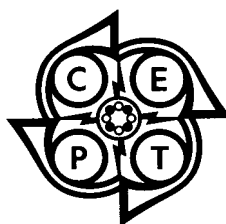


ELECTRONIC COMMUNICATIONS COMMITTEE

ECC Decision
of 15 November 2001
on ERO Frequency Information System (EFIS)

(ECC/DEC/(01)03)



EXPLANATORY MEMORANDUM

1 INTRODUCTION

Understanding how frequencies are actually utilised is an important step in harmonising spectrum within Europe and beyond. Industry, the European Commission and administrations have expressed a strong interest in having a database containing frequency utilisation information that is comparable across Europe.

Its purpose would be

- to give the CEPT a tool to illustrate the extent of harmonisation within Europe,
- to allow administrations to quickly search for and compare spectrum utilisation information of other

CEPT countries, and

- to meet the European Commission and industry requirements that have been made known to CEPT at many occasions.

The ERO made a proposal to develop the ERO Frequency Information System (EFIS) that would fulfil this purpose. The development of EFIS takes place in close collaboration with those that have to input information into EFIS (i.e. administrations) and those that will use the information contained in EFIS (i.e. administrations, industry and other interested parties). Comments from EICTA (European Information and Communications Technology Industry association) and ETSI (European Telecommunications Standards Institute) have been received encouraging CEPT to develop EFIS and signaling that industry is willing to support this process with their expertise.

2 BACKGROUND

The issue of frequency databases has been discussed for some time and it is evident that there are many different approaches that have been taken on the national level in presenting frequency data. Discussions have also shown that administrations are reluctant to having all national frequency data collected in one central place and to providing additional resources beyond those needed on the national level.

EFIS can basically be described as a search engine that allows the user to search for a specific utilisation in one or more CEPT countries, thus enabling a comparison between the Radio Regulations, the European table (ERC Report 25) and current national utilisations. The result of the search is a list of frequency bands or a frequency range showing the relevant allocations and applications. Further details are not necessarily contained in EFIS, but can be accessed via a link to the relevant national table or to other important documents. The limitation of the actual database to concise information simplifies the task and the expected workload, while providing a commonly accessible search and comparison tool that complements and adds value to the national initiatives.

One of the main objectives of EFIS is to ensure that it provides good quality information, which is regularly updated and maintained. This ECC Decision is the mechanism for ensuring that this objective is met. Furthermore, this ECC Decision provides two lists of harmonised terms, which are essential for making an efficient and meaningful search for frequency information. Especially the List of Searchable Applications in Annex 2, is an important part of EFIS, because it describes the utilisation of a certain frequency band. This is key information that industry is interested in and the terms provide the starting point for a more detailed search in the national frequency tables, which are established and maintained by administrations.

Just like the List of Radio Services in the ITU RR in Annex 1, the List of Searchable Applications in Annex 2 has several layers of detail that allow administrations to choose the level of detail it would like to indicate within a certain frequency band. When searching for and comparing information EFIS makes use of these layers. For example, a search for a specific term in layer 2 will automatically start a search for all terms in layer 3 under that specific term. This functionality allows for an efficient and meaningful comparison, even though each administration has the flexibility to choose the level of detail it would like to indicate in a specific band.

3 REQUIREMENT FOR AN ECC DECISION

Administrations have developed different formats for presenting national frequency utilisation information. Furthermore, it is often difficult to compare the information contained in the numerous national tables, because of different expressions and languages being used. Consequently, there is a need for a tool that provides administrations, industry and the interested public with comparable spectrum information. This information will then lead the user to more detailed information on the national level or it will give a reliable picture of the spectrum harmonisation that has been achieved in Europe. For this tool to be successful administrations must agree upon a harmonised list of terms to be used as well as a procedure that will ensure that the information that has been collected is updated regularly and of good quality.

An ECC Decision will ensure that the harmonised terms and procedures, which are essential for the success of the system, are used by administrations and ERO when entering data into EFIS.

**ECC Decision
of 15 November 2001**

on ERO Frequency Information System (EFIS)

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"The European Conference of Postal and Telecommunications Administrations,

considering

- a) that administrations, industry, and the European Commission have expressed a strong interest in having a database containing frequency utilisation information that is comparable across Europe;
- b) that EFIS is designed to fulfil this requirement;
- c) that the data collected in EFIS is to be used for a meaningful search and comparison of spectrum information available within CEPT member countries;
- d) that for EFIS to be successful administrations must agree upon a harmonised list of terms to be used as well as a procedure that will ensure that the information that has been collected is updated regularly and of good quality;
- e) the decision taken at the 12th meeting of the ERO Council to make available the necessary resources within ERO in order to fulfil the tasks required under this Decision;
- f) that the List of Searchable Applications aims to facilitate an efficient and meaningful search and not a legally binding description of the applications used on the national level;
- g) there is a need to administer and further develop EFIS;
- h) that there is a need to establish a contact person within each administration for the maintenance of the national frequency information;
- i) that the future development of EFIS should take into account the R&TTE Directive 1999/5/EC, Proposal for a Decision of the European Parliament and Council on a regulatory framework for radio spectrum policy in the EC, the ERC/DEC(97)01 and its future revisions on publication of National Tables of Frequency Allocations (NTFAs) and the publication of national frequency utilisation information;
- j) that there is considerable difference in national licensing, laws and regulations;
- k) that there is a need to limit the amount of resources needed to update and maintain EFIS as far as possible;
- l) that the duplication of information should be avoided as far as possible;
- m) that the availability of NTFAs in the English language and in PDF format would be preferable.

DECIDES

1. Administrations shall enter and maintain the following mandatory data into EFIS:
 - a) Spectrum Allocations on a national level according to the List of Radio Services in the ITU RR in Annex 1;
 - b) Spectrum Applications on a national level according to the List of Searchable Applications in Annex 2;
 - c) A Contact Person within the Administration who will be responsible for the maintenance of the national frequency information related to EFIS.
2. Administrations may enter and maintain the following optional data into EFIS:
 - a) Short comments related to an allocation or application;
 - b) Documents or hyperlinks that can be filed within EFIS according to a frequency band, an application or both (e.g. related to Activities or R&TTE interface information).
3. Administrations shall provide ERO with a copy of their most detailed public national frequency table (e.g. NTFA or frequency utilisation table) in a format acceptable to ERO. The table should be sent to ERO no later than one week after publication.
4. ERO shall¹ enter and maintain the data in EFIS related to the Radio Regulations (Region 1), the European Table of Frequency Allocations and Utilisations, and other appropriate tables that are not maintained by an administration.
5. ERO shall¹ administer EFIS and execute further developments of EFIS according to agreements reached in the ECC and the ERO Council.
6. For uploading or downloading data to or from EFIS by administrations, the Harmonised Interface in Annex 3 shall be used. Administrations with a national frequency database are encouraged to develop a software tool that will allow automatic transfer of relevant data from their database into EFIS. This will allow for easy updating and maintenance of allocations and applications.
7. The List of Radio Services in the ITU RR, the List of Searchable Applications and the Harmonised Interface are the valid versions when this Decision comes into force. Depending on regulatory and market developments, the ECC or a delegated subgroup may develop new versions of these annexes subject to positive acceptance by administrations that have committed themselves to this Decision. ERO shall¹ archive all versions and distribute any new versions to all Contact Persons stating when the new version will come into force. The List of Searchable Applications shall be reviewed at least once a year through a procedure initiated by ERO.
8. that this Decision shall enter into force on 1 January 2002;
9. that CEPT Member Administrations shall communicate the national measures implementing this Decision to the ECC Chairman and the Office when the Decision is nationally implemented.

Note:

Please check the CEPT web site (<http://www.CEPT.org>) for the up to date position on the implementation of this and other ECC Decisions.

¹ Subject to approval by the ERO Council

ANNEX 1

LIST OF RADIO SERVICES IN THE ITU RADIO REGULATIONS (RR)

This is the list of services, which have an allocation in Article S5 of the RR.

For the purpose of this decision the List of Radio Services in the ITU RR is divided into three layers of detail in accordance with the definitions given in the RR. When searching for and comparing information EFIS makes use of these layers. For example, a search for a specific term in layer 2 will automatically start a search for all terms in layer 3 under that specific term. If nothing is found in either layer 2 or 3, EFIS also checks layer 1 and informs the user if there is a hit.

Layer 1	Layer 2	Layer 3
Amateur		
<u>Amateur-Satellite</u>		
Broadcasting		
Broadcasting-Satellite		
<u>Earth Exploration-Satellite</u>	Earth Exploration-Satellite (active) Earth Exploration-Satellite (passive) <u>Meteorological-Satellite</u>	
Fixed		
<u>Fixed-Satellite</u>		
Inter-Satellite		
Mobile	Aeronautical Mobile Land Mobile Maritime Mobile Mobile (distress and safety) Mobile except aeronautical mobile Mobile except aeronautical mobile (R)	Aeronautical Mobile (R) Aeronautical Mobile (OR) Maritime Mobile (distress and safety)
<u>Mobile-Satellite</u>	<u>Aeronautical Mobile-Satellite</u> <u>Land Mobile-Satellite</u> <u>Maritime Mobile-Satellite</u> <u>Mobile-satellite except aeronautical mobile-satellite</u> <u>Mobile-satellite except aeronautical mobile-satellite (R)</u>	<u>Aeronautical Mobile-Satellite (R)</u> <u>Aeronautical Mobile-Satellite (OR)</u>
Meteorological Aids		
Radio Astronomy		
Radiodetermination	Radionavigation Radiolocation	Aeronautical Radionavigation Maritime Radionavigation

<u>Radiodetermination-Satellite</u>	<u>Radionavigation-Satellite</u> <u>Radiolocation-Satellite</u>	<u>Aeronautical Radionavigation-Satellite</u> <u>Maritime Radionavigation-Satellite</u>
<u>Space Operation</u>		
<u>Space Research</u>	Space Research (active) <u>Space Research (deep space)</u> Space Research (passive)	
Standard Frequency and Time Signal		
<u>Standard Frequency and Time Signal-Satellite</u>		

N.B.:

For all **bolded** services it is possible to give them none, one or more of the following 3 attributes:

(space-to-Earth)

(Earth-to-space)

(space-to-space)

For example:

Fixed-Satellite (space-to-Earth) (Earth-to-space)

Space Operation (Earth-to-space) (space-to-space)

ANNEX 2

LIST OF SEARCHABLE APPLICATIONS

Explanatory Note

The list of Searchable Applications has been developed in order to allow an efficient and meaningful search for frequency information within Europe. It is based on the following principles:

1. The list should facilitate an efficient and meaningful search and not a legally binding description of the Application terms used.
2. The list should only use unambiguous terms, which give clear guidance for data entry and retrieval.
3. The List of Searchable Applications is complementary to the List of Radio Services in the ITU RR and it is meant to describe the actual utilisation of the frequency bands. In other words, the List of Radio Services in the ITU RR gives the regulatory framework and the List of Searchable Applications gives the actual use.
4. The List of Searchable Applications should allow administrations to associate the terms used on a national level with the terms used in the list;

The List of Searchable Applications is divided into three layers of detail. This allows each administration to choose the level of detail it would like to indicate within a certain frequency band. When searching for and comparing information EFIS makes use of these layers. For example, a search for a specific term in layer 2 will automatically start a search for all terms in layer 3 under that specific term. If nothing is found in either layer 2 or 3, EFIS also checks layer 1 and informs the user if there is a hit. This functionality allows for an efficient and meaningful comparison, even though each administration has the flexibility to choose the level of detail it would like to indicate in a specific band.

Wherever possible administrations should use the highest detail possible (layer 3) when entering data into EFIS. In general, layer 3 only represents a few more specific expressions that do not necessarily cover all possible applications of the relevant term in layer 2. Those applications that are not covered by these more specific expressions are to be associated with the more general term in layer 2 or even in Layer 1, if necessary.

Due to the fact that some detailed applications can belong to 2 or even more general applications, e.g. the detailed application GPS can be regarded as an aeronautical, maritime or military application, they may show up several times in the list when presented in hierarchical mode. In alphabetical presentation mode each term in the list is only mentioned once.

The abbreviations used in the list are described at the end of this annex.

Layer 1	Layer 2	Layer 3
Aeronautical	<p>Aeronautical communications</p> <p>Aeronautical navigation</p> <p>Aeronautical surveillance</p> <p>Aeronautical telemetry</p> <p>Satellite navigation systems</p>	<p>AGA communications (civil)</p> <p>Aeronautical satcoms</p> <p>SAR (communications)</p> <p>TFTS</p> <p>Beacons (aeronautical)</p> <p>Airborne weather radar</p> <p>Airborne doppler navigation aids</p> <p>Altimeters</p> <p>ASDE</p> <p>DME</p> <p>ILS</p> <p>Loran C</p> <p>MLS</p> <p>SAR (navigation)</p> <p>VOR</p> <p>ADS</p> <p>ASDE</p> <p>Primary radar</p> <p>SSR</p> <p>Galileo</p> <p>GPS</p> <p>Glonass</p>
Broadcasting	<p>Broadcasting (terrestrial)</p> <p>Broadcasting-satellite receivers</p> <p>SAP/SAB and ENG/OB</p>	<p>AM sound analogue</p> <p>DRM</p> <p>FM sound analogue</p> <p>MWS</p> <p>TV analogue (terrestrial)</p> <p>T-DAB</p> <p>DVB-T</p> <p>Satellite radio</p> <p>Satellite TV</p> <p>SIT/SUT</p> <p>In-ear monitors</p> <p>Professional cordless cameras</p> <p>Professional radio microphones</p> <p>SAP/SAB airborne video links</p> <p>SAP/SAB engineering links</p> <p>SAP/SAB remote control</p> <p>SAP/SAB P to P audio links</p> <p>SAP/SAB P to P video links</p> <p>SAP/SAB vehicular audio links</p> <p>SAP/SAB vehicular video links</p> <p>Talkback</p>

Layer 1	Layer 2	Layer 3
Fixed links	Point-to-Multipoint Point-to-Point Multipoint-to-Multipoint (Mesh)	MWS Scanning telemetry Subscriber access excluding MWS Unplanned, uncoordinated fixed links Private fixed networks Public fixed networks SAP/SAB P to P audio links SAP/SAB P to P video links Unplanned, uncoordinated fixed links
Defence systems	Aeronautical military systems Land military systems Maritime military systems Meteorological aids (military) Radiolocation (military) Satellite systems (military) Telemetry (military)	AGA communications (military) Beacons (tactical) IFF JTIDS/MIDS RSBN TACAN-DME Fixed radio relay (military) Tactical radio relay Tactical mobile Sonobuoy Tactical radar Air-defence radar Earth exploration-satellite (military) GPS Glonass Satellite communications (military)
Land mobile	Digital cellular Analogue cellular Cordless telephones Emergency services Inland waterway communications Paging PMR/PAMR	GSM GSM-R IMT-2000/UMTS NMT TACS DECT CT1 CT1+ CT2 ERMES On-site paging Wide area paging DMO PMR 446 TETRA TETRAPOL

Layer 1	Layer 2	Layer 3
	<p>SAP/SAB and ENG/OB</p> <p>Telemetry (civil)</p>	<p>In-ear monitors Professional cordless cameras Professional radio microphones SAP/SAB airborne video links SAP/SAB engineering links SAP/SAB remote control SAP/SAB P to P audio links SAP/SAB P to P video links SAP/SAB vehicular audio links SAP/SAB vehicular video links Talkback</p> <p>Scanning telemetry</p>
Maritime	<p>GMDSS</p> <p>Satellite navigation systems</p> <p>Maritime communications</p> <p>Maritime navigation</p>	<p>DSC EPIRBs MSI NAVTEX SAR (communications) SAR (navigation)</p> <p>Galileo GPS Glonass</p> <p>AIS Inland waterway communications INMARSAT Port operations On-board communications Ship movement</p> <p>Beacons (maritime) Inland waterway radar Loran C Maritime radar SAR (navigation)</p>
Meteorology	<p>Oceanographic buoys</p> <p>Sondes</p> <p>Weather radar</p> <p>Weather satellites</p> <p>Wind profilers</p>	
Satellite systems (civil)	<p>Aeronautical satcoms</p> <p>Amateur-satellite</p> <p>Broadcasting-satellite receivers</p> <p>Earth exploration-satellite</p> <p>Feeder links</p> <p>FSS Earth stations</p>	<p>INMARSAT</p> <p>Satellite radio Satellite TV SIT/SUT</p> <p>Active sensors (satellite) Passive sensors (satellite) Synthetic aperture radar Weather satellites</p> <p>VSAT SIT/SUT SNG ESV</p>

Layer 1	Layer 2	Layer 3
	Inter-satellite links MSS Earth stations Satellite navigation systems Standard frequency and time signal-satellite Space operations Space research	INMARSAT IMT-2000 satellite component S-PCS Galileo GPS Glonass Active sensors (satellite) Deep space (satellite) Passive sensors (satellite)
Radio astronomy	Continuum measurements Spectral line observations VLBI observations	
Short range devices	Alarms Railway applications Detection of avalanche victims Detection of movement Inductive applications Medical implants Model control Non-specific SRDs Radio microphones Radio LANs RFID RTTT Wireless audio applications	Social alarms AVI Eurobalise Euroloop Model aircraft control Professional radio microphones Consumer radio microphones HIPERLANs
Other	Amateur CB radio D-GPS HAPS ISM Meteor scatter communications Land radionavigation	AM CB PR 27 Microwave ovens
	Radiolocation (civil) Standard frequency and time signal Tracking systems	

ABBREVIATIONS

ADS	Automatic Dependant Surveillance (Aeronautical)
AIS	Universal Shipborne Automatic Identification System
AGA	Air-Ground-Air
AM	Amplitude Modulation
ASDE	Airport Surface Detection Equipment
AVI	Automatic Vehicle Identification
CB	Citizen's Band
CT	Cordless Telephone
DECT	Digital Enhanced Cordless Telecommunications
D-GPS	Differential Global Positioning System
DME	Distance Measuring Equipment
DMO	Direct Mode Operation (PMR)
DRM	Digital Radio Mondiale
DSC	Digital Selective Calling
DVB-T	Digital Video Broadcasting - Terrestrial
ENG/OB	Electronic News Gathering / Outside Broadcasting
EPIRBs	Emergency Position Indicating Radio Beacons
ERMES	Enhanced Radio Messaging System
ESV	Earth Stations on-board Vessels
FM	Frequency Modulation
FSS	Fixed-Satellite Service
GMDSS	Global Maritime Distress and Safety System
GPS	Global Positioning System
GSM	Global System for Mobile Communications
GSM-R	Global System for Mobile Communications on Railways
HAPS	High Altitude Platform Station
HIPERLANs	High Performance Radio Local Area Networks
IFF	Identification Friend or Foe
ILS	Instrument Landing System
IMT-2000	International Mobile Telecommunications-2000
ISM	Industrial, Scientific and Medical Applications
JTIDS	Joint Tactical Information and Distribution System
LANs	Local Area Networks
MIDS	Multifunctional Information Distribution System
MLS	Microwave Landing System
MSI	Maritime Safety Information
MSS	Mobile-Satellite Service

MWS	Multimedia Wireless System
NAVTEX	Narrow-band direct-printing telegraphy system for transmission of navigational and meteorological warnings and urgent information to ships
NMT	Nordic Mobile Telephone
PAMR	Public Access Mobile Radio
PMR	Private (Professional) Mobile Radio
RFID	Radio Frequency Identification
RSBN	Radiolocation System for Short Range Navigation (Abbreviation stands for the Russian term)
RTTT	Road Transport and Traffic Telematics
SAB	Service Ancillary to Broadcasting
SAP	Service Ancillary to Programme making
SAR	Search and Rescue
S-PCS	Satellite - Personal Communications System
SIT/SUT	Satellite Interactive Terminal / Satellite User Terminal
SNG	Satellite News Gathering
SRDs	Short Range Devices
SSR	Secondary Surveillance Radar
TACAN	Tactical Air Navigation
TACS	Total Access Communications System
T-DAB	Terrestrial Digital Audio Broadcasting
TETRA	Terrestrial Trunked Radio
TETRAPOL	Digital PMR technology
TFTS	Terrestrial Flight Telecommunication System
TV	Television
UMTS	Universal Mobile Telecommunications System
VLBI	Very Long Baseline Interferometry
VOR	VHF Omnidirectional Radio Range
VSAT	Very Small Aperture Terminal

ANNEX 3

EFIS

HARMONISED INTERFACE

The EFIS Harmonised Interface can be used for uploading or downloading data related to spectrum allocations and spectrum applications only. No other data is included from the start. However, if EFIS is developed further other types of data (e.g. radio interface parameters) might be added at a later stage.

The following Harmonised Interface shall be used:

1. The interface shall be an XML file;
2. The XML file has a defined structure, called the EFIS XML Format, which is defined by the Document Type Definition (DTD) given below;
3. The terms used for allocations and applications shall be taken from the List of Radio Services in the ITU RR (see Annex 1) and the List of Searchable Applications (see Annex 2);
4. All frequencies shall be written in Hertz, i.e. not in kHz, MHz or GHz.

DTD defining the EFIS XML Format:

```
<?xml encoding="UTF-8"?>
<!-- This simple DTD defines the import/export interface for use with the
EFIS system -->
<!-- Frequency values are to be specified in Hertz (1 - 999999999999 Hz) --
>
<!-- Terms are at most 100 characters -->
<!-- ShortComments are at most 100 characters -->
<!ELEMENT frequencyInformation (frequencyTable*)>
<!ELEMENT frequencyTable (allocation | application)*>
<!ELEMENT allocation EMPTY>
<!ELEMENT application EMPTY>
<!ATTLIST frequencyTable
    name ID #REQUIRED
>
<!ATTLIST allocation
    lowerFrequency CDATA #REQUIRED
    higherFrequency CDATA #REQUIRED
    term CDATA #REQUIRED
    status (primary | secondary) #REQUIRED
    shortComments CDATA #IMPLIED
>
<!ATTLIST application
    lowerFrequency CDATA #REQUIRED
    higherFrequency CDATA #REQUIRED
    term CDATA #REQUIRED
    shortComments CDATA #IMPLIED
>
```