouping of applications into categories may be investigated. This should be considered on the basis of usage information available and following clear objectives, inter-alia to provide a strategic overview of the actual spectrum usage. This also reflects functional similarities or trends in spectrum usage. The application grouping may also be used in the spectrum inventory section (in addition to the existing application layer 1 to 3 terms) for uploading documents as well as for conducting searches. The grouping is going to be further investigated. The Annex 6 in the present Report is therefore to be understood as example only ECO may provide on demand on its own responsibility extracts from EFIS to third parties.

Examples of mapping can be found in Annex 6, Tables 7 and 8.

Confidentiality issues

Confidential Information remains at national level. It seems not appropriate to investigate a possible restricted area in this context.

3 CONCLUSIONS

This ECC Report recognises that it might be possible to include more information in the EFIS system by all CEPT administrations.

The administrations should use the guidance provided in the present document for preparing their national regulatory information relative to allocation, applications, national radio interface data, right of use and licensing information as well as the non-regulatory information ('National information' to import them in EFIS.

National radio interface data:

- ECC/DEC/(03)05 [7] on publication of national tables of frequency allocations and utilisations;
- ECC/DEC/(01)03 [1] on EFIS;
- RIS model as proposed by ECC entities and available on line ECC Decisions and Reports;
- Information gained from the data of other administrations which is available in EFIS as examples;
- Assistance from ECO and EFIS/MG in cooperation with the relevant entity which drafted the RIS model;
- EC Decision 2007/344/EC [2] (only for EU Member States obliging);
- EC Decision 676/2002/EC [5] (only for EU Member States obliging).

Right of use information:

- National licence regimes and confidentiality;
- Information of other administrations which are available in EFIS as examples;
- Assistance from ECO and EFIS/MG;
- ECC/DEC/(01)03 [1] on EFIS;
- ECC/DEC/(03)05 [7] on publication of national tables of frequency allocations and utilisations;
- EC Decision 2007/344/EC [2] (only for EU Member States obliging);
- EC Decision 676/2002/EC [5] (only for EU Member States obliging).

National administrations are also encouraged to provide licensing related information which is of interest for spectrum users and industry under the document type "licensing information". This document type is complementary to the right-of-use information. Annex 7 describes which documents or links should be uploaded under this document type.

National administrations may have information of non-regulatory nature on the possible evolution of spectrum use under study in their country. They are also encouraged to provide non-regulatory information under 'National' in the spectrum inventory section. This section is planned to be enhanced to enable also future information collection processes such as dedicated questionnaires or spectrum review processes.

ANNEX 1: NATIONAL RADIO INTERFACES INFORMATION

The normative requirements for the information on National Radio Interface Specifications in Annex 1 of the EC Decision 2007/344/EC [2] are as follows:

Member States shall provide either by reference to the relevant standard or descriptive text and any comments as necessary regarding the following parameters:

Channelling;
Modulation/occupied bandwidth;
Direction/separation;
Transmit power/power density;
Channel access and occupation rules;
Authorisation regime;
Additional essential requirements according to Article 3(3) of Directive 1999/5/EC [14];
Frequency planning assumptions.

All other information provided is voluntary and purely informative.

ANNEX 2: RIS TEMPLATE SKELETON

Table 4: Normative Part

Nr	Parameter	Description	Comments
1	Radiocommunication Service		
2	Application		
3	Frequency band		
4	Channelling		
5	Modulation / Occupied bandwidth		
6	Direction / Separation		
7	Transmit power / Power density		
8	Channel access and occupation rules		
9	Authorisation regime		
10	Additional essential requirements according to Art. 3.3 of R&TTE Directive		
11	Frequency planning assumptions		

Table 5: Informative Part

Nr	Parameter	Description	Comments
12	Planned changes		
13	Reference		
14	Notification number		
15	Remarks		

ANNEX 3: NATIONAL RIGHT OF USE INFORMATION

The intentions of Annex 2 of the EC Decision 2007/344/EC [2] were to focus on the bands of major economic interest or significance.

The normative requirements for the information on right of use as defined in the EC Decision 2007/344/EC [2] are as follows:

Information on rights of use may be limited to frequency bands used for the provision of electronic communications services which are tradable in accordance with Article 9.3 of Directive 2002/21/EC [6] or which are granted through competitive or comparative selection procedures pursuant to Directive 2002/20/EC [10].

For relevant frequency bands Member States shall provide in accordance with the requirements of Directive 95/46/EC [8] and Directive 2002/58/EC [9] and Community and national rules on business confidentiality, the following information:

Identity of the radio frequency right holder;
Expiry date of the right or, in the case where there is none, the expected duration;
Geographic validity of the right by at least providing the information whether the right is local (i.e. one station), regional or nation-wide;
An indication of whether or not the right is tradable.

All other information provided by the regulatory authority in EFIS is voluntary and purely informative. It should be noted that the contact provided in EFIS for the right of use information can also be a contact point from the administration.

Specific national legislation or jurisdiction may make it difficult for a country cases to provide in specific cases more detailed information such as the exact location of a transmitting station or identities of licence holders and their related affiliations.

ANNEX 4: HARMONISED ECS BANDS

The bands that have been designated for harmonised ECS during the last two decades are the following:

Table 6: Harmonised ECS

Frequency Band	CEPT & EC Decision references	Year of designation	Amount of Spectrum
800 MHz	ECC/DEC/(09)03 Dec 2010/267/EU [15]	2010/2015	2x30 MHz
900 MHz	Dir 87/372/CEE [16] ERC/DEC/(94)01 ERC/DEC/(97)02 DECC/DEC/(06)13 Dir 2009/114/EC [20] Dec 2009/766/EC [17]	1987- 1994 - 1997	2x35 MHz
1800 MHz	ERC/DEC/(95)03 ECC/DEC/(06)13 Dec 2009/766/CE [17]	1995	2x75 MHz
2100 MHz	ERC/Dec/(97)07 ERC/Dec/(99)25 ERC/Dec/(00)01 ECC/DEC/(06)01	1997 – 2000	155 MHz
2600 MHz	ECC/DEC/(02)06 ECC/DEC/(05)05 Dec 2008/477/EC [18]	2002 - 2008	190 MHz
3600 MHz	ECC/DEC/(07)02 ECC/DEC/(11)06 Dec 2008/411/EC [19]	2007 – 2008 2011	400MHz
		Total	**1025 MHz**

ANNEX 5: LICENSING INFORMATION TYPE DOCUMENTS

The uploading of documents in general is described in the EFIS editor's manual.

National administrations are encouraged to provide licensing related information which is of interest for spectrum users and industry under this document type. The document type is complementary to the right-of-use information which includes certain individual licenses (see section 2.4).

Examples are:

Application forms for licensing purposes (where applicable);

General authorisation, licence-exempt rulings;

General/Master/framework documentation on licensing (e.g. PMR or FS frequencies);

Information related to licensing for short term/temporary/occasional usage of spectrum;

Licensing contact information points to branch offices of the regulatory authority.

A document can be either provided directly or as a link to a publicly available website of the national regulatory authority.

In this context, it should be noted that the ECO manages a list of contacts from administrations on experimental/ testing use of spectrum and that the link to this information is also provided via the EFIS database. Administrations therefore do not need to include such information again in the database.

Where possible, it should be linked to one or more frequency ranges and applicable applications of the ECA but administrations are free to select frequencies and applications.

Documents can be provided in the national language and should be accompanied by a title and short introduction (comments field, up to 300 characters) in English language.

Licensing information may differ from one sector to another. In case of governmental services, only information on the rights granted according to the National Table of Frequency Allocation may be available.

ANNEX 6: EXAMPLE OF MAPPING OF THE SPECTRUM INVENTORY SECTION WITH THE EFIS LAYER 1 AND 2 TERMINOLOGY (FOR FURTHER STUDY)

The Table 7: and Table 8: shows an example of the mapping of the application terms in EFIS used for spectrum inventory purposes. Depending on precise objectives, other mapping configurations may be defined.

Table 7: Mapping of EFIS Applications to Spectrum Inventory Application Groupings

EFIS Layer 1	EFIS Layer 2	Application Grouping for Spectrum Inventory Section of EFIS	Comments
Aeronautical	Aeronautical communications	Aeronautical, Maritime and Civil Radiolocation / Navigation Systems (AMCRN)	Similar communication, radiolocation and radionavigation requirements apply across aeronautical and maritime sector.
	Aeronautical navigation		
	Aeronautical surveillance		
	Aeronautical emergency		
	Aeronautical telemetry		
	Aeronautical telecommand		
	Aeronautical telemetry/telecommand		
	Satellite navigation systems		
Broadcasting	Broadcasting (terrestrial)	Broadcasting (terrestrial)	
	Broadcasting-satellite receivers	Satellite systems (civil)	Propose to group together with other satellite services for efficiency analysis
	PMSE	PMSE	Reflects current terminology
Fixed	Point-to-Multipoint	Fixed	
	Point-to-Point		
	BWA	BWA / Cellular	Reflects trend towards service neutrality
	MFCN		
Defence systems	Aeronautical military systems	Defence Systems	
	Land military systems		
	Maritime military systems		
	Meteorological aids (military)		

	Radiolocation (military)		
	Satellite systems (military)		
	Telemetry (military)		
	Telecommand (military)		
	Telemetry/Telecommand (military)		
Land mobile	Digital cellular	BWA / Cellular	Reflects trend towards service neutrality
	BWA		
	ITS	ITS	New transport related services may require specific efficiency criteria
	Analogue cellular	BWA / Cellular	
	Cordless telephones	SRDs	Reflects licence exempt status
	D-GPS	Not currently included	Not under consideration currently
	PPDR	PPDR	Reflects current terminology
	Inland waterway communications	PMR/PAMR	Reflects commonalities between these services (e.g. technology, functionality)
	MFCN	BWA / Cellular	
	Paging	PMR/PAMR	Reflects similarity between these services
	PMR/PAMR		
	PMSE	PMSE	Reflects current terminology
	Telemetry (civil)	Fixed(licensed) or SRDs (licence exempt)	These are generally fixed (point to multipoint) systems rather than mobile (though often deployed in mobile bands)
	Telemetry/Telecommand (civil)		
Maritime	GMDSS	Aeronautical, Maritime and Civil Radiolocation / Navigation Systems (AMCRN)	Similar communication, radiolocation and radionavigation requirements apply across aeronautical and maritime sector
	Satellite navigation systems		
	Maritime communications		
	Maritime navigation		
Meteorology	Oceanographic buoys	Meteorology	
	Sondes		
	Weather radar		
	Weather satellites		
	Wind profilers		

Satellite systems (civil)	Aeronautical satcoms	Satellite systems (civil)	
	Broadcasting-satellite receivers		
	Earth exploration-satellite		
	Feeder links		
	FSS Earth stations		
	Inter-satellite links		
	MSS Earth stations		
	Satellite navigation systems	Aeronautical, Maritime and Civil Radiolocation / Navigation Systems (AMCRN)	Reflects functional similarity to other navigation systems
	Standard frequency and time signal-satellite	Satellite systems (civil)	
	Space operations		
	Space research		
Radio astronomy	Continuum measurements	Radio Astronomy	
	Spectral line observations		
	VLBI observations		
Short Range Devices	Alarms	Short Range Devices (SRDs)	
	Railway applications	Intelligent Transport Systems (ITS)	New transport related services may require specific efficiency criteria
	Tracking, tracing and data acquisition	Short Range Devices (SRDs)	
	Radiodetermination applications		
	Inductive applications		
	Active medical implants		
	Model control		
	Non-specific SRDs		
	Radio microphones and ALD		

	Wideband data transmission systems	Wideband Data Transmission	Likely to require different efficiency criteria from other SRD applications
	RFID	Short Range Devices (SRDs)	
	RTTT	Intelligent Transport Systems (ITS)	New transport related services may require specific efficiency criteria
	UWB applications	Short Range Devices (SRDs)	
	Wireless audio applications		
TRA-ECS		BWA / Cellular or Fixed	
Other	Amateur and Amateur-satellite	Not currently included	
	CB radio		
	GNSS Repeater		
	HAPS		
	ISM		
	Meteor scatter communications		
	Land radionavigation	Aeronautical, Maritime and Civil Radiolocation / Navigation Systems (AMCRN)	
	Radiolocation (civil)		
	Standard frequency and time signal	Not currently included	
	Tracking systems		
ALL		No implementation	Frequency ranges that have been allocated but not assigned would be mapped here, this could in principle be nearly all EFIS application terms

Table 8: Mapping of Spectrum Inventory Application Groupings to EFIS Applications (Level 2)

Application Grouping for Spectrum Inventory Section of EFIS	EFIS Layer 2 Applications
Aeronautical, Maritime and Civil Radiolocation / Navigation Systems (AMCRN)	Aeronautical communications
	Aeronautical emergency
	Aeronautical navigation
	Aeronautical surveillance
	Aeronautical telecommand
	Aeronautical telemetry
	Aeronautical telemetry/telecommand
	GMDSS
	Land radionavigation
	Maritime communications
	Maritime navigation
	Radiolocation (civil)
	Satellite navigation systems
Broadcasting (Terrestrial)	Broadcasting (Terrestrial)
BWA / Cellular	Analogue cellular
	BWA
	Digital cellular
	MFCN
	TRA-ECS (Level 1)
Defence Systems	Aeronautical military systems
	Land military systems
	Maritime military systems
	Meteorological aids (military)
	Radiolocation (military)
	Satellite systems (military)
	Telemetry (military)
	Telecommand (military)
	Telemetry/Telecommand (military)
Fixed	Point-to-Multipoint
	Point-to-Point
	Telemetry (civil)
	Telemetry/Telecommand (civil)
Intelligent Transport Systems (ITS)	ITS
	Railway Applications
	RTTT
Meteorology	Oceanographic buoys
	Sondes
	Weather radar
	Weather satellites

	Wind profilers
PMR / PAMR	Inland waterway communications
	Paging
	PMR / PAMR
PMSE	PMSE
	Radio Microphones
PPDR	PPDR
Radio Astronomy	Continuum measurements
	Spectral line observations
	VLBI observations
Satellite Systems (Civil)	Aeronautical satcoms
	Amateur-satellite
	Broadcasting-satellite receivers
	Earth exploration-satellite
	Feeder links
	FSS Earth stations
	Inter-satellite links
	MSS Earth stations
	Satellite navigation systems
	Standard frequency and time signal-satellite
	Space operations
	Space research
Short Range Devices (SRDs)	Active medical implants
	Alarms
	Inductive applications
	Model control
	Non-specific SRDs
	Radio microphones and ALD
	Radiodetermination applications
	RFID
	Tracking, tracing and data acquisition
	UWB applications
	Wireless audio applications
Wideband data transmission systems	Wideband data transmission systems

ANNEX 7: CEPT, ECC AND EC DELIVERABLES

The following table includes a list of the CEPT, ECC and EC deliverables which include definitions for the application terminology	Used application terms in EFIS/ECA
CEPT Report 1: Third generation mobile and wireless communication systems operating in add frequency bands as identified by WRC-2000	IMT
CEPT Report 2: Harmonisation of 2500-2690 MHz to be made available for IMT-2000/UMTS systems in Europe	IMT
CEPT Report 3: Automotive SRR systems	SRR
CEPT Report 4: Review the frequency band 169.4-169.8 MHz	Meter reading
	Paging
	Social alarms
	Asset tracking and tracing
	PMR
CEPT Report 5: SRD Radio Spectrum Harmonisation	Short Range Devices
CEPT Report 6: Harmonised - RLANs in 5150-5350/5470-5725 MHz	Radio LANs
CEPT Report 7: Harmonise radio spectrum use for Ultra-Wideband Systems in the European Union	UWB applications
CEPT Report 8: Harmonised uses bands 1670-1675/1800-1805 MHz	MSS Earth stations
	PMSE
CEPT Report 9: Harmonise radio spectrum use for Ultra-Wideband in EU	UWB applications
CEPT Report 10: UWB specific applications	BMA
	Material Sensing
	GPR/WPR
CEPT Report 11: ECO Frequency Information System (EFIS)	All
CEPT Report 13: Harmonised technical conditions for the use of the 2 GHz MSS in EU	MSS Earth stations

CEPT Report 14: Develop a strategy to improve the effectiveness and flexibility of spectrum availability for SRDs	Meter reading
	Short Range Devices
	Alarms
	RFID
CEPT Report 15: Harmonised radio frequency bands in the European Union for BWA applications	BWA
	BFWA
CEPT Report 16: Mobile Communication Services on board aircraft (MCA)	MCA
CEPT Report 17: Identify the conditions relating to the harmonised introduction in EU of radio applications based on UWB tech	UWB applications
CEPT Report 18: EU harmonisation in 1452-1479.5 MHz (lower part of L-band) to allow flexible use by mobile multimedia tech	Broadcasting (terrestrial)
	Land mobile
CEPT Report 19: Least restrictive technical conditions for WAPECS frequency bands	IMT
	TRA-ECS
	MFCN
CEPT Report 20: Harmonised radio spectrum use for safety critical applications of ITS in the European Union	ITS
CEPT Report 21: Compatibility issues between cellular/low power transmitter networks and larger coverage/high ...	Broadcasting (terrestrial)
	IMT
	MFCN
CEPT Report 22:Technical feasibility of harmonising a sub-band of bands IV+V for Fixed/Mobile applications (incl uplinks) minimizing the impact on GE06	Broadcasting (terrestrial)
	IMT
	MFCN
CEPT Report 23: Technical options for the use of a harmonised sub-band in the band 470-862 MHz for Fixed/Mobile application (including Uplinks)	Broadcasting (terrestrial)
	IMT
	MFCN
CEPT Report 24: Report C: A preliminary assessment of the feasibility of fitting new/future applications/services ...	PMSE
	Broadcasting (terrestrial)
	Wideband data transmission systems

CEPT Report 25:Technical Roadmap proposing relevant technical options + scenarios to optimise the DD, incl steps required	Broadcasting (terrestrial) IMT TRA-ECS
CEPT Report 26:annual update of the techn annex of EU Decision on techn harmonisation of radio spectrum for use by SRDs	Model control Active medical implants Radiodetermination applications TLPR GBSAR Wideband data transmission systems
CEPT Report 27: Report A from CEPT to European Commission in response to the Mandate 4 on Ultra-Wideband (UWB)	UWB applications
CEPT Report 28: Mobile Communication Services on Vessels (MCV)	MCV
CEPT Report 29: Guideline on cross border coordination issues between mobile services in one country and broadcasting	Broadcasting (terrestrial) MFCN IMT
CEPT Report 30: The identification of common and minimal (least restrictive) technical conditions for 790-862 MHz for DD	IMT MFCN
CEPT Report 31: Frequency (channelling) arrangements for the 790-862 MHz band Task 2 of the 2nd Mandate to CEPT on DD	IMT MFCN
CEPT Report 32: Continuation of PMSE operating in the UHF, including the assessment of the advantage of an EU approach	PMSE
CEPT Report 34: Report B from CEPT to European Commission in response to the Mandate 4 on Ultra-Wideband (UWB)	UWB applications
CEPT Report 35 in response to the EC Permanent Mandate on the Annual update of the technical annex short-range devices	Short Range Devices Active medical implants Inductive applications Wideband data transmission systems SRR

CEPT Report 36: From CEPT to the European Commission in response to Part 1 of the Mandate on (SRR)	SRR
CEPT Report 37 on Automotive Short-Range Radar systems (SRR) all types	SRR
CEPT Report 38 on harmonisation of the radio spectrum for use by SRDs	Inductive applications
	RFID
	SRR
	RTTT
	Non-specific SRDs
CEPT Report 39 to the EU in response to the Mandate to develop least restrictive technical conditions for 2 GHz bands	IMT
CEPT Report 40: Compatibility study for LTE and WiMAX (900/1800 MHz bands)	IMT
CEPT Report 41: Compatibility between LTE and WiMAX and systems operating in adjacent bands	IMT
CEPT Report 42: Compatibility between UMTS and existing and planned aeronautical systems above 960 MHz	IMT
	Aeronautical navigation
Commission Decision 2004/545/EC	RTTT
	SRR
	UWB applications
Commission Decision 2005/50/EC	RTTT
	SRR
	UWB applications
Commission Decision 2005/513/EC	Wideband data transmission systems
Commission Decision 2005/928/EC	Aids for hearing impaired
	Asset tracking and tracing
	Meter reading
	PMR
	Social alarms
	Tracking, tracing and data acquisition

Commission Decision 2006/804/EC	RFID
	Short Range Devices
Commission Decision 2007/131/EC – UWB	UWB applications
Commission Decision 2007/346/EC amending Commission Decision (2006/804/EC)	RFID
Commission Decision 2007/90/EC	Wideband data transmission systems
Commission Decision 2007/98/EC - MSS in 2 GHz	MSS Earth stations
Commission Decision 2008/294/EC on harmonised conditions of spectrum use for the operation of MCA services	GSM
Commission Decision 2008/411/EC	BWA
	Fixed
	TRA-ECS
Commission Decision 2008/432/EC amending Commission Decision 2006/771/EC	Non-specific SRDs
Commission Decision 2008/477/EC	TRA-ECS
	IMT
Commission Decision 2008/626/EC – MSS	MSS Earth stations
Commission Decision 2008/671/EC	ITS
	RTTT
Commission Decision 2008/673/EC amending Commission Decision 2005/928/EC	Asset tracking and tracing
	Social alarms
	Aids for hearing impaired
	Meter reading
Commission Decision 2009/1/EC amending Commission Decision (2008/477/EC)	IMT
Commission Decision 2009/159/EC amending Commission Decision (2008/671/EC)	SAP/SAB and ENG/OB
Commission Decision 2009/343/EC amending Decision 2007/131/EC	UWB applications
Commission Decision 2009/381/EC amending Commission Decision (2006/771/EC)	Short Range Devices
Commission Decision 2009/740/EC amending Commission Decision (2008/477/EC)	IMT
Commission Decision 2009/766/EC on the harmonisation of the 900 MHz and 1800 MHz	IMT

Commission Decision 2009/812/EC amending Commission Decision (2006/771/EC)	Wideband data transmission systems
	Defence systems
Commission Decision 2010/166/EU - E-GSM	GSM
Commission Decision 2010/194/EU amending Commission Decision (2009/1/EC)	IMT
Commission Decision 2010/267/EU	Land mobile
	IMT
	PMSE
	TRA-ECS
Commission Decision 2010/368/EU amending Commission Decision 2006/771/EC	Short Range Devices
Commission Decision 2011/251/EU amending Commission Decision (2009/766/EC)	Fixed
Commission Decision 2011/485/EU amending 2005/50/EC	SRR
Commission Decision 2011/829/EU amending Decision 2006/771/EC on the harmonisation of the radio spectrum for use	RFID
	SRR
	ITS
	Inductive applications
	Short Range Devices
Commission Decision 676/2002/EC - Radio Spectrum	All
Draft CEPT Report 43: In response to the EC Mandate on the Review of Commission Decision 2005/928/EC (Inventory)	Paging
	Tracking, tracing and data acquisition
	Meter reading
	Aids for hearing impaired
ECC Report 173 - Fixed Service in Europe. Current use and future trends post 2011. Excel Worksheet (Inventory & Forecast)	Fixed
ECC Report 1 - Compatibility between inductive LF and HF RFID	RFID
ECC Report 2 - on SAP/SAB	SAP/SAB and ENG/OB
ECC Report 3 on fixed service in Europe current use and future trends POST-2002	Fixed

ECC Report 4 - Ideas for rev. Stockholm Agreement	TV analogue (terrestrial)
	Broadcasting (terrestrial)
ECC Report 5 - Adjacent band compatibility between GSM and TETRA Mobile Services at 915 MHz	TETRA
	GSM
ECC Report 6 - Sharing at 2700-2900 MHz	SAP/SAB and ENG/OB
ECC Report 7 - Inductive LF RFID	RFID
ECC Report 11 - Strategic plans for the future use of the frequency bands 862-870 MHz and 2400-2483.5 MHz for SRDs	Defence systems
	Detection of avalanche victims
	Radio LANs
	RFID
	Social alarms
	Wireless audio applications
ECC Report 12 - ULP-AMI	Medical implants
ECC Report 13 - Adjacent band compatibility between Short Range Devices and TETRA TAPS mobile services at 870 MHz	Short Range Devices
	TETRA
ECC Report 14 - UIC/TAPS adjacent band	TETRA
ECC Report 17 - EESS - Video SAP/SAB	SAP/SAB P to P video links
	SAP/SAB and ENG/OB
ECC Report 18 - RAS vs. other at 10.6-10.7 GHz	Continuum measurements
ECC Report 19 on guidance material for assessing the spectrum requirements on the Fixed Service	IMT
ECC Report 20 on methodology to determine the density of Fixed Service systems	Fixed
ECC Report 22 - Technical impact	PMR/PAMR
ECC Report 23 - Automotive SRR	Short Range Devices
	Fixed
	Radio astronomy

ECC Report 25 - PMR/PAMR	PMR/PAMR
ECC Report 26 - Compatibility	Aeronautical communications
ECC Report 32 - Improving co-existence Multipoint FS	Point-to-Multipoint
ECC Report 33 - FWS 3.4-3.8 GHz	Point-to-Multipoint
ECC Report 34 - PMR/PAMR vs. TRRL	PMR/PAMR
	Tactical radio relay
ECC Report 35 - Terrestrial Broadcasting Data	Broadcasting (terrestrial)
ECC Report 37 - SRD applications in 863-870 MHz	Short Range Devices
ECC Report 38 - CDMA-PAMR vs UIC in 900 MHz	GSM-R
	PMR/PAMR
ECC Report 39 - CDMA-PAMR on 12.5/25 kHz PMR/PAMR	PMR/PAMR
ECC Report 40 - Compatibility CDMA-PAMR vs SRD	Short Range Devices
	PMR/PAMR
ECC Report 41 - GSM and CDMA-PAMR at 915 MHz	GSM
	PMR/PAMR
ECC Report 42 - CDMA-PAMR and PMR/PAMR	PMR/PAMR
ECC Report 44 - Audio links and radio microphones	PMSE
ECC Report 45 - UMTS vs other services at 2.5 GHz	IMT
ECC Report 46 - SRR vs FS	SRR
	Fixed
ECC Report 47 - RAS vs UHF BSS	Satellite TV
ECC Report 49 - Technical criteria of DVB-T and T-DAB allotment planning	Broadcasting (terrestrial)
ECC Report 54 - Analysis of increasing the EIRP of Terrestrial Fixed Links at around 58 GHz	Fixed
ECC Report 55 - SRDs and other Radiocommunication	Short Range Devices

ECC Report 56 - Compatibility SRR at 79 GHz	Fixed
	Radio astronomy
	Radiolocation (civil)
	SRR
ECC Report 57 - (O)RLANS 2400-2483.5 MHz	Radio LANs
ECC Report 58 - Compatibility - TETRA	TETRA
ECC Report 64 - The protection requirements of radiocommunications systems below 10.6 GHz from generic UWB appl	UWB applications
ECC Report 66-on protection of avionics from VSATs	VSAT
	VSAT
ECC Report 67 - Inductive SRD	Inductive applications
ECC Report 68 - Compatibility studies in the band 5725-5875 MHz between FWA systems and other systems	Fixed
ECC Report 69 - Formats for submission of information from administrations to the Office	ESV
ECC Report 73 - SRD FM Broadcasting	Short Range Devices
ECC Report 76 - FWS 3.4 to 33.4 GHz	MWS
ECC Report 81 - coexistence of ULP-AID 12.5-20 MHz	Short Range Devices
	GSM
ECC Report 82 - UMTS of GSM 900 and 1800	IMT
ECC Report 85 - Guidance for 24 GHz Short Range Radar (SRR) enforcement	SRR
ECC Report 90 - Wind profiler radars vs RNSS	Wind profilers
ECC Report 91-Compatibility of ESV in lower 6 GHz	FSS Earth stations
ECC Report 92 - Coexistence of ULP-AMI	Medical implants
	ULP-AMI
ECC Report 93-Compatibility GSM on board aircraft	GSM
	MCA
ECC Report 94 - UWB LDC	UWB applications
ECC Report 95 - MSS using TDMA and MSS using CDMA	Satellite systems (civil)

ECC Report 96 - UMTS 900/1800	PMR/PAMR
	DME
	GSM-R
	IMT
	PMR/PAMR
	DME
ECC Report 97 on Cross Border Interference for Land Mobile Technologies	Land mobile
ECC Report 098 - Compatibility issues UIC EUROLOOP	Railway applications
ECC Report 099 - TEDS on PMR/PAMR and AGA	TETRA
	PMR/PAMR
ECC Report 100 - Compatibility between BWA and other services	BWA
ECC Report 101 - Compatibility studies ITS and other services	ITS
ECC Report 102 - Public protection/disaster relief	PPDR
ECC Report 103 - UMTS coverage measurements	UMTS
ECC Report 104 - DVB-T 450-470MHz/UHF TV 470-478MHz	DVB-T
ECC Report 105 - SAP/SAB vs BSS in 620-790 MHz	SAP/SAB and ENG/OB
ECC Report 108 - Border Code Coordination between CDMA-PAMR Systems	Digital cellular
ECC Report 109 - ITS, BBDR and BFWA 5725-5925 MHz	PPDR
	ITS
	BWFA
	BBDR
	RTTT
ECC Report 110 - BBDR and other systems	PPDR
	BBDR
ECC Report 111 - GBSAR and existing services	GBSAR
ECC Report 112 - satellites to radio astronomy	S-PCS
ECC Report 113 -Compatibility studies around 63GHz	Short Range Devices

ECC Report 114 - Compatibility studies in the range 57-66 GHz	Radio LANs, Fixed
ECC Report 115 – Band 8025-8400 MHz by EESS	Earth exploration-satellite
ECC Report 116 on the possibilities and consequences of converting GE06 DVB-T allotments…	DVB-T
ECC Report 117-Digital Sound Broadcasting < 80MHz	Broadcasting
ECC Report 118	GSM
ECC Report 119-FDD/TDD in 2.6 GHz	IMT
ECC Report 120-UWB DAA 3.1-4.8 GHz and 8.5-9 GHz	UWB applications
	Radiolocation (military)
	BWA
ECC Report 121 - PWMS 1452-1530/1533-1559 MHz	PMSE
ECC Report 122 - GSM use onboard vessels	MCV
	GSM
ECC Report 123 - ODC – UWB	UWB applications
ECC Report 124 - FS in 71-76 / 81-86 GHz	Fixed
ECC Report 128 - RNSS receivers	Satellite navigation systems
ECC Report 129 - GNSS repeaters	GNSS Repeaters
ECC Report 131 - BEM in the 2.6 GHz	IMT
	TRA-ECS
	MFCN
ECC Report 134-VR on RSM 24.05-24.25 GHz	RTTT
ECC Report 135-Inductive limits in 9 - 148.5 kHz	Inductive applications
ECC Report 138 on DVB-T – UMTS	DVB-T
	UMTS
ECC Report 139 on Level Probing Radars	Detection of movement and alert
	LPR
	UWB applications

ECC Report 140 - RLAN on board aircraft and radars	Radio LANs
	Radiolocation (civil)
	Radiolocation (military)
ECC Report 141 - Digitalisation of band II	Broadcasting (terrestrial)
ECC Report 142	Broadcasting (terrestrial)
ECC Report 145 - GNSS repeaters	GNSS Repeaters
ECC Report 146-GSM MCBTS/Military systems-MIDS	Aeronautical
	DECT
	Land mobile
	Tactical radio relay
	DME
	JTIDS/MIDS
	GSM-R
	GSM
ECC Report 147 – PWMS	PMSE
ECC Report 148 - DVB-T - LTE	DVB-T
	IMT
ECC Report 149 - LP-AMI	Medical implants
ECC Report 150 - RDSS in 2483.5-2500 MHz	Satellite navigation systems
ECC Report 152 - Fixed Satellite Systems	FSS Earth stations
ECC Report 156 - HAPS gateway links	HAPS
ECC Report 157 - spurious emissions	radiolocation (civil)
ECC Report 158 - 26GHz SRR -UWB	SRR
ECC Report 159 - cognitive radio systems	Fixed
ECC Report 161	Broadcasting (terrestrial)
ECC Report 162 - GSM-R	GSM-R
	IMT

ECC Report 163 - 7125-8500 MHz band within the CEPT	Fixed
ECC Report 164 - WLAM and other systems	RTTT
ECC Report 165 - study between MSS CGC and other services	Radio astronomy
	Satellite navigation systems
	PMSE
ECC Report 166 - radars at 24 GHz and 35 GHz	Passive sensors (satellite)
	Amateur-satellite
	Active sensors (satellite)
	Radiolocation (civil)
ECC Report 167 - UWB LT2 systems	UWB applications
	FSS Earth stations
	IMT
	Fixed
	Defence systems
ECC Report 168 - Indoor GNSS pseudolites	GNSS Pseudolites
ECC Report 170 - UWB - LAES and LT2	UWB applications
ECC Report 171 - Unwanted emissions of IRIDIUM	Radio astronomy
ECC Report 173 - Fixed Service in Europe. Current use and future trends post 2011	Fixed
ECC Report 174 - Compatibility between the mobile service in the band 2500-2690 MHz and the radiodetermination service in the band 2700-2900 MHz	IMT, MFCN, Radiolocation (civil)
ECC Report 175 - Co-existence study considering UWB applications inside aircraft and existing radio services in 3.1-4.8 GHz/6.0-8.5 GHz	UWB applications
ECC Report 176 - The impact of non-specific SRDs on radio services in the band 57–66 GHz	Fixed, Radiolocation (civil), Short Range Devices, Passive sensors (satellite)
ECC Report 177 - Possibilities for Future Terrestrial Delivery of Audio Broadcasting Services	Broadcasting
ECC/DEC(01)01 - phasing out of CT1 and CT1	Cordless telephones
ECC/DEC(01)02 on phasing out CT2 applications in the 900 MHz band	Cordless telephones
ECC/DEC/(02)01 - designated frequency bands	RTTT

ECC/DEC/(02)04 on the use of the band 40.5-42.5 GHz by terrestrial FS/BS systems and uncoordinated Earth stations in FSS	MWS
ECC/DEC/(02)05 on the designation and availability of frequency bands for railway purposes	GSM-R
ECC/DEC/(02)06 - UMTS/IMT-2000	IMT
ECC/DEC/(02)09 on free circulation and use of GSM-R mobile terminals for railway purposes in CEPT countries	GSM-R
ECC/DEC/(02)10 on exemption from individual licensing of GSM-R mobile terminals for railway purposes	GSM-R
ECC/DEC/(03)02 on the designation of the frequency band for use by Satellite Digital Audio Broadcasting systems	Satellite radio
ECC/DEC/(03)04 - Exemption from Individual licensing of Very Small Aperture Terminals (VSAT)	VSAT
ECC/DEC/(04)03 - Automotive Short Range Radars	SRR
ECC/DEC/(04)06 - Wide Band Digital Land Mobile	PMR/PAMR
ECC/DEC/(04)08 - Wideband Data Transmission	Wideband data transmission systems
	Radio LANs
ECC/DEC/(04)09 - MSS -1518-1525 MHz and 1670-1675 MHz	MSS Earth stations
ECC/DEC/(04)10 - automotive Short Range Radars	SRR
ECC/DEC/(05)01 on the use of the band 27.5-29.5 GHz by the FS & uncoordinated Earth stations of the FSS(Earth-to-space)	FSS Earth stations
	Fixed
ECC/DEC/(05)02 - on the use of the frequency band 169.4-169.8125 MHz	Short Range Devices
ECC/DEC/(05)05 - IMT-2000/UMTS	IMT
ECC/DEC/(05)08 on the availability of frequency bands for High Density applications in the FSS (s-E and E-s)	Satellite systems (civil)
ECC/DEC/(05)09 - Earth Stations FSS	FSS Earth stations
ECC/DEC/(05)10 - Earth Stations FSS	Satellite systems (civil)
ECC/DEC/(05)11 - free circulation – AES	Aeronautical satcoms
	AES
ECC/DEC/(05)12 - PMR 446	PMR 446
ECC/DEC/(06)01 - IMT-2000/UMTS	IMT
ECC/DEC/(06)02 on Exemption from Individual Licensing of low e.i.r.p. Satellite Terminals LEST	LEST
ECC/DEC/(06)03 on Exemption from Individual Licensing of high e.i.r.p. Satellite Terminals HEST with e.i.r.p above 34dBW	HEST
ECC/DEC/(06)04 on the harmonised conditions for devices using Ultra-Wideband (UWB) technology in bands below 10.6 GHz	UWB applications

ECC/DEC/(06)05 - Air-Ground-Air	AGA communications (civil)
ECC/DEC/(06)06 - PMR/PAMR	PMR/PAMR
ECC/DEC/(06)07 - airborne GSM 1710-1785/1805-1880MHz	GSM
	MCA
ECC/DEC/(06)09 - MSS incl CGC	CGC
	MSS Earth stations
ECC/DEC/(06)10 on transitional arrangements for the FS and tactical relay systems	MSS Earth stations
ECC/DEC/(06)13 on designation of the bands for terrestrial IMT-2000/UMTS systems	IMT-2000 satellite component
	IMT
ECC/DEC/(07)02 on availability of frequency bands between 3400-3800 MHz for the harmonised implementation of BWA	Point-to-Multipoint
ECC/DEC/(08)01 - ITS in 6 GHz band	ITS
ECC/DEC/(08)05 on the harmonisation of frequency bands for the implementation of digital PPDR radio applications	PMR/PAMR
ECC/DEC/(09)01 – ITS	ITS
ECC/DEC/(09)02 - MSS-1610-1626.5 and 2483.5-2500MHz	MSS Earth stations
ECC/DEC/(09)03 on harmonised conditions for Mobile/Fixed Communications Networks (MFCN) operating in 790-862 MHz	TRA-ECS
ECC/DEC/(09)04 on exemption from individual licensing and the free circulation and use of transmit-only mobile satellite	MSS Earth stations
ECC/DEC/(10)01 on sharing conditions in the 10.6-10.68 GHz band between the FS, MS and EESS (passive)	Fixed
	Passive sensors (satellite)
ECC/DEC/(10)02 on compatibility between the FSS in the 30-31 GHz and EESS (passive) in the 31.3-31.5 GHz band	FSS Earth stations
	Passive sensors (satellite)
ECC/DEC/(11)01 on the protection of EESS in the band 1400-1427 MHz	Passive sensors (satellite)
ECC/DEC/(11)02 on the industrial Level Probing Radars (LPR)	LPR
ECC/DEC/(11)03 for CB	CB radio
ECC/DEC/(11)04 - PMR/PAMR/PPDR	PMR/PAMR
	PPDR
ECC/DEC/(11)06 - MFCN	MFCN
ECC/REC/(01)04 – (rev. 2010) guidelines for assignment in the band 40.5-43.5 GHz	MWS, Point-to-Point

ECC/REC/(01)05 - List of parameters of digital point-to-point fixed radio links used for national planning	Point-to-Point
ECC/REC/(02)01 on specification of reference receiver performance parameters	Amateur
	On-site paging
ECC/REC/(02)02 - Digital Fixed Service 31 GHz	Fixed
ECC/REC/(02)06 -FS channelling at 7/8 GHz	Fixed
ECC/REC/(02)09 on Protection of Aeronautical Radio Navigation Service in 2700-2900 MHz from interference ...	Aeronautical navigation
ECC/REC/(04)05 - FWS 3.4-3.6 and 3.6-3.8 GHz	BFWA
ECC/REC/(05)02 - 64-66 GHz Fixed Service	Fixed
ECC/REC/(05)06 on CEPT Novice Radio Amateur Licence	Amateur
ECC/REC/(05)07 - Fixed Service 71-76 / 81-86 GHz	Fixed
ECC/REC/(05)08 - GSM900, GSM1800, E-GSM, GSM-R	GSM-R
ECC/REC/(06)04 – BFWA	BWA
ECC/REC/(08)01 - ITS in the band 5855-5875 MHz	ITS
ECC/REC/(08)02 - GSM900/UMTS900/GSM1800-UMTS1800	GSM
	UMTS
ECC/REC/(08)04 - BBDR in 5 GHz	BBDR
ECC/REC/(09)01 - Point-to-Point Fixed Wireless 57-64 GHz	Point-to-Point
ECC/REC/(10)01 on Guidelines for compatibility between CCG operating in the band 2170-2200 MHz and EESS/SOS/SRS earth..	CGC
	Satellite systems (civil)
ECC/REC/(10)02 on a framework for authorisation regime of Global Navigation Satellite System (GNSS) repeaters	Short Range Devices
	GNSS Repeaters
ECC/REC/(10)03 on LRC for non-solas vessels	GMDSS
ECC/REC/(11)01 on guidelines for frequency blocks for Fixed services in the bands 24.5-26.5 GHz, 27.5-29.5 GHz and 31.8-33.4 GHz	Fixed
ECC/REC/(11)04 on frequency planning and frequency coordination for terrestrial systems for MFCN ...	MFCN
ECC/REC/(11)05 - Mobile/Fixed in 2500-2690 MHz	MFCN
ECC/REC/(11)08 on GNSS Pseudolites	GNSS Pseudolites
ECC/REC/(11)09 - Location Tracking Type 2	UWB applications

ECC/REC/(11)10 - LAES	UWB applications
ECO Report 1: Dynamic evolution of RFID market (Inventory and Forecasts)	RFID Tracking, tracing and data acquisition
ECO Report 3: The licensing of 'Mobile bands' in CEPT	Digital cellular IMT GSM
ERC Report 060 on Global circulation of IMT-2000 terminals	IMT-2000 satellite component IMT
ERC Report 062 - compatibility analysis	GSM-R
ERC Report 063 - Radio Microphones applications	Radio microphones
ERC Report 064 - UMTS and fixed link sharing	IMT
ERC Report 065-adjacent band compatibility	IMT
ERC Report 067 on HIPERLANs and feeder links	Wideband data transmission systems
ERC Report 069 - interference calculation	Inductive applications
ERC Report 70 - Compatibility between MSS (s-E) in 1559-1567 MHz and ARNS/RNSS incl GNSS in 1559-1610 MHz	MSS Earth stations GNSS
ERC Report 71 - Sharing studies between the unwanted emissions of MSS mobile earth stations	MSS Earth stations GNSS
ERC Report 72 - Compatibility studies related to the possible extension band for HIPERLAN at 5 GHz	Wideband data transmission systems
ERC Report 73 - Investigation of the possibilities of harmonising (licensing and fees for) the PMR service within CEPT adminis	PMR/PAMR
ERC Report 074 on RFID/Radio astronomy	Non-specific SRDs Radio astronomy
ERC Report 075 Narrowband return path two way paging compatibility studies in the 406.1-410/440-470/862-871 MHz bands	PMR/PAMR Paging
ERC Report 079 on Chester Agreement	DVB-T
ERC Report 080 - One stop shopping for satellite licences and authorisations	FSS Earth stations

ERC Report 081 on GSM/RSBN	GSM
ERC Report 085 on DVB-T/Radio astronomy	Radio astronomy
ERC Report 086 on TETRA/GSM-R	PMR/PAMR
ERC Report 087 on sharing studies between MES and existing terrestrial services	S-PCS
ERC Report 088 on DVB-T and radio microphones	Broadcasting (terrestrial)
	SAP/SAB and ENG/OB
	Radio microphones
ERC Report 089 on DVB-T and talkback	SAP/SAB and ENG/OB
ERC Report 090 on DVB-T and OB	SAP/SAB and ENG/OB
ERC Report 091on unwanted emissions	MSS Earth stations
ERC Report 092 - sharing with SRD	Defence systems
	Inductive applications
ERC Report 093 - compatibility study concerning mobile meteor burst communication systems	Meteor scatter communications
ERC Report 094 - Meteor scatter applications	Meteor scatter communications
ERC Report 095 - Inductive applications	Inductive applications
ERC Report 096 - Inductive applications	Inductive applications
ERC Report 097 - Fixed Wireless Access (FWA) spectrum engineering & frequency management guidelines (qualitative)	FWA
ERC Report 098 on SRDs/TETRA/CT2	Wireless audio applications
	PMR/PAMR
	Short Range Devices
	Social alarms
ERC Report 099 on FWA	Point-to-Multipoint
ERC Report 100 on DECT/GSM	GSM
ERC Report 103 on TETRA and TETRAPOL	PMR/PAMR
ERC Report 104 on TETRA	PMR/PAMR
ERC Report 105 - Review of PMR fees	PMR/PAMR

ERC Report 106 on supplementary information to Annex 5 of the Chester Agreement	DVB-T
	DVB-T
ERC Report 107 - Current and future use of frequencies in the LF- MF and HF bands	Inductive applications
	Broadcasting (terrestrial)
	Standard frequency and time signal
ERC Report 109 - compatibility with Bluetooth	Short Range Devices
	Non-specific SRDs
	Radio LANs
	RFID
ERC Report 110 on handling and usage of Emergency Position Indicating Radio Beacon (EPIRB) to prevent false alerts	EPIRBs
ERC Report 25 - ECA 9 kHz to 3000 GHz	All
ERC Report 72- Compatibility studies for HIPERLAN at 5 GHz	Wideband data transmission systems
ERC/DEC/(00)02 - use by FS and FSS in 37.5-40.5 GHz	FSS Earth stations, Fixed
ERC/DEC/(00)06 on the licensing and global circulation and use of IMT-2000 terrestrial and satellite mobile terminals	IMT
	IMT
ERC/DEC/(00)07 - sharing between FS and FSS	FSS Earth stations, Fixed
ERC/DEC/(00)08 - FS, FSS and BSS 10.7-11.7 GHz	FSS Earth stations, Fixed
ERC/DEC/(01)08 - Detection of avalanche victims	Detection of avalanche victims
ERC/DEC/(01)11 - Flying Model Control	Model control
ERC/DEC/(01)12 - SRDs Model control	Model control
ERC/DEC/(01)17 - ULP AMI	Medical implants
ERC/DEC/(01)19 - DMO band designation	PPDR
	PPDR
ERC/DEC/(94)01 on the frequency bands to be designated for the coordinated intro of the GSM Digital pan-European com.	GSM
ERC/DEC/(94)03 on the frequency band to be designated for the coordinated introduction of the GSM Digital pan-European	DECT
ERC/DEC/(95)03 on the frequency bands to be designated for the introduction of DCS 1800	GSM

ERC/DEC/(97)02 on the extended frequency bands to be used for the GSM Digital Pan-European Communications system	GSM
ERC/DEC/(97)11 on free circulation and use of DCS 1800 mobile terminals in CEPT member countries ...	GSM
ERC/DEC/(98)15 - licensing of Omnitracs	FSS Earth stations
ERC/DEC/(98)20 on exemption from individual licensing of GSM mobile terminals	GSM
ERC/DEC/(98)21 on Exemption from Individual Licensing of DCS 1800 (also known as GSM 1800) mobile terminals	GSM
ERC/DEC/(98)22 on Exemption from Individual Licensing of DECT equipment except fixed parts provide for public access	DECT
ERC/DEC/(98)25 on the harmonised frequency band to be designated for PMR 446	PMR 446
ERC/DEC/(99)05 on free circulation and licensing	MSS Earth stations
	S-PCS
ERC/DEC/(99)06 - band designation	S-PCS
ERC/DEC/(99)15 – (rev. 2010) on the designation of the harmonised band 40.5-43.5 GHz for the introduction of MWS and Point-to-Point FWS	MWS, Point-to-Point
ERC/DEC/(99)17 - on the Automatic Identification and Surveillance system (AIS) channels in the maritime VHF band	AIS
ERC/DEC/(99)26 - licensing of ROES	FSS Earth stations
ERC/REC 01-02 - channel arrangement 32 GHz	Fixed
ERC/REC 12-02 - channel arrangements 13 GHz	Fixed
ERC/REC 12-03 on harmonised radio frequency channel arrangements for digital terrestrial fixed systems 18 GHz	Fixed
ERC/REC 12-05 - channel arrangements 10.5 GHz	Point-to-Multipoint, Point-to-Point
ERC/REC 12-06 - digital terrestrial fixed systems 11 GHz	Fixed, Point-to-Point
ERC/REC 12-07 - channel arrangements 15 GHz	Fixed
ERC/REC 12-08 - channel arrangements 4 GHz	Fixed, Point-to-Point
ERC/REC 12-10 - channel arrangements 50 GHz	Fixed
ERC/REC 12-11 - channel arrangements 52 GHz	Fixed
ERC/REC 12-12 - channel arrangements 55 GHz	Fixed
ERC/REC 13-03 - VSAT and SNG	VSAT
ERC/REC 14-01 - digital radio-relay systems Lower 6 GHz	Fixed, Point-to-Point
ERC/REC 14-02 - digital FS systems Upper 6 GHz	Fixed, Point-to-Point

ERC/REC 14-03 - channel arrangement 3.4-3.6 GHz	Fixed
ERC/REC 25-10 Audio and Video SAP/SAB	SAP/SAB and ENG/OB
	SAP/SAB airborne video links
	Cordless cameras
	SAP/SAB vehicular video links
	SAP/SAB P to P video links
	Cordless cameras
	SAP/SAB portable video links
ERC/REC 54-01 - FM Broadcast emissions	FM sound analogue
ERC/REC 62-02 on harmonised frequency band for civil and military airborne telemetry applications	Aeronautical telemetry
ERC/REC 70-03 - Annex 1: Non-specific SRDs	Non-specific SRDs
ERC/REC 70-03 - Annex 10 Radio microphones and Assistive Listening Devices	Radio microphones and ALD
ERC/REC 70-03 - Annex 11: Radio frequency identification applications (RFID)	RFID
ERC/REC 70-03 - Annex 12: Active Medical Implants and their associated peripherals	Medical implants
ERC/REC 70-03 - Annex 13: Wireless Audio applications	Wireless audio applications
ERC/REC 70-03 - Annex 2: Tracking, Tracing and Data acquisition	Asset tracking and tracing
ERC/REC 70-03 - Annex 3: Wideband Data Transmission systems	Radio LANs
	Wideband data transmission systems
ERC/REC 70-03 - Annex 4: Railway applications	Eurobalise
	Railway applications
	Euroloop
ERC/REC 70-03 - Annex 5: Road Transport & Traffic Telematics (RTTT)	RTTT
ERC/REC 70-03 - Annex 6: Radiodetermination applications	Detection of movement and alert
	Radiodetermination applications
	GBSAR

	TLPR
	LPR
ERC/REC 70-03 - Annex 7: Alarms	Social alarms
	Alarms
ERC/REC 70-03 - Annex 8: Model Control	Model control
ERC/REC 70-03 - Annex 9: Inductive applications	Inductive applications
T/R 12-01 - Digital terrestrial FS 38 GHz	Fixed, Point-to-Point
T/R 13-01 - Fixed Service1-2.3 GHz	Fixed
T/R 13-02 - Fixed Service 23, 26 and 28 GHz	Fixed
T/R 25-08 - Land Mobile 29.7-921 MHz	Land mobile
T/R 32-02 on frequencies to be used by on-board communication stations	On-board communications
T/R 61-01 on CEPT Radio Amateur Licence	Amateur
T/R 61-02 on harmonised amateur radio examination certificates	Amateur

ANNEX 8: LIST OF REFERENCE

[1] ECC/DEC/(01)03: ECC Decision of 15 November 2001 on ECO Frequency Information System (EFIS) amended 25 June 2010;
[2] 2007/344/EC: Commission Decision of 16 May 2007 on harmonized availability of the information regarding spectrum use within the community;
[3] CEPT Report 11: Report from CEPT to the European Commission in response to the Mandate on: EFIS (ERO Frequency Information System);
[4] ANNEX 3 to doc RA(11)086, September 2011]: Internal ECC Report on implementation of the RIS template;
[5] Commission Decision 676/2002/EC: of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision);
[6] on a common regulatory framework for electronic communications networks and services (Framework Directive);
[7] ECC Decision (03)05: ECC Decision of 17 October 2003 on the publication of national tables of frequency allocations and utilisations;
[8] Directive 95/46/EC: of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data;
[9] Directive 2002/58/EC: of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications);
[10] Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services (Authorisation Directive)
[11] Directive 2002/21/EC: of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services
[12] ERC Report 25: European Common Allocations Table
[13] ETSI EG 201 788: Guide for the creation of ETSI System Reference Documents
[14] Directive 99/5/EC of the European Parliament and of the Council on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity(RTTE Directive)
[15] Commission Decision 2010/267/EU on harmonised technical conditions of use in the 790-862 MHz frequency band for terrestrial systems capable of providing electronic communications services in the European Union
[16] Council Directive 87/372/ECC on the frequency bands to be reserved for the coordinated introduction of public pan-European cellular digital land-based mobile communications in the Community (GSM)
[17] Commission Decision 2009/766/EC on the harmonisation of the 900 MHz and 1800 MHz frequency bands for terrestrial systems capable of providing pan-European electronic communications services in the community
[18] Commission Decision 2008/477/EC on the harmonisation of the 2500-2690 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community
[19] Commission Decision 2008/411/EC on the harmonisation of the 3400 - 3800 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community
[20] Directive 2009/114/EC of the European Parliament and of the Council amending Council Directive 87/372/EEC on the frequency bands to be reserved for the coordinated introduction of public pan-European cellular digital land-based mobile communications in the Community
[21] ECC(08)38: TCAM-RSC RIG II update (RIS model)
[22] Commission Decision No 243/2012/EU of the European Parliament and of the Council of 14 March 2012 establishing a multiannual radio spectrum policy programme
[23] CEPT Report 11: Report from CEPT to the European Commission in response to the Mandate on EFIS
[24] RSPG12-408: RSPG Opinion on Review of Spectrum Use