# ELECTRONIC COMMUNICATIONS COMMITTEE

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

## (ECC/DEC/(01)03)
## (2007/344/EC)
### amended 5 October 2007

# 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.

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**ECC Decision**
**of 15 November 2001**

**on ERO Frequency Information System (EFIS)**

**(ECC/DEC/(01)03)**

**(2007/344/EC)**

**amended 5 September 2007**

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Comparable technical specifications to those given in this ECC Decision are given in EC Decision no. (2007/344/EC). EU Member States and, if so approved by the EEA Joint Committee, Iceland, Liechtenstein and Norway are obliged to implement the EC Decision.

"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 shall[1] 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 shall[1] 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 shall[1] 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 Office web site (http//:www.ero.dk) for the up to date position on the implementation of this and other ECC/ERC decisions.

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[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 | | |
| **Amateur-Satellite** | | |
| Broadcasting | | |
| Broadcasting-Satellite | | |
| **Earth Exploration-Satellite** | Earth Exploration-Satellite (active)<br>Earth Exploration-Satellite (passive)<br>**Meteorological-Satellite** | |
| Fixed | | |
| **Fixed-Satellite** | | |
| Inter-Satellite | | |
| Mobile | Aeronautical Mobile<br><br>Land Mobile<br>Maritime Mobile<br><br><br><br><br><br>Mobile (distress and safety)<br>Mobile (distress and calling)<br>Mobile (distress, safety and calling)<br>Mobile except aeronautical mobile<br>Mobile except aeronautical mobile (R) | Aeronautical Mobile (R)<br>Aeronautical Mobile (OR)<br><br><br>Maritime Mobile (distress and safety)<br>Maritime Mobile (distress and calling)<br>Maritime Mobile (distress, safety and calling) |
| **Mobile-Satellite** | **Aeronautical Mobile-Satellite**<br><br>**Land Mobile-Satellite**<br>**Maritime Mobile-Satellite**<br>**Mobile-satellite except aeronautical mobile-satellite**<br>**Mobile-satellite except aeronautical mobile-satellite (R)** | **Aeronautical Mobile-Satellite (R)**<br>**Aeronautical Mobile-Satellite (OR)** |
| Meteorological Aids | | |

| Layer 1 | Layer 2 | Layer 3 |
|---|---|---|
| Radio Astronomy | | |
| Radiodetermination | Radionavigation<br><br>Radiolocation | Aeronautical Radionavigation<br>Maritime Radionavigation |
| **Radiodetermination-Satellite** | **Radionavigation-Satellite**<br><br><br>**Radiolocation-Satellite** | **Aeronautical Radionavigation-Satellite**<br>**Maritime Radionavigation-Satellite** |
| **Space Operation** | | |
| **Space Research** | Space Research (active)<br>**Space Research (deep space)**<br>Space Research (passive) | |
| Standard Frequency and Time Signal | | |
| **Standard Frequency and Time Signal-Satellite** | | |

**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 | Aeronautical communications | AGA communications (civil)<br>Aeronautical satcoms<br>SAR (communications)<br>TFTS |
| | Aeronautical navigation | Beacons (aeronautical)<br>Airborne weather radar<br>Airborne doppler navigation aids<br>Altimeters<br>ASDE<br>DME<br>ILS<br>Loran C<br>MLS<br>SAR (navigation)<br>VOR |
| | Aeronautical surveillance | ADS<br>ASDE<br>Primary radar<br>SSR |
| | Aeronautical telemetry | |
| | Aeronautical telecommand | |
| | Aeronautical telemetry/telecommand | |
| | Satellite navigation systems | Galileo<br>GPS<br>Glonass |
| Broadcasting | Broadcasting (terrestrial) | AM sound analogue<br>DRM<br>FM sound analogue<br>MWS<br>TV analogue (terrestrial)<br>T-DAB<br>DVB-T |
| | Broadcasting-satellite receivers | Satellite radio<br>Satellite TV<br>SIT/SUT |
| | SAP/SAB and ENG/OB | In-ear monitor system<br>Cordless camera<br>Radio microphone<br>SAP/SAB portable audio link<br>SAP/SAB portable video link<br>SAP/SAB airborne video links<br>SAP/SAB engineering links<br>SAP/SAB remote control<br>SAP/SAB telecommand<br>SAP/SAB P to P audio links<br>SAP/SAB P to P video links<br>SAP/SAB vehicular audio links<br>SAP/SAB vehicular video links<br>Talkback |

| Layer 1 | Layer 2 | Layer 3 |
|---------|---------|---------|
| Fixed links | Point-to-Multipoint | MWS<br>Scanning telemetry<br>Subscriber access excluding MWS<br>Unplanned, uncoordinated fixed links |
| | Point-to-Point | Private fixed networks<br>Public fixed networks<br>SAP/SAB P to P audio links<br>SAP/SAB P to P video links<br>Unplanned, uncoordinated fixed links |
| | Multipoint-to-Multipoint (Mesh) | |
| | BWA | BFWA |
| Defence systems | Aeronautical military systems | AGA communications (military)<br>Beacons (tactical)<br>IFF<br>JTIDS/MIDS<br>RSBN<br>TACAN-DME |
| | Land military systems | Fixed radio relay (military)<br>Tactical radio relay<br>Tactical mobile |
| | Maritime military systems | Sonobuoy |
| | Meteorological aids (military) | |
| | Radiolocation (military) | Tactical radar<br>Air-defence radar |
| | Satellite systems (military) | Earth exploration-satellite (military)<br>GPS<br>Glonass<br>Satellite communications (military) |
| | Telemetry (military) | |
| | Telecommand (military) | |
| | Telemetry/Telecommand (military) | |
| Land mobile | Digital cellular | GSM<br>GSM-R<br>MCA<br>IMT-2000/UMTS<br>AES |
| | BWA | |
| | Analogue cellular | NMT<br>TACS |
| | Cordless telephones | DECT<br>CT0<br>CT1<br>CT1+<br>CT2 |
| | Emergency services | PLB |
| | Inland waterway communications | |

| Layer 1 | Layer 2 | Layer 3 |
|---|---|---|
| | Paging | ERMES<br>On-site paging<br>Wide area paging<br><br>Talkback pocket unit |
| | PMR/PAMR | PMR<br>PAMR<br>DMO<br>PMR 446<br>TETRA<br>TETRAPOL |
| | SAP/SAB and ENG/OB | In-ear monitor system<br>Cordless camera<br>Radio microphone<br><br>SAP/SAB portable audio link<br><br>SAP/SAB portable video link<br>SAP/SAB airborne video links<br>SAP/SAB engineering links<br>SAP/SAB remote control<br><br>SAP/SAB telecommand<br>SAP/SAB P to P audio links<br>SAP/SAB P to P video links<br>SAP/SAB vehicular audio links<br>SAP/SAB vehicular video links<br>Talkback |
| | Telemetry (civil) | Scanning telemetry |
| | Telecommand (civil) | |
| | Telemetry/Telecommand (civil) | |
| Maritime | GMDSS | DSC<br>EPIRBs<br>MSI<br>NAVTEX<br>SAR (communications)<br>SAR (navigation) |
| | Satellite navigation systems | Galileo<br>GPS<br>Glonass |
| | Maritime communications | AIS<br>Inland waterway communications<br>INMARSAT<br>Port operations<br>On-board communications<br>Ship movement |
| | Maritime navigation | Beacons (maritime)<br>Inland waterway radar<br>Loran C<br>Maritime radar<br>SAR (navigation) |
| Meteorology | Oceanographic buoys | |
| | Sondes | |
| | Weather radar | |
| | Weather satellites | |
| | Wind profilers | |

| Layer 1 | Layer 2 | Layer 3 |
|---|---|---|
| Satellite systems (civil) | Aeronautical satcoms | INMARSAT |
| | Amateur-satellite | |
| | Broadcasting-satellite receivers | Satellite radio<br>Satellite TV<br>SIT/SUT |
| | Earth exploration-satellite | Active sensors (satellite)<br>Passive sensors (satellite)<br>Synthetic aperture radar<br>Weather satellites |
| | Feeder links | |
| | FSS Earth stations | VSAT<br>SIT/SUT<br>SNG<br>ESV |
| | Inter-satellite links | |
| | MSS Earth stations | CGC |
| | | INMARSAT<br>IMT-2000 satellite component<br>S-PCS |
| | Satellite navigation systems | Galileo<br>GPS<br>Glonass |
| | Standard frequency and time signal-satellite | |
| | Space operations | |
| | Space research | Active sensors (satellite)<br>Deep space (satellite)<br>Passive sensors (satellite) |
| Radio astronomy | Continuum measurements<br>Spectral line observations<br>VLBI observations | |
| Short range devices | Alarms | Social alarms |
| | Railway applications | AVI<br>Eurobalise<br>Euroloop |
| | Tracking, Tracing and Data Acquisition | Detection of avalanche victims<br>Meter Reading<br>Asset Tracking and Tracing |
| | Detection of movement and alert | |
| | Inductive applications | |
| | Wireless applications in healthcare | ULP-AMI |
| | Model control | Flying Model control |
| | Non-specific SRDs | |

| Layer 1 | Layer 2 | Layer 3 |
|---|---|---|
| | Radio microphones | Radio microphones<br>Consumer radio microphones<br><br>Aids for handicapped<br><br>ALD |
| | Wideband Data Transmission Systems | HIPERLANs<br><br>Radio LANs<br><br>DECT |
| | RFID | |
| | RTTT | Vehicle and infrastructure radar<br>SRR |
| | UWB applications | Communications applications<br><br>Building material analysis and classification applications<br><br>Ground- and Wall- Probing Radar (GPR/WPR) imaging systems<br><br>SRR |
| | Wireless audio applications | |
| Other | Amateur | |
| | CB radio | AM CB<br>PR 27 |
| | D-GPS | |
| | HAPS | |
| | ISM | Microwave ovens |
| | Meteor scatter communications | |
| | Land radionavigation | |
| | Radiolocation (civil) | |
| | Standard frequency and time signal | |
| | Tracking systems | |

## ABBREVIATIONS

| | |
|---|---|
| ADS | Automatic Dependant Surveillance (Aeronautical) |
| AES | Aircraft Earth Station |
| AGA | Air-Ground-Air |
| AIS | Universal Shipborne Automatic Identification System |
| AM | Amplitude Modulation |
| ALD | Assistive Listening Devices |
| ASDE | Airport Surface Detection Equipment |
| AVI | Automatic Vehicle Identification |
| BWA | Broadband Wireless Access |
| BFWA | Broadband Fixed Wireless Access |
| CB | Citizen's Band |
| CGC | Complementary Ground Component |
| 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 |
| EAS | Electronic Article Surveillance |
| 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 |
| MCA | Mobile Communications on Board Aircraft |
| 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 |
| OBU | On-Board Units |
| PAMR | Public Access Mobile Radio |
| PLB | Personal Locator Beacon |
| PMR | Private (Professional) Mobile Radio |
| RFID | Radio Frequency Identification |
| RSBN | Radiolocation System for Short Range Navigation (Abbreviation stands for the Russian term) |
| RSU | Road Side Units |
| RTTT | Road Transport and Traffic Telematics |
| SAB | Service Ancillary to Broadcasting |
| SAP | Service Ancillary to Programme making |
| SAR | Search and Rescue |
| SIT/SUT | Satellite Interactive Terminal / Satellite User Terminal |
| SNG | Satellite News Gathering |
| S-PCS | Satellite - Personal Communications System |
| SRDs | Short Range Devices |
| SRR | Automotive Short Range Radars |
| 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 |
| ULP-AID | Ultra Low Power Animal Implant Devices |
| ULP-AMI | Ultra Low Power Active Medical Implants |

| UMTS | Universal Mobile Telecommunications System |
|------|------------------------------------------|
| VLBI | Very Long Baseline Interferometry |
| VOR | VHF Omnidirectional Radio Range |
| VSAT | Very Small Aperture Terminal |
| UWB | Ultra Wide Band |

**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"?>
<!-- Created by CMG for ERO on 1. june 2001, 08:29 -->
<!-- Modified by CIBER for ERO on 3. april 2006, 10:27 -->
<!-- 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 -->
<!-- TemporalRestrictions are at most 50 characters -->
<!ELEMENT frequencyInformation (frequencyTable*)>
<!ELEMENT frequencyTable (allocation | application | document |
radioInterface)*>
<!ELEMENT allocation EMPTY>
<!ELEMENT application EMPTY>
<!ELEMENT document EMPTY>
<!ELEMENT radioInterface 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
>
```

```
<!ATTLIST document
        title CDATA #REQUIRED
        lowerFrequency CDATA #IMPLIED
        higherFrequency CDATA #IMPLIED
        term CDATA #IMPLIED
        type (activity | NTFA | other | R&amp;TTE)
        expiry CDATA #REQUIRED
        hyperlink CDATA #REQUIRED
>
<!ATTLIST radioInterface
        radiointerfaceid CDATA #IMPLIED
        lower_frequency CDATA #REQUIRED
        higher_frequency CDATA #REQUIRED
        Allocation_Term CDATA #IMPLIED
        Application_Term CDATA #IMPLIED
        Channeling CDATA #IMPLIED
        TransmitPowerLimit CDATA #IMPLIED
        ChannelOccupationRules CDATA #IMPLIED
        DuplexDirection CDATA #IMPLIED
        LicensingRegime CDATA #IMPLIED
        Art33Requirements CDATA #IMPLIED
        FrequencyPlanning CDATA #IMPLIED
        Reference CDATA #IMPLIED
        Remarks CDATA #IMPLIED
        NotificationNo CDATA #IMPLIED
        Channeling_notes CDATA #IMPLIED
        TransmitPowerLimit_notes CDATA #IMPLIED
        ChannelOccupationRules_notes CDATA #IMPLIED
        DuplexDirection_notes CDATA #IMPLIED
        LicensingRegime_notes CDATA #IMPLIED
        Art33Requirements_notes CDATA #IMPLIED
        FrequencyPlanning_notes CDATA #IMPLIED
        Reference_notes CDATA #IMPLIED
        Remarks_notes CDATA #IMPLIED
        NotificationNo_notes CDATA #IMPLIED
>
```