

EUMETSAT REPORT ON FREQUENCY MANAGEMENT TOPICS

In response to CGMS action 37.24 and 37.25 and CGMS recommendation 37.07

The agenda of the World Radiocommunication Conference 2012 (WRC-12) contains a number of issues of interest and concern to the meteorological satellite (MetSat) operators.

This contribution provides an overview of the status of the preparation for WRC-12 for the most important issues related to the MetSat service and the Earth Exploration Satellite Service (EESS), namely the allocation of additional spectrum for MetSat in the frequency band 7850 – 7900 MHz under WRC-12 agenda item 1.24 and the review the bands above 275 GHz for use by EESS passive sensors under agenda item 1.6.

In response to CGMS action 37.24 and 37.25, EUMETSAT contributed actively to the development of the WMO position on WRC-12 agenda items of interest as well as to the ITU-R Report on the “The essential role and global importance of radio spectrum use for Earth observations and for related applications.”

Furthermore, in response to CGMS recommendation 37.07, EUMETSAT released a letter (in January 2010) informing its member states on WRC-12 positions of WMO (supported by EUMETSAT) and encouraging them to approach their national radiocommunications administrations to emphasize the importance of suitable radio-frequency bands for meteorology and their protection and to seek the support of those countries for WRC-12 agenda items of interest and concern to EUMETSAT and WMO.

This has been complemented by a Delegate Body document presented to the EUMETSAT Scientific and Technical Group (STG) that summarises the status of preparation for WRC-12 and re-iterates the request to member states delegates to contact their national radiocommunications administrations to stress the importance of meteorological and Earth observation frequency bands and the need of support from their national agencies.

EUMETSAT Report on Frequency Management topics

1 INTRODUCTION

This contribution provides an overview of agenda items of the World Radiocommunication Conference 2012 (WRC-12) on issues of most interest to EUMETSAT related to the Meteorological Satellite Service (MetSat) and the Earth Exploration Satellite Service (EESS).

Also those WRC-12 agenda items are highlighted which have the potential to negatively impact the future use of a frequency band allocated to the MetSat and EESS service.

2 WRC-12 AGENDA ITEMS OF INTEREST

WRC-12 contains agenda item 1.24 which considers the allocation of additional spectrum for MetSat in the frequency band 7850 – 7900 MHz and agenda item 1.6 calling for a review of the bands above 275 GHz for use by EESS passive sensors.

Preparation of these agenda items of direct interest to MetSat operators in the responsible ITU-R fora progressed well and completed the Draft CPM Text on those agenda items (deadline: July 2010).

The summarised outcome of the sharing and compatibility studies and the identified methods to conclude on those issues at WRC-12 (so-called “methods to satisfy the agenda item”) in the Draft CPM-Text will form the basis for discussions and negotiations at the conference itself. Positive conclusions in the Draft CPM-Text on issues of interest are therefore of outmost importance.

2.1 WRC-12 Agenda Item 1.6 regarding frequency allocations for EESS (passive) in bands above 275 GHz

WRC-12 Agenda Item 1.6 calls for review of footnote 5.565 of the Radio Regulations in which currently a number of frequency bands are listed that can be used for passive sensing. The aim of this agenda item is to update the list of frequency bands for spectrum use by the passive services between 275 GHz and 3 000 GHz in order to better reflect the current and future planned use of passive sensors.

The identification of the most up-to-date and relevant frequency bands for passive sensing in the framework of SFCG and ITU-R Working Party 7C has been completed and resulted in the Preliminary Draft Revision of Recommendation ITU-R RS.515-4 in which the current and future spectrum use and requirements for frequency bands above 275 GHz are listed.

The Draft CPM-Text only contains one method (with two slightly different options) to satisfy the agenda item which (both options) properly reflects the spectrum requirements as identified by SFCG and ITU-R Working Party 7C.

EUMETSAT supports the proposed revision of RR No. 5.565 as outlined in the Draft CPM-Text to include all appropriate frequency bands within the range 275 to 3000 GHz to be used by systems belonging to the Earth exploration-satellite (passive), including those planned in the framework of EPS Second Generation (EPS-SG) in order to protect these bands for scientific applications now and in the future.

Frequency bands above 275 GHz currently planned to be used by the Microwave Imager (MWI) instrument in the framework of EPS-SG were fed into the relevant fora (SFCG and ITU) and are properly reflected in the relevant documentation:

SFCG-Resolution 29-1 "Passive bands of interest above 275 GHz",
Draft New Report ITU-R RS.[above 275] on "Passive bands of interest to EESS/SRS from 275 to 3000 GHz",
Preliminary Draft Revision of Recommendation ITU-R RS.515-4 and
Draft CPM-Text.

2.2 WRC-12 Agenda Item 1.24 (Extension of the MetSat allocation at 7750–7850 MHz by 50 MHz into the band 7850 – 7900 MHz)

WRC-12 Agenda Item 1.24 calls for consideration of extension of the existing allocation to the MetSat service in the band 7750 - 7850 MHz by 50 MHz to cover also the band 7850 - 7900 MHz, limited to non-geostationary meteorological satellites in the space-to-Earth direction.

The mission requirements for next generation non-GSO meteorological satellites in terms of observations, instruments and user-services clearly show a need to transmit higher data rates compared to current systems.

EUMETSAT supports the extension of the existing allocation of the 7750-7850 MHz band to the MetSat service (space-to-Earth) for use by non-geostationary satellites into the 7850-7900 MHz band and performed and introduced the necessary sharing studies in the relevant ITU-R Working Party 7B resulting in ITU-R Report SA.2164 on "Compatibility between the meteorological satellite and the fixed service in the band 7850-7900 MHz".

From the results of the sharing studies which is taking into account use of the band by MetSat for raw data dump and/or direct readout applications it can be concluded that the sharing scenarios in the frequency band 7850-7900 MHz are similar to ones in the frequency band 7750-7850 MHz, thus MetSat could be operated under the same regulatory conditions like in the existing MetSat band.

In the Draft CPM-Text only one method to satisfy the agenda item is provided which proposes the extension of the MetSat allocation 7750 – 7850 MHz to 7900 MHz. As there are no disadvantages to this method identified and nearly no negative views were expressed to this MetSat allocation extension, a positive outcome to this agenda item can be expected at WRC-12.

Considering the different concepts (i.e. data dump, direct readout services) for using this band by current and future polar-orbiting MetSat systems, such as FY-3, NPOESS (now JPSS), Metop and EPS-SG there is a certain potential to interfere with each other.

Thus, once the band 7850 – 7900 MHz is allocated to MetSat (at WRC-12) a coordinated approach for planning the long term use of the entire band 7750 – 7900 MHz would be necessary, taking into account SFCG RES 19-7R3.

2.3 Further WRC-12 Agenda Items of relevance to MetSat and EESS

In addition to the prime issues as described above, WRC-12 agenda contains a number of further items of relevance to MetSat and EESS which are of interest and concern to EUMETSAT:

- | | |
|--------------------|---|
| Agenda Item 1.3: | Identification of spectrum for unmanned aircraft systems (UAS). |
| Agenda Item 1.5: | Worldwide/regional harmonization of spectrum for Electronic News Gathering (ENG). |
| Agenda Item 1.8: | Fixed service in the range 71 - 238 GHz. |
| Agenda Item 1.22: | Effect of emissions from short-range devices (SRD). |
| Agenda Item 1.25: | Additional frequency allocations to the Mobile-Satellite Service (MSS) between 4 and 16 GHz. |
| Agenda Item 7: | Possible changes to the ITU frequency coordination and notification procedures for satellite networks. |
| Agenda Item 8.1.1: | Improve the recognition of the essential role and global importance of Earth observation radiocommunication applications. |
| Agenda Item 8.2: | Proposals for agenda items for WRC-15. |

Regarding those of the above listed agenda items with an open scope, thus bearing the potential to negatively impact frequency allocations for passive services, such as WRC-12 agenda items 1.3, 1.5, 1.8, 1.22, 1.25 (Note: 7750 – 7900 MHz has recently been deleted from the list of candidate bands for MSS.), there are currently no indications of an outcome at WRC-12 that could seriously impair frequency bands used for passive sensing. However, these agenda items will have to be further closely monitored and actions initiated when the situation changes.

On all agenda items listed above, EUMETSAT supports the positions expressed in Resolution SFCG 28-1R21 (“SFCG Objectives for WRC-12”) as well as in document OBS/WIS/RFC-WRC-2012 (“Preliminary WMO Position on WRC-12 Agenda Items”).

4 COORDINATION OF FUTURE DCS USE IN THE BAND 401 – 403 MHZ



CGMS-38 EUM-WP-20

v1, 9 August 2010

The status of coordination of the future use of the band 401 – 403 MHz for Data Collection Systems (DCS) by geostationary and non-geostationary meteorological satellite systems is described in detail in document CGMS-37 EUM-WP-24 (“Report on the outcome of the SFCG-30 meeting regarding 401 – 403 MHz”).