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INTEGRATED OBSERVING SYSTEMS

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**IMPLEMENTATION-COORDINATION TEAM
ON INTEGRATED OBSERVING SYSTEM
(ICT-IOS)**
Eighth Session

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REPORTS OF THE OPAG-IOS EXPERT TEAMS AND RAPPORTEURS
**REPORT OF THE STEERING GROUP ON RADIO-FREQUENCY COORDINATION
(SG-RFC)**

(Submitted by Jose Arimatea de Sousa Brito (Brazil), Chair, SG-RFC)

SUMMARY AND PURPOSE OF DOCUMENT

This document provides a report of the work of the Steering Group on Radio-Frequency Coordination (SG-RFC) since the seventh Session of the ICT-IOS, together with subsequent progress, and recommendations.

ACTION PROPOSED

The Meeting is invited to note the information contained in this document when discussing how it organises its work and formulates its recommendations.

Appendix A Terms of Reference of the Steering Group on Radio-Frequency Coordination (SG-RFC)

DISCUSSION

1. Introduction

1. The Steering Group on Radio-Frequency Coordination (SG-RFC), in general, meets once a year to discuss current radiofrequency issues and the relevant outcome of ITU-R Working Groups with focus on the preparations for the World Radiocommunication Conferences, which are held every three or four years to update the ITU Radio Regulations. The membership of the group can be found following the link http://www.wmo.int/pages/prog/www/CBS/Lists_WorkGroups/CBS/opag%20ios/s-g-rfc/members

2. Since the last session of ICT-IOS (June, 2012), SG-RFC held two sessions, being the first one in Ottawa, Canada (January, 2013) and the second in Boulder, USA (March, 2014). Both sessions discussed potential threats to radio frequencies used in Meteorology, Climatology and Earth observations and the work being carried out in preparation for WRC-15, which will be held in Geneva in November 2015. The session in 2013 prepared the Preliminary WMO Position on the Agenda of WRC-15 that was distributed to the WMO Executive Council and to concerned groups part of the WRC-15 studies or negotiating processes. The meeting in Boulder reviewed the WMO Position paper and updated it with latest information from ITU-R Study Groups. The session also carefully reviewed the outcome of several Telecommunication Regional Groups and their positions with respect to WMO positions on several items of the WRC-15 Agenda.

3. SG-RFC identified 10 Agenda items for which WRC-15 decisions have direct impact on the development and operation of meteorological systems and applications. Eight other WRC-15 Agenda items that may potentially have an impact on WMO interests. The main threats come from the powerful mobile telecommunication industry, in its search for additional spectrum allocations to the mobile service on a primary basis and identification of additional frequency bands for International Mobile Telecommunications (IMT). Several bands of WMO interest, including active and passive sensing, meteorological satellites, space research and operation services, and meteorological radars, are under study as potential candidates for IMT (WRC-15, Agenda 1.1)

4. There is a great pressure to share frequencies presently allocated to radiolocation, meteorological-satellite and Earth observation Radiocommunication services and used by systems/applications for meteorological and related environmental observations with International Mobile Telecommunications (IMT) and RLAN systems. Of special concern to WMO Members are the initiatives from countries in RA IV and VI to allocate to the mobile service and identify to RLAN C-Band frequency range 5 350-5 470 MHz. This frequency range allocated to the Earth exploration-satellite (active) and radiolocation services, and used, in particular, by the Synthetic Aperture Radars (SAR) for remote sensing from satellites (e.g. Sentinel and Radarsat) as well as ground-based weather radars. Studies to date show that the use of RLAN systems in this frequency range could have significant negative impact on above-mentioned systems/applications.

This issue became of particular interest to the Group on Earth Observation (GEO) during the recent GEO-X Plenary, held in Geneva in January 2014, as radio frequency issues were introduced to the main agenda, when the European Commission

presented ESA concerns about the quality of data from Sentinel satellites, using 5.4 GHz band. Some GEO Member States have expressed their willingness to free this band for the use by Radio LANs. If allowed, this unlicensed use would, according to studies, dramatically deteriorate the quality of the Sentinel observation data. It was reiterated that the Earth Observation communities oppose this modification in the allocation of the radiofrequency, which would also affect other radar satellites using the same band. WMO and GEO are working together to protect this band. In some parts of the world, the operation of C-band meteorological radars are already in jeopardy by ubiquitous RLANS.

2. Achievements

In relation to its Terms of Reference (Appendix A), the Steering Group on Radio-Frequency Coordination (SG-RFC) achieved the following:

1. Prepared and distributed to relevant WMO and ITU bodies the WMO Preliminary Position on WRC-15 Agenda (updated recently).
2. Members of SG-RFC and/or Staff from the Secretariat followed several meetings of ITU-R groups presenting and defending WMO Position.
3. Development of the WMO Strategy on Radio Frequency Protection for Meteorology submitted to EC-65.
4. Continued support to GEO in realizing Task IN-01-C4-Radio Frequency Protection as an important contribution from WMO to GEOSS.
5. Support to Members facing specific threats to some bands through letters, discussions or providing relevant information.

3. Issues

In addition to the issues covered by Recommendations in Section 4, the Steering Group on Radio-Frequency Coordination (SG-RFC) has identified the following issues for consideration by the ICT-IOS:

1. As WRC-15 approaches, there is a need to increase WMO participation in key ITU meetings and to increase Secretariat support to this activities culminating with WRC-15 in November 2015. Members should be invited to contribute to this effort through financial support or secondment of radio frequency experts to the Secretariat.
2. Support is also needed to complete the Guide to NMHS on Radio Frequency Coordination to complement the WMO/ITU "Handbook on the on Use of Spectrum for Meteorology: Weather, Water and Climate Monitoring and Protection".
3. It is suggested that Radio Frequency Coordination be included in the WIGOS Regional Implementation Plans (R-WIP)
4. In its last session (Boulder, March 2014) SG-RFC recommended that in its capacity development effort, it should be recommended to get infrastructure groups or task teams of Regional Associations to include Radio Frequency Coordination (RFC) activities, including a small group of experts or rapporteur on RFC in each RA to work with ITU regional spectrum management groups. SG-RFC also recommended the establishment of a network of national RFC focal points.

4. Recommendations

The proposals for ICT-IOS are discussed in Section 3. SG-RFC will be preparing a Resolution for Congress based on a revised and updated version of the Resolution 4 (Cg-XV) – Radio Frequencies for Meteorological and Related Environmental Activities

5. Proposal for the Terms of reference of the Expert Team / the Rapporteur

The Steering Group on Radio-Frequency Coordination (SG-RFC) proposes some changes to its Terms of Reference mainly to deal with Space Weather spectrum needs.

6. Work plan

The updated Work Plan with status for the Steering Group on Radio-Frequency Coordination (SG-RFC) for the period 2012-2014 is based on a List of Actions with responsibility assigned to members of the Group. The Final Report of the SG-RFC meeting held in Ottawa in January 2013 contains the list of Actions. See the following link <http://wis.wmo.int/doc=2737>. This list of Actions was updated during the session in Boulder in March 2014 and will be available soon with the publication of the Final Report of that meeting.

The latest version of the WMO position paper is online at <http://wis.wmo.int/file=965>. It is noted that the first draft of the Conference Preparation Meeting text advising ITU-R members on the WRC-15 Agenda will be available mid 2014. It will be essential to hold a meeting of the SG-RFC once the content of the CPM text is known, but before the deadline for submitting an updated WMO position paper in time for CPM. The SG-RFC proposes to hold an additional meeting to achieve this in November in Geneva.

APPENDIX A

TERMS OF REFERENCE OF THE STEERING GROUP ON RADIO-FREQUENCY COORDINATION (SG-RFC)

http://www.wmo.int/pages/prog/www/CBS/Lists_WorkGroups/CBS/opag%20ios/sg-rfc/tors

Last updated: 03/04/2013

(Approved by CBS-XV)

- (a) Keep under review allocations of radio frequency bands and frequency assignments of systems and applications for meteorological activities including their operational requirements (telecommunications, instruments, sensors, etc.) and research purposes, in close coordination with other technical commissions, especially CIMO, and the CBS/OPAG-ISS;
- (b) Coordinate with WMO Members, with the assistance of the WMO Secretariat, to:
 - (i) Ensure the availability of radio-frequency spectrum to meteorological and other environment monitoring radiocommunication services;
 - (ii) Ensure the proper notification and registration of frequency assignments used for meteorological purpose;
 - (iii) Identify the future use of the radio-frequency spectrum for meteorological purpose;
- (c) Keep abreast of the activities of the Radiocommunication Sector of the International Telecommunication Union (ITU-R), and in particular of the Radiocommunication Study Groups, on radio frequency matters pertaining to meteorological activities, and represent WMO in ITU-R work;
- (d) Prepare and coordinate proposals and advice to WMO Members on radio regulation matters pertaining to meteorological activities with a view to ITU Radiocommunication Study Groups, radiocommunication Assemblies (RA), World Radiocommunication Conferences (WRC) and related global and regional preparatory meetings;
- (e) Facilitate the cooperation between WMO Members for the use of frequency bands allocated to meteorological and environment monitoring radiocommunication services with respect to:
 - (i) Coordination of radio-frequency spectrum use and frequency assignments between countries;
 - (ii) Sharing the same frequency bands between various radiocommunication services (e.g. meteorological aids and meteorological-satellite services (to provide compatibility between radiosondes and data collection platforms);
- (f) Facilitate the coordination of WMO frequency use activities with other international organizations which address radio spectrum management issues, including specialized organizations (e.g. CGMS, the Space Frequency Coordination Group (SFCG)) and regional telecommunication organizations, such as the European Conference of Postal and Telecommunications Administrations (CEPT), the Inter-American Telecommunication Commission (CITEL), the Asia-Pacific Telecommunity (APT), the Regional Commonwealth in the Field of Communications (RCC);

- the African Telecommunication Union (ATU), and the Arab Spectrum Management Group (ASMG);
- (g) Assist WMO Members, upon request, in coordination of frequency assignments of radiocommunication systems sharing a frequency band with meteorological radiocommunication systems in the ITU;
 - (h) Increase the understanding of NMHS role in radio frequency coordination and the importance of the close collaboration with the ITU Radiocommunication Sector (ITU-R) and the Telecommunication Development Sector (ITU-D) in the accomplishment of the WMO priority activities, in particular GFCS, WIGOS and WIS.
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