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| **Radiocommunication Advisory Group Geneva, 24-27 June 2014** |  |
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|  | **Document RAG14-1/1-E** |
| **30 May 2014** |
| **Original: English** |
| Director, Radiocommunication Bureau | |
| report of the twenty-first meeting of the radiocommunication advisory group | |

# 1 Introduction

This document provides status reports and background information on some of the issues that appear on the provisional agenda for the 21st meeting of RAG (see [CA/212](http://www.itu.int/md/R00-CA-CIR-0212/en) of 07.02.14). This document is intended to assist the meeting in considering the relevant agenda items.

Separate reports will be submitted for some of the agenda items.

# 2 Council issues

This section covers the relevant issues related to the 2014 session of the Council (see: <http://www.itu.int/council/>).

## 2.1 Publications

The free online access policy continues to provide dissemination of ITU standards to a broader public, especially in developing countries with financial constraints. This wide outreach via free online access is helping to build the visibility of ITU’s mission and mandate and reinforce ITU as a global telecommunication authority.

By Decision 12 (Guadalajara, 2010), PP-10 expanded the free online access policy to include, *inter alia*, ITU‑R Recommendations and Reports. Later on, Council 2012 Decision 571 provided free online access to the Radio Regulations to the general public for a trial period until PP-14, and Council 2013 revised Decision 571 and extended this free online access to include the ITU-R Handbooks on radio-frequency spectrum management[[1]](#footnote-1) to the general public on a permanent basis.

Council 2014 further revised Decision 571 to provide free online access to the Radio Regulations and the Rules of Procedure to the general public on a permanent basis.

The impact of these Decisions is reflected on the number of deliveries of such publications, as shown on the tables below:

– Concerning the Radio Regulations, comparison has been done in similar timelines since its release. In that regard, when comparing the situations for the RR-2008 edition (released in September 2008) and the RR-2012 (released in December 2014) over the first 14 months after release, the following numbers can be obtained:



This shows a total increase of RR distribution of nearly 150%. In spite of free access, the number of paid deliveries also increased (near 9%), which confirms the benefit of this decision.

– Regarding the Handbooks on radio-frequency spectrum management, since the Council 2013 Decision, the quantity of downloads is the following (until 31.03.2014, i.e., 9 months):



These numbers also illustrate the positive impact of this decision.

## 2.2 Cost recovery for satellite network filings

Council 2013 approved modification of Decision 482 for the implementation of cost recovery for consolidation of frequency assignments in the MIFR of different GSO networks submitted by an administration (or an administration acting on behalf of a group of named administration).

Council 2013 also decided that, in the application of Resolution 553 (WRC-12) and Resolution 554 (WRC-12), a submission of a satellite network filing including the 21.4-22 GHz frequency band be considered as one single filing for the application of Council Decision 482 and not subject to additional or separate cost recovery charges. The implementation of Decision 482 (C-05), and subsequently Decision 482 (modified 2012) and Decision 482 (modified 2013), by the Radiocommunication Bureau did not give rise to any difficulty either internally or with administrations notifying satellite networks.

## 2.3 Conformance and interoperability

Council 2013 endorsed the status report and action plan on ITU activities related to conformance and interoperability. It was noted that ITU-R would continue to collaborate with, and provide information when requested by, ITU‑T and ITU‑D on conformance and interoperability testing, as mentioned in the *resolves* part of Resolution ITU-R 62.

## 2.4 Budget for 2014-2015 period

Council 2013 adopted the biennial budget for 2014-2015 as contained in [Resolution 1359](http://www.itu.int/md/S13-CL-C-0111/en).

Council 2013 decided to authorize the withdrawal of CHF 4,000,000 from the Reserve Account to provide for the agreed programme of activities within the budgeted period, which include the organization of WRC-15 and RA-15 as decided by Council Resolution 1343 in 2012.

It should be noted that the RA/WRC-15 were originally budgeted at CHF 5 million (ITU-R and General Secretariat) and the agreed reduction had incidence in other BR budgeted items.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Budget 2014-2015 - Radiocommunication Sector** | | | | | | | |
|  |  | **In thousands of Swiss francs** | | | | | |
| **Operating expenses by section** | | **Actual** | **Budget** | **Actual** | **Estimates** | **Estimates** | **Estimates** |
|  |  | **2010-2011** | **2012-2013** | **2012** | **2014** | **2015** | **2014-2015** |
|  |  |  |  |  |  |  |  |
| Section 3.1 | World radiocommunication conferences | 2 | 3'000 | 2'619 | 0 | 2'811 | **2'811** |
|  |  |  |  |  |  |  |  |
| Section 3.2 | Radiocommunication assemblies | 0 | 375 | 359 | 0 | 368 | **368** |
|  |  |  |  |  |  |  |  |
| Section 4.1 | Regional radiocommunication conferences | 0 | 0 | 0 | 0 | 0 | **0** |
|  |  |  |  |  |  |  |  |
| Section 5.1 | Radio Regulations Board | 977 | 1'363 | 467 | 731 | 731 | **1'462** |
|  |  |  |  |  |  |  |  |
| Section 5.2 | Radiocommunication Advisory Group | 115 | 123 | 50 | 72 | 72 | **144** |
|  |  |  |  |  |  |  |  |
| Section 6 | Study groups | 2'244 | 1'750 | 226 | 988 | 975 | **1'963** |
|  |  |  |  |  |  |  |  |
| Section 7 | Activities and programmes | 1'585 | 1'920 | 465 | 850 | 650 | **1'500** |
|  |  |  |  |  |  |  |  |
| Section 8 | Seminars | 476 | 944 | 177 | 521 | 422 | **943** |
|  |  |  |  |  |  |  |  |
| Section 9 | Bureau | 55'192 | 52'311 | 26'357 | 27'000 | 25'868 | **52'868** |
|  | - Common expenditure | 2'105 | 2'054 | 563 | 1'034 | 934 | **1'968** |
|  | - Office of the Director | 1'459 | 1'278 | 643 | 643 | 629 | **1'272** |
|  | - Study Groups Department | 6'632 | 6'243 | 2'790 | 2'587 | 2'484 | **5'071** |
|  | - Space Services Department | 17'639 | 16'496 | 8'644 | 8'538 | 8'078 | **16'616** |
|  | - Terrestrial Services Department | 14'205 | 13'131 | 6'744 | 6'671 | 6'414 | **13'085** |
|  | - Informatics, Administration & Publications Department | 13'152 | 13'109 | 6'973 | 7'527 | 7'329 | **14'856** |
|  |  |  |  |  |  |  |  |
| **TOTAL** |  | **60'591** | **61'786** | **30'720** | **30'162** | **31'897** | **62'059** |

## 2.5 Draft Strategic Plan and Draft Financial Plan of the ITU-R for 2016-2019

This topic is presented in an addendum to this document, for review and comments by the RAG.

## 2.6 Space Protocol

In Decision 576 (Document C13/107), Council 2013 authorized the Secretary-General to continue to express interest in the ITU becoming the Supervisory Authority, upon or after the entry into force of the Protocol, and to authorize the Secretary-General or his representative to continue to participate in the work of the Preparatory Commission as an observer.

Through this decision, Council 2013 also instructed the Secretary General to submit to Council 2014 a report ([Document C14/13](https://www.itu.int/md/choice_md.asp?id=S14-CL-C-0013!!MSW-E&lang=en&type=sitems)) on the outcomes of the Preparatory Commission and the financial, juridical and technical implications of ITU taking on the role of the Supervisory Authority.

As a follow-up to Decision 576, a status report on the second session of the Preparatory Commission regarding the establishment of the International Registry for space assets (27‑28 January 2014, Rome) was presented to Council-14 (Document C14/13). Regarding the questions and comments raised by some administrations during Council 2012 and Council 2013 relating to the possible role of ITU as Supervisory Authority, the General Secretariat completed also an information document to Council 2014 with all necessary information, clarification and background (Document [C14/INF/12](http://www.itu.int/md/S14-CL-INF-0012/en)).

Council 2014 noted Document C14/13 and authorized the Secretary-General to continue to express ITU’s interest in becoming the supervisory authority, noting that the matter of whether or not ITU could become the supervisory authority should not be prejudged at the current stage. In addition, it authorized the Secretary-General or his representative to continue to participate in the work of the Preparatory Commission and its working groups as an observer. The Council also authorized the Secretary-General to submit a report on the matter to PP-14 and to report on progress to Council-15.

To allow the Secretary-General to carry out this task in a fully transparent manner, a sharepoint was created, open to Council Member States, to share information and comments online at: [https://extranet.itu.int/ITU‑R/space-assets](https://extranet.itu.int/ITU-R/space-assets).

# 3 WRC issues

## 3.1 WRC-15 preparation

Based on the results of the first session of the Conference Preparatory Meeting for WRC-15 (CPM‑15) and taking into account the deadlines established for the preparation of the draft CPM Report to WRC-15 (see [BR Administrative Circular CA/201](http://www.itu.int/md/R00-CA-CIR-0201/en) of 19 March 2012 and its Addendum 1 of 15 January 2013), significant progress has been made during the reporting period by the ITU-R working parties and joint task group responsible for the preparatory studies on WRC-15 agenda items and/or related WRC Resolutions, as well as on the studies in response to ITU-R Resolutions for the preparation of RA-15. Detailed information regarding these ITU‑R preparatory studies can be found on the following updated ITU webpage: [www.itu.int/ITU‑R/go/rcpm-wrc-15-studies](http://www.itu.int/ITU-R/go/rcpm-wrc-15-studies). The completion of these activities in accordance with the pre-established work plans should ensure in particular the availability in due time of the draft CPM Report to WRC-15 for its consideration during the second session of CPM-15 from 23 March to 2 April 2015 (see Document [C13/37(Rev.3)).](http://www.itu.int/md/S13-CL-C-0037/en)

Taking into account Resolution 80 (Rev. Marrakesh, 2002), extensive preparations for WRC-15 have been conducted through Regional Telecommunication Organizations including CEPT, CITEL, APT, RCC, the Arab Group of countries and the African Group of countries through ATU. The ITU has been assisting these preparations wherever possible, noting, in particular, WRC Resolution 72 (Rev. Geneva, 2007).

In order to start building consensus on the positions and proposals developed by the various Regional Telecommunication Organizations, the BR convened the [first ITU Inter-regional Workshop on WRC-15 Preparation](http://www.itu.int/en/ITU-R/conferences/wrc/2015/irwsp/2013/Pages/default.aspx) in Geneva on 4-5 December 2013. The workshop was attended by 245 participants representing 55 countries and 35 companies and organizations, and including some RRB Members and representatives from the above-mentioned regional telecommunication organizations. The presentations provided during the Workshop by these representatives and by the Chairmen of the responsible ITU-R Working Parties, Joint Task Group or Study Groups, as well as the exchanges of views that followed, were very much appreciated and are still available in video format and in the six official languages of the Union on the [webpage of the Workshop](http://www.itu.int/en/ITU-R/conferences/wrc/2015/irwsp/2013/Pages/default.aspx). Two other ITU Inter-regional Workshops on WRC-15 Preparation are planned: one near the end of 2014 and a final one in 2015 prior to WRC-15.

The ITU‑R webpage for WRC-15 at: [www.itu.int/go/wrc-15](http://www.itu.int/go/wrc-15) has been updated and provides a direct access to the above-mentioned information.

## 3.2 Implementation of WRC-12 outcomes

### 3.2.1 Software development to implement decisions of the Conference

BR has pursued software development and implementation to implement WRC-12 decisions. The following table presents a summary of the main tasks under consideration:

Software development activities to implement WRC-12 decisions

|  |
| --- |
| Resolution 417: automation of the terrestrial notifications examination software.  Status: Completed. |
| Resolution 552: new capture interface.  Status: Completed. |
| Resolution 552: validation of new data items.  Status: In progress. |
| Resolution 612 (oceanographic radars): automation of the terrestrial notifications examination software.  Status: Completed. |
| Resolution 907: develop a new [web] application which will provide administrations with means to submit and receive correspondence to and from the BR including satellite filings in a secure environment.  Status: In design phase. |
| Resolution 908: develop a new web application which will provide administrations with means to capture Advance Publication subject to coordination under Article 9 Sub-Section 1B, to publish and manage API Special Sections.  Status: SpaceWisc application released for beta testing by the administrations in April 2014 (CR/363); API publication and management in progress. |
| Alignment of the Terrestrial portion of the MIFR with ICAO database: the Bureau started investigating and developing the appropriate software tools allowing the Administrations to align their data in the MIFR with their relevant data in the ICAO database.  Status: In progress. |

### 3.2.2  General actions to implement decisions of the Conference

The following [BR circular-letter](http://www.itu.int/md/R00-CR-CIR/en) contains information related to actions to implement decisions of WRC-12:

|  |  |  |
| --- | --- | --- |
| BR Circular | Date | Subject |
| [CR/345](http://www.itu.int/md/R00-CR-CIR-0345/en) | 10.04.2013 | Implementation of Resolution 150 (WRC-12): Data elements for notification and examination of frequency assignments to HAPS gateway links operating in the bands 6 440-6 520 MHz and 6 560-6 640 MHz |

Based on the analysis made by the Bureau of the decisions of the WRC-12 and their impact on the current Rules of Procedure, the Radio Regulations Board (RRB), pursuant to the provisions of Nos. 13.12 and 13.14 of the Radio Regulations, pursued its adoption of new and revised Rules of Procedure. Updates to the 2012 edition were published, which incorporate all revisions up to and including the approved Rules listed in the annexes to circular letter [CR/355](http://www.itu.int/md/R00-CR-CIR-0355/en) of 13 January 2014.

# 4 Study group activities

This topic is presented in an addendum to this document.

# 5 Results of WTDC-14 of direct interest to ITU‑R

The 2014 World Telecommunication Development Conference (WTDC-14) was held at Dubai, UAE, from 30 March to 10 April 2014. BR actively participated in it, followed discussions and contributed to the relevant outputs. In this regard, it should be noted that, out of the nearly 200 contributions presented to WTDC-14, nearly 25% had some relationship with ITU‑R activities, and about 25% some indirect relationship. The main topics under consideration in these contributions comprised:

– Spectrum management in developing countries

– Dynamic Spectrum Access and White Spaces

– Conformance and interoperability

– Assistance to developing countries for IMT deployment

– Assistance to developing countries on digital broadcasting and digital switchover

– Disaster preparedness, early warning, rescue, mitigation, relief and response

– Human body exposure to EMF

– Rural telecommunications

– Climate change.

BR actively participated in the discussions on these contributions, having in mind the following objectives:

– To harmonize the activities undertaken in ITU-R and ITU-D, in particular in relation to spectrum management and more generally on the use of radiocommunications systems for ICT development worldwide

– To ensure that the concepts, definitions, and language related to spectrum management and radiocommunications, are used in WTDC outputs in a way consistent with those adopted in ITU-R activities

– To avoid duplications or overlapping in activities and studies made by ITU-D and ITU‑R

– To avoid overlapping or conflicts between issues addressed by WTDC and WRC-15 or Radio Regulations.

The main results and issues of this work, concerning ITU-R were:

– ITU-D Resolution 9 was revised and updated; it includes a mention of the new spectrum management approaches, as Dynamic Spectrum Access (DSA), while preserving the principle of technological neutrality

– White Spaces: consistent with the above, no mention was done of White Spaces, as it is only a particular application of DSA

– IMT deployment: the consistency of the frequency bands mentioned was ensured with those identified on RR for such systems

– Digital broadcasting and digital switchover

– Modifications were performed to mention recommendations issued from each Sector (ITU‑R, ITU-T, ITU-D), rather than “ITU Recommendations”

– Role of ITU-R and BR on revision of conformance and interoperability issues was kept. This revision was supported by several administrations having a similar concern: to preserve a consistency between ITU-R and ITU-D activities, avoiding overlapping, and keeping language alignment.

# 6 BR information system

RAG-19 (2012) advised the Director to implement recommended actions within the proposed time-frame, as described in the agreed roadmap, which comprises Phase 1 (Implementation of WRC-12 decisions) until 31 December 2012; Phase 2 (Rewrite some existing software) until 31 December 2015, and Phase 3 (Set up a project team to implement common framework, security system and centralized space database) from 1 January 2016 to 31 December 2018. RAG encouraged Member States and Sector Members to give their comments on Phase 3.

This progress report on this topic is presented in Annex 1 to this document.

# 7 Correspondence groups

BR established sharepoint sites to support the work of the active correspondence groups agreed during the previous RAG meetings:

• [Revision of Resolution ITU‑R 1-6](https://extranet.itu.int/itu-r/conferences/rag/cg_resolution_itu_r_1_6), Mr Robin Haines (USA),  
[https://extranet.itu.int/ITU‑r/conferences/rag/cg\_resolution\_itu\_r\_1\_6/](https://extranet.itu.int/itu-r/conferences/rag/cg_resolution_itu_r_1_6/)

• [Format(s) of ITU‑R Recommendations](https://extranet.itu.int/itu-r/conferences/rag/cg_format_itu_r_rec), Mr Albert Nalbandian (Armenia)  
[https://extranet.itu.int/ITU‑r/conferences/rag/cg\_format\_itu\_r\_rec/](https://extranet.itu.int/itu-r/conferences/rag/cg_format_itu_r_rec/)

• [Revision of Resolution ITU‑R 6-1](https://extranet.itu.int/itu-r/conferences/rag/cg_resolution_itu_r_6_1), Mr Paolo Zaccarian (Italy)  
[https://extranet.itu.int/ITU‑r/conferences/rag/cg\_resolution\_itu\_r\_6\_1/](https://extranet.itu.int/itu-r/conferences/rag/cg_resolution_itu_r_6_1/)

# These groups have all concluded their activities.

# 8 Operational planning

The Operational Plan for the period 2015-2018, which was adopted by Council 2014 (see Resolution 1363) is available at: [http://www.itu.int/ITU‑R/go/operational-plans/](http://www.itu.int/ITU-R/go/operational-plans/en). This plan is structured in a result-based way so as to ensure a complete linkage with the budget and other financial tools of the Union. It also addresses the strategic aspects of ITU‑R and provides appropriate linkage with the strategic plan of ITU.

The Performance Report for 2013 is available at: [http://www.itu.int/ITU‑R/go/performance-reports/](http://www.itu.int/ITU-R/go/performance-reports/%20). It aims at providing the relevant information regarding the implementation of the outputs and activities foreseen in the ITU‑R Operational Plan for the relevant period. The Performance Report provides the comparison between the realized results and the expected ones as well as the respective key performance indicators. These are specified with each major Objective and within each relevant output in the document.

# 9 Information and assistance to membership

In order to inform and assist the ITU membership, in particular in developing countries, on issues relating to radiocommunication matters, the BR organizes or participates in a number of spectrum related workshops, seminars, meetings and capacity building efforts. This activity is being carried out in close cooperation with the BDT, the ITU regional and area offices and the relevant international organizations or national authorities. These activities contribute directly to the capacity building and experience sharing of the ITU membership on spectrum issues. A particular effort has been to assist membership and promote cooperation in the area the transition to digital terrestrial television and the allocation of the digital dividend.

The list of events to which the BR participated in 2013 is given in Annex 2.

A comprehensive list of seminars and workshops organized directly by the ITU or in cooperation with other regional or national entities is given at: [http://www.itu.int/ITU‑R/go/seminars](http://www.itu.int/ITU-R/go/seminars).

## 9.1 Radiocommunication seminars

As a complement to the biennial Word Radiocommunication Seminars (WRS), the BR is organizing a yearly cycle of Regional Radiocommunication Seminars (RRS), to be held in different regions worldwide, fostering the human capacity building about the use of the radio-frequency spectrum and the satellite orbits, and, in particular, with the application of the provisions of the ITU Radio Regulations. The main advantages of RRS are:

– Within each region, more officials from national frequency management organizations can participate, and also more participants from other radiocommunication sector stakeholders

– Seminars agenda can be focused on pertinent regional situations and problems

– A closer dialogue can be established among participants and they can be more easily trained in the latest ICT tools for frequency management developed by ITU, and better apply for their particular problems

– ITU staff is in a position to better understand local frequency management problems and, therefore, provide more appropriate assistance.

RRS are designed with the following format:

– ***Pre-seminar web tutorial:*** it is available on the ITU webpage and presents the basic concepts of: spectrum management at national and international levels, their links with ITU Radio Regulations (RR), ITU and ITU-R structures and functions, including the Study Groups and other BR departments, and ITU basic texts, with the main focus on RR and associated Rules of Procedure (RoP).

– ***Theoretical part:*** two days devoted to the bases of spectrum management, both at worldwide and regional level, with an exchange of national experience on the subject; as well as the procedures associated to the Master International Frequency Register. The modifications to the RR, associated WRC Resolutions and ITU-R Resolutions decided by the last World Radiocommunication Conference (WRC-12) and Radiocommunication Assembly (RA-12) and agendas of WRC-15 are also studied. This part also covers the current regulatory framework for the international frequency management and the ITU-R Recommendations and best practices regarding the use of spectrum for both terrestrial and space services, including basic training on ICT tools developed by ITU for frequency notifications for those services and for technical examinations.

– ***Hands-on workshops:*** two days devoted to workshops (terrestrial and space), providing participants with hands-on experience of ITU notification procedures for each type of service, and of the software and electronic publications made available by the Radiocommunication Bureau.

– ***Forum:*** a one day Forum is included on a spectrum-related topic of the highest interest on the region, with the participation of the main stakeholders.

The presentations and discussions of RRS are in English and also in the UN language of prevalence into each considered region. RRS are conducted in a “paperless” environment.

Recognizing the difficulties faced by low-income countries, BR is taking in charge one partial fellowship per eligible country in each RRS region, with priority to requests from the least developed countries (LDCs).

The RRS are organized with participation of:

– The spectrum management authority in the host country as joint organizer

– The relevant Regional Telecommunication Organization in the region, as co-organiser of the event

– ITU Regional Offices, supporting organization and performing.

During 2013, four RRS were performed, as follows:

1) ***RRS-13-Americas:*** held at Asuncion, Paraguay, in July 2013; hosted by CONATEL-Paraguay, coordinated with the ITU Regional Office for the Americas. The Forum topic was: Digital Dividend in Latin America.

2) ***RRS-13-Africa:*** held at Yaounde, Cameroon, in September 2013; hosted by MINPOSTEL-Cameroon, in cooperation with ATU, coordinated with the ITU Africa Office. Forum topic was: Future of the UHF band on the African Region (below 1 GHz).

3) ***RRS-13-Asia-Pacific:*** held at Nadi, Fiji, in October 2013; hosted by the Ministry of Communications-Fiji, in cooperation with PITA, coordinated with the ITU Office for Asia and the Pacific. The Forum topic was: Future of the C-band in the Asia-Pacific Region.

4) ***RRS-13-Arab:*** held at Tunis, Tunisia, in December 2013; hosted by ANF-Tunisia, in cooperation with ASMG, coordinated with ITU Arab Regional Office. The Forum topic was: Future cognitive radio and TV White Spaces in the Region.

The 2013 RRS seminars have gathered more than 350 participants, from more than 70 countries. Nearly 40% of those countries had not come to the last WRS. This shows the complementarity between RRS and WRS. BR offered 26 partial fellowships for delegates.

During 2014, the following RRS and WRS are planned or already took place:

– ***RRS-14-Asia:*** was held in Ha Noi, Viet Nam, in May 2014; hosted by MIC-Viet Nam, in cooperation with APT, coordinated with the ITU Regional Office for Asia and the Pacific. The Forum topic was: New Regulatory issues on Spectrum Management.

– ***RRS-14-Americas:*** to be held in Trinidad and Tobago, in July 2014; hosted by TATT-Trinidad and Tobago, in cooperation with CTU, coordinated with the ITU Regional Office for the Americas. The Forum topic is WRC-15 Agenda: Regional matters.

– ***RRS-14-Eastern Europe and CIS:*** to be held in Bishkek, Kyrgyz Republic, in September 2014; hosted by State Communications Agency - Kyrgyz Republic, coordinated with ITU Offices for Eastern Europe and CIS respectively. The Forum topic is still to be defined.

– ***WRS-14:*** to be held in Geneva, Switzerland, on 8-12 December 2014; organized by BR, in coordination with the Regional Telecommunication Organizations, the other Bureaux and the General Secretariat.

# 10 Statistics on Sector Members, Associates and Academia

This topic is presented in an addendum to this document.

**Annexes:** 2

Annex 1

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| --- |
| **BR Space Information Systems Progress Report** |
| **Phase 2 -** 1 April 2012 – 30 December 2015 |
| ***Resolution 908 –*** Development and testing of a Web application for online submission and publication of Advance Publication subject to coordination and comments under No. 9.5B.  (SpaceWisc (Space Web Interface for Secure Communication)).  The design and testing of SpaceWisc has been a team effort between BR/IAP/SAS developers and engineers in BR/SSD.  In addition to efforts made to ensure that the SpaceWisc application is user friendly and easy to use, as per the recommendation of the RAG, Online help, creating How to videos and a SpaceWisc forum are also provided.  A beta version of the SpaceWisc application has been released for testing by the Administrations in April 2014. During this period, comments from administrations will be taken into account and improvements made to the application. For more information see ITU-R CR/363.  During the testing phase, development to implement of the BR internal workflow for processing Advance Publication filings submitted by administrations will be worked on. |
| ***Resolution 907*** – develop a new [Web] application which will provide the Administration with means to submit and receive correspondence to and from the BR including satellite filings in a secure environment.  Work on this Web application started immediately after the release of the beta version of the SpaceWisc application.  The experience gained in the implementation of Resolution 908 will be very valuable for the development of Resolution 907. The Sharepoint 2013 environment and Security developed for the Resolution 908 SpaceWisc project will also be used for the Resolution 907 project. |
| Business Continuity and Disaster Recovery – we are focusing on ensuring that all existing applications can be maintained and that the knowledge of the Notice Processing software and procedures are shared by several individuals.  The task group is developing a plan to test our backup and recovery procedures. We should soon be able to test different scenarios to ensure that we can recover BR Space software and data when needed. |
| ***Rewrite technical legacy software for technical examination*** – task initiated  – Rewrite PFD calculation advanced  – Migrate technical examination software written in Fortran from CompaqVisualFortran compiler to IntelFortran compiler  • GIBC/Appendix 30B complete  • Mspace complete  • GIBC/PowerControl under test  – Mspace – migration of data access component from VB6 to IntelFortran under test  – GIBC/Appendix 7 to be completed in 2015 |
| ***Experimenting with Windows Azure*** – As a pilot project, migration of a technical examination in the Windows Azure Cloud to evaluate what would be the advantages of using cloud based applications. (A separate document is submitted on this issue). |
| ***Design and develop the BR Space Information System*** – currently BR Space has many standalone applications written in VB6 and VO with their own specific interface. The aim is to build one single user interface that will integrate in the future all BR Space services using state-of-the-art technologies. This task has been initiated and the proposed architecture validated with a prototype based on Service Oriented Architecture (SOA). The SOA separates the user interface from the service implementation. Each BR Space application will be exposed as an autonomous WCF (Windows Communication Foundation) service and could easily be deployed across both Windows and web platforms WPF (Windows Presentation Foundation) technology, the leading modern UI design tool, is being used for the design and development of the User Interface (UI). WPF separates the presentation design layer from the logic layer.  The whole system uses a composite application design pattern (Prism is the Composite Application Guidance for WPF). This improves the system modularity and allows developers to build and maintain system modules independently.  SpaceQry will be the first application rewritten in the *BR Space Information System* following the above architecture and will be used as a template for development of all BR Soft applications. The querying service developed for SpaceQry may also be used by the future SNS Online as a web service. |
| ***Rewrite SpaceQry written in VO*** – analysis and design complete  Development and testing in progress. We expect to deliver a beta version for internal testing by August, 2014 and externally soon after. |
| ***Rewrite BR soft applications written in VB6***.  All VB6 BR Soft applications will be rewritten in the *BR Space Information System* following the established architecture.  This task will be done as part of the BR Information System project. SpaceQry, SpaceCap, SpacePub, GIBC and others will be redone following the selected architecture. |
| ***Consider rewriting the merge*** – Migration of the database from Ingres to SQL Server may require to redo the merge in 2014. Two engineers are now working on documenting the current Merge application. Meetings between developers and users have been initiated to review the Notice processing flow. |
| ***Review SNS Online*** – To be reviewed with the possibility of using the new querying service (SpaceQry) that will be implemented in the *BR Space Information System.* |
| ***Review SNTrack*** – This task should be done in conjunction with the development of Resolution 907 and 908. The experience gained in creating Sharepoint workflows will be useful in this task. |
| ***Migrate SRS.mdb to SQL Server localdb*** – Due to a Microsoft Access space limitation we are looking into migrating the SRS.mdb to a new container such as SQL Server localdb or SQLite.  Tests have been done with existing software and we have decided to migrate the SRS.mdb to SQL Server localdb instead of SQLite because of problems encountered updating the database using the ODBC driver for SQLite (the current BR Software applications use ODBC to connect to different database sources).  We are working on transferring data from our Ingres SNS database to a SQL Server localdb version of the SRS. This database is being tested and reviewed internally.  SQL Server localdb can only be used on Windows 7 and up so initially we may distribute the srs.mdb as 2 mdbs for users who still use Windows XP.  Using the BR Space SQL Server localdb does not require the installation of SQL Server management system however users may download and install SQL Server 2012 Express for free from the Microsoft website. |
| ***Migrate SNS database on Ingres to SQL Server*** – Due to costs and resources the IS department is migrating its Ingres databases to SQL Server as such, the BR Space SNS database should also be migrated.  The work already done to transfer data from Ingres to SQL Server localdb can be used to migrate the SNS Ingres database to a SQL Server database.  No major changes would be required to BR Space Applications using ODBC to access the database.  SNS Online would need to be redone. In the interim, we could copy the SNS data from SQL Server to an SNS database on Ingres.  The Merge would have to be rewritten.  Creation of the IFIC database would have to be redone. |

Annex 2  
  
List of events to which the BR participated in 2013

|  |  |  |  |
| --- | --- | --- | --- |
| **Title** | **Start** | **End** | **Place** |
| SPECIALIZED UN AGENCIES |  |  |  |
| 17th session of IMO COMSAR | 21/01/13 | 25/01/13 | London |
| WMO - Steering Group on Radio-Frequency Coordination (SG-RFC) | 22/01/13 | 25/01/13 | Ottawa |
| UN 2nd High Level Forum on Global Geospatial Info Mngt (GGIM) | 04/02/13 | 06/02/13 | Doha |
| 50th session of Scientific & Technical Subcommittee of COPUOS | 11/02/13 | 22/02/13 | Vienna |
| UNOOSA 1st Preparatory meeting for 8th meeting of ICG | 18/02/13 | 18/02/13 | Vienna |
| United Nations Geographical Information Working Group UNGIWG-13 | 27/02/13 | 01/03/13 | Istanbul |
| 28th meeting of ICAO Aeronautical Coms. Panel WG-F | 11/03/13 | 22/03/13 | Lima |
| 33rd session UN Inter-Agency Meeting on Outer Space Activities | 12/03/13 | 14/03/13 | Geneva |
| UNIDIR Space Security Conference 2013 | 02/04/13 | 03/04/13 | Geneva |
| 52nd session of the Legal Subcommittee of COPUOS | 08/04/13 | 09/04/13 | Vienna |
| WIPO - Inter-sessional Meeting Protection Broadcasting Organizations | 10/04/13 | 12/04/13 | Geneva |
| UNOOSA - ICG Interference Detection and Mitigation (IDM) Workshop | 19/04/13 | 20/04/13 | Hawaii |
| 56th session of the UN COPUOS | 14/06/13 | 21/06/13 | Vienna |
| WMO 1st Session Intergovernmental Board on Climate Services (IBCS) | 01/07/13 | 05/07/13 | Geneva |
| 17th meeting of ICAO European Frequency Management Group | 03/07/13 | 05/07/13 | Paris |
| 29th Meeting of ICAO WG-F | 03/09/13 | 12/09/13 | Nairobi |
| 23rd UN/IAF Workshop Space Tech. for Economic Devel. | 20/09/13 | 22/09/13 | Beijing |
| UN/UAE Symposium on Basic Space Technology | 20/10/13 | 23/10/13 | Dubai |
| 9th Meeting of IMO/ITU Joint Experts Group | 14/10/13 | 18/10/13 | London |
| REGIONAL TELECOMMUNICATION ORGANIZATIONS |  |  |  |
| 2nd CEPT CPG PT-D Meeting | 14/01/13 | 17/01/13 | Marseille |
| 2nd CPG-15 Meeting | 22/01/13 | 25/01/13 | Luxembourg City |
| 7th Meeting ECC FM 49 | 24/01/13 | 25/01/13 | Bonn |
| 1st African Group Preparatory meeting for WRC-15 | 18/03/13 | 20/03/13 | Dakar |
| 14th Meeting of APT Wireless Group (AWG-14) | 18/03/13 | 21/03/13 | Bangkok |
| ETSI 61st General Assembly and celebration ETSI's 25th Anniversary | 19/03/13 | 20/03/13 | Mandelieu |
| CEPT PTB Meeting | 19/03/13 | 21/03/13 | Copenhagen |
| CEPT PTA Meeting | 25/03/13 | 28/03/13 | Copenhagen |
| CITEL Satellite Seminar | 07/04/13 | 07/04/13 | Cali |
| XXI Meeting of CITEL PCC.II | 08/04/13 | 12/04/13 | Cali |
| 2nd CPG PTC Meeting | 16/04/13 | 19/04/13 | London |
| 2nd meeting RCC Comm. Management Freq. Spectrum & Satellite orbits use | 23/04/13 | 25/04/13 | Tashkent |
| 8th Meeting ECC FM 49 | 25/04/13 | 26/04/13 | Maisons-Alfort |
| 3rd CEPT CPG PT-D Meeting | 06/05/13 | 08/05/13 | Berlin |
| 77th WG FM | 20/05/13 | 24/05/13 | Amsterdam |
| 10th Meeting ECC FM 49 | 13/06/13 | 14/06/13 | Oslo |
| 1st SADC Preparatory Meeting for WRC-15 | 21/06/13 | 24/06/13 | Victoria Falls |
| 2nd Meeting APT Conf. Prep. Group for WRC-15 (APG15-2) | 01/07/13 | 05/07/13 | Bangkok |
| ECOWAS Digit. Switchover Forum + 1st ECOWAS Prep.Meet.WRC-15 | 01/07/13 | 05/07/13 | Abuja |
| 3rd PTB Meeting | 21/08/13 | 23/08/13 | Copenhagen |
| APT Wireless Group (AWG-15) | 27/08/13 | 30/08/13 | Bangkok |
| CEPT CPG PTA Meeting | 03/09/13 | 05/09/13 | Budapest |
| 4th CEPT CPG PT-D Meeting | 09/09/13 | 13/09/13 | Ljubljana |
| 3rd meeting of RCC Working Group on Spectrum Management | 11/09/13 | 13/09/13 | Moscow |
| 11th meeting ECC FM 49 | 17/09/13 | 18/09/13 | Copenhagen |
| 9th meeting CEPT/ECC FM Maritime Forum Group (former PT46) | 17/09/13 | 19/09/13 | Constanta |
| 3rd CEPT CPG Meeting for WRC-15 | 23/09/13 | 26/09/13 | Zagreb |
| 3rd CEPT CPG PTC Meeting | 08/10/13 | 11/10/13 | Bucharest |
| 78th CEPT WG FM | 30/09/13 | 04/10/13 | Montegrotto |
| 3rd session of RCC Comm. Reg. of use of Radio Frequency Spectrum | 08/10/13 | 10/10/13 | Astana |
| 3rd meeting RCC WG on preparations for RA-15/WRC-15 | 28/10/13 | 01/11/13 | Yerevan |
| XXII Meeting of CITEL PCC.II | 04/11/13 | 08/11/13 | Managua |
| 12th meeting ECC FM 49 | 12/11/13 | 13/11/13 | Driebergen |
| ETSI General Assembly and ETSI Future Mobile Summit | 19/11/13 | 21/11/13 | Mandelieu |
| CEPT/ECC Civil-Military | 26/11/13 | 27/11/13 | Dublin |
| 13th meeting ECC FM 49 | 03/12/13 | 05/12/13 | Copenhagen |
| Non-ITU CONFERENCES & SYMPOSIA |  |  |  |
| Eutelsat Jamming Workshop | 18/01/13 | 18/01/13 | Paris |
| 10th Global Shortwave Coordination Conference | 30/01/13 | 31/01/13 | Tunis |
| UEFA-ITU to promote inclusion of accessibility features in TV broadcasting | 31/01/13 | 31/01/13 | Nyon |
| 2nd IAA Conference University Satellite Missions & Cubesat Workshop | 06/02/13 | 07/02/13 | Roma |
| 8th Annual CTO's Digital Broadcasting Switchover Forum (DBSF) | 11/02/13 | 13/02/13 | Johannesburg |
| Ceremony of the World Radio Day | 13/02/13 | 13/02/13 | Madrid |
| Central European Radiocommunication Days (CERD) | 21/02/13 | 22/02/13 | Bratislava |
| GSMA - Mobile World Congress (MWC-2013) - Ministerial Programme | 26/02/13 | 26/02/13 | Barcelona |
| GSMA - Mobile World Congress (MWC-2013) | 25/02/13 | 28/02/13 | Barcelona |
| DVB World Conference 2013 | 11/03/13 | 13/03/13 | Madrid |
| GVF CABSAT 2013 | 12/03/13 | 14/03/13 | Dubai |
| 1st Preparatory Workshop on WRC-2015 (APT/ITU Foundation of India) | 14/03/13 | 15/03/13 | New Delhi |
| European Centre for Space Law (ECSL) Practioner's Forum | 15/03/13 | 15/03/13 | Paris |
| 6th Session of the General Assembly African Union of Broadcasting | 18/03/13 | 19/03/13 | Dakar |
| ATU/Ericsson Workshop on Mobile issues | 21/03/13 | 21/03/13 | Dakar |
| ATU/ITSO Workshop on Satellite issues | 22/03/13 | 22/03/13 | Dakar |
| 9th IAA Symposium on Small Satellites for Earth Observation | 09/04/13 | 10/04/13 | Berlin |
| Institute of Navigation (ION) Pacific PNT-13 Meeting | 22/04/13 | 25/04/13 | Hawaii |
| 10th Annual CubeSat Developers' Workshop | 26/04/13 | 26/04/13 | San Luis Obispo |
| Institut français des relations internationales (IFRI) Closed Seminar | 23/04/13 | 23/04/13 | Paris |
| ICTA 5th international Training Seminar on Spectrum Regulations | 06/05/13 | 06/05/13 | Istanbul |
| 1st Meeting of the Space Protocol Preparatory Commission | 06/05/13 | 07/05/13 | Roma |
| GSC-17 (Global Standards Collaboration) | 13/05/13 | 16/05/13 | Korea |
| World Broadcasting Unions Intl. Op. group (WBU-ISOG) Forum | 15/05/13 | 16/05/13 | Los Angeles |
| 2nd Luxembourg Intl. Workshop on Space Communications | 23/05/13 | 24/05/13 | Luxembourg City |
| MBT 2013 | 23/05/13 | 25/05/13 | Belgrade |
| SatCom Africa 2013 | 27/05/13 | 30/05/13 | Johannesburg |
| International Symposium on Radio Monitoring Technology | 04/06/13 | 05/06/13 | Chengdu |
| XIII Annual Conference National Radio Association | 05/06/13 | 08/06/13 | Kazan |
| 27th Session of Joint Committee of COSPAS SARSAT (JC-27) | 10/06/13 | 19/06/13 | Limassol |
| CASBAA Satellite Industry Forum | 17/06/13 | 17/06/13 | Singapore |
| Broadband for All - Annual Seminar Ericsson | 24/06/13 | 24/06/13 | Stockholm |
| 8th European Spectrum Management Conference 2013 | 25/06/13 | 26/06/13 | Brussels |
| 33rd Annual Space Frequency Coordination Group (SFCG) meeting | 25/06/13 | 03/07/13 | Toulouse |
| ANFR Conference "Spectrum and Innovation" | 27/06/13 | 27/06/13 | Paris |
| IEEE 802 - Workshop on Spectrum Sharing and White Space Stand. | 16/07/13 | 16/07/13 | Geneva |
| The Annual Asia Pacific Spectrum Management Conference 2013 | 26/08/13 | 26/08/13 | Bangkok |
| Latin American Spectrum Conference | 03/09/13 | 04/09/13 | Sao Paulo |
| European Satellite Day | 05/09/13 | 05/09/13 | Brussels |
| 10th Resolution 609 Consultation Meeting | 10/09/13 | 12/09/13 | Los Angeles |
| Jet Propulsion Laboratory (JPL) NASA-Presentation RR + small satellites | 13/09/13 | 13/09/13 | Pasadena |
| IBC 2013 Conference and Exhibition | 13/09/13 | 17/09/13 | Amsterdam |
| Conference on Spectrum Management | 20/09/13 | 20/09/13 | Lisbon |
| 64th International Astronautical Congress (IAC-2013) | 23/09/13 | 27/09/13 | Beijing |
| APSCC 2013 Satellite Conference & Exhibition | 24/09/13 | 26/09/13 | Hong Kong |
| 64th International Astronautical Congress (IAC-2013) | 27/09/13 | 27/09/13 | Beijing |
| 1st Advisory Board Meeting of PHYLAWS Project | 01/10/13 | 02/10/13 | Paris |
| ASBU Satellite Interference Forum | 06/10/13 | 07/10/13 | Tunis |
| Professional LTE & Spectrum Management Forum | 09/10/13 | 11/10/13 | London |
| 15th International Space Radio Monitoring (ISRM) Meeting | 15/10/13 | 17/10/13 | Kiev |
| 77th IEC General Meeting | 21/10/13 | 24/10/13 | New Delhi |
| FutureCom | 22/10/13 | 24/10/13 | Rio de Janeiro |
| European Satellite Operators Association (ESOA) Board Meeting | 23/10/13 | 23/10/13 | Brussels |
| COMTELCA Meeting | 07/11/13 | 07/11/13 | San Jose |
| Internl. Conference African Ministers - Transition to Terr. Digital TV | 07/11/13 | 08/11/13 | Paris |
| 8th Meet Intl. Comm. Global Navig. Satellite Syst. (ICG-8) | 10/11/13 | 14/11/13 | Dubai |
| ANE International Spectrum Congress "Innovation in use of Spectrum" | 12/11/13 | 13/11/13 | Bogota |
| ATU 1st meeting of African Spectrum Working Group (AfriSWoG) | 12/11/13 | 14/11/13 | Nairobi |
| DSA Global Summit 2013"the Dawn of Spectrum Abundance" | 18/11/13 | 18/11/13 | Bangkok |
| XVII NAT International Congress | 19/11/13 | 20/11/13 | Moscow |
| DigiWorld Summit 2013 | 20/11/13 | 20/11/13 | Montpellier |
| 3rd International Forum - Broadband Russia Forum 2013 | 27/11/13 | 28/11/13 | Moscow |
| Roundtable during BAKUTEL | 03/12/13 | 03/12/13 | Baku |
| Réunion "Aménagements numériques des territoires en Afrique" | 03/12/13 | 04/12/13 | Dakar |
| 7th Conf. African Communic. Reg. Authorities (ACRAN) | 10/12/13 | 12/12/13 | Niamey |
| EBU Sustainable Spectrum Management Group | 11/12/13 | 12/12/13 | Geneva |
| STUDY GROUPS MEETINGS |  |  |  |
| WP 5D meeting | 10/07/13 | 17/07/13 | Sapporo |
| JTG 4-5-6-7 | 22/07/13 | 31/07/13 | South Africa |
| ITU SEMINARS, WORKSHOPS & MEETINGS |  |  |  |
| Kaleidoscope 2013 - ITU's Academic Conference | 22/04/13 | 24/04/13 | Kyoto |
| ITU/PITA - Pacific Workshop | 22/04/13 | 26/04/13 | Samoa |
| ITU/CTU/CBU Seminar on Spectrum Management | 29/04/13 | 03/05/13 | Kingstown |
| 8th ITU Symposium on ICTs, the Environment and Climate Change | 06/05/13 | 07/05/13 | Turin |
| ITU/ITSO VSAT and Satellite Systems Workshop | 20/05/13 | 24/05/13 | Nassau |
| ITU/AICTO Seminar | 21/05/13 | 23/05/13 | Tunis |
| ITU Asia-Pacific Regional Workshop on Satellite Launching and Coord. | 03/06/13 | 05/06/13 | Yogjakarta |
| GSR-13 | 02/07/13 | 05/07/13 | Warsaw |
| ITU/RCC Regional Seminar for CIS and Europe on Radiomonitoring | 10/07/13 | 12/07/13 | Kiev |
| ITU/ATU Workshop to finalize the GE06 Frequency Plan | 17/07/13 | 19/07/13 | Nairobi |
| ITU Regional Workshop for CIS on the role of ICT in saving lives | 19/08/13 | 21/08/13 | Issyk-Kul |
| ITU/BIPM Workshop on the "Future of the Universal Time Scale" | 19/09/13 | 20/09/13 | ITU Geneva |
| ITU/ITSO Workshop | 22/09/13 | 25/09/13 | Amman |
| ITU Seminar in Greece on Digital Broadcasting Transition | 24/09/13 | 26/09/13 | Athens |
| ITU Regional Workshop for CIS on Implementation of DVB-T/DVB-T2 | 25/09/13 | 27/09/13 | Minsk |
| ITU/ITSO Workshop | 10/11/13 | 14/11/13 | Khartoum |
| Connect Asia-Pacific 2013 + ITU Telecom World 2013 | 18/11/13 | 22/11/13 | Bangkok |
| ITU Telecom World 2013 | 19/11/13 | 22/11/13 | Bangkok |
| Inter-Regional Workshop on WRC-15 Preparation | 04/12/13 | 05/12/13 | ITU Geneva |
| 11th ITU World Telecom. ICT Indicators Symposium(WTIS) | 04/12/13 | 06/12/13 | Mexico City |
| ITU/NTC Intern. Workshop on Transition to Digital Broadcasting | 17/12/13 | 18/12/13 | Khartoum |
| ASSISTANCE/INFORMATION REQUESTS |  |  |  |
| Assistance to Somalia | 16/01/13 | 16/01/13 | ITU Geneva |
| Assistance to Rwanda - Kigali Coordination Meeting on GE06 (EACO) | 18/02/13 | 22/02/13 | Kigali |
| Assistance to El Salvador - Transition to Digital TV | 18/02/13 | 22/02/13 | San Salvador |
| Assistance to Comoros - 1 day discussion | 01/03/13 | 01/03/13 | ITU Geneva |
| Assistance to GCC + Iran - 1st Regional Coordination Meeting | 11/03/13 | 15/03/13 | ITU Geneva |
| Assistance to Namibia - SADC 5th DTT Broadcasting Migration Forum | 15/04/13 | 17/04/13 | Swakopmund |
| Assistance to Georgia - Freq.Coord.Meeting - Black and Caspian Seas | 18/04/13 | 19/04/13 | ITU Geneva |
| Assistance to Mali - 2 engineers to come for training | 29/04/13 | 03/05/13 | ITU Geneva |
| Assistance to Comoros - 3 engineers to come for training | 06/05/13 | 10/05/13 | ITU Geneva |
| Assistance to Botswana | 06/05/13 | 10/05/13 | ITU Geneva |
| Assistance to Romania - CEE Regional Working Group Meeting | 09/05/13 | 09/05/13 | Bucharest |
| Assistance to Mongolia to discuss National Satellite Program | 07/06/13 | 08/06/13 | Mongolia |
| Assistance to Zimbabwe - 2nd SADC Coordination meeting for GE06 | 17/06/13 | 21/06/13 | Victoria Falls |
| Assistance to Somalia - Seminar on Notification Frequency Assign. | 29/06/13 | 30/06/13 | Dubai |
| Assistance to Palestine to assist in process of transition to digital TV | 26/08/13 | 30/08/13 | Ramallah |
| 1st Kick-off meeting Assistance NBTC Spectrum Auction Study Project | 17/09/13 | 20/09/13 | Bangkok |
| Assistance to China - Satellite Workshop following IAC-2013 | 28/09/13 | 30/09/13 | Beijing |
| Assistance to Peru - Seminar on Space issues | 28/10/13 | 30/10/13 | Lima |
| Assistance to Armenia on ITU Space Regulatory issues | 28/10/13 | 31/10/13 | Yerevan |
| Assistance to ANE - Colombia - Seminar on Space issues | 31/10/13 | 01/11/13 | Bogóta |
| Assistance to Sudan & South Sudan - Workshop in Addis or Cairo | 04/11/13 | 07/11/13 | Addis Ababa |
| 2nd meeting Assistance to NBTC - Spectrum Auction Study Project | 05/11/13 | 12/11/13 | Bangkok |
| Assistance to ANE - Colombia - Seminar on Terrestrial issues | 12/11/13 | 15/11/13 | Bogóta |
| Assistance to ANE - Colombia - Seminar on Spectrum Management | 12/11/13 | 13/11/13 | Bogóta |
| Technical assistance to MINTIC - Colombia | 14/11/13 | 15/11/13 | Bogóta |
| Assistance to Mozambique | 06/12/13 | 13/12/13 | ITU Geneva |
| 3rd meeting Assistance to NBTC - Spectrum Auction Study Project | 16/12/13 | 20/12/13 | Bangkok |
| MISCELLANEOUS |  |  |  |
| Lecture on Satellite issues at Internl. Institute of Ari and Space Law | 26/02/13 | 26/02/13 | Leiden |
| Meeting with NBTC - Thailand | 31/05/13 | 31/05/13 | Bangkok |
| Funeral of Mr. Peter Pauli from OFCOM | 21/06/13 | 21/06/13 | Solothurn |
| Funeral of Ms. Marie-Thérèse Alajouanine from ARCEP | 08/07/13 | 08/07/13 | Montluçon |
| Demonst. of transmission radio signals supported by OAM mode | 24/09/13 | 24/09/13 | Padua |
| Visit to ASTRIUM and AIRBUS | 09/10/13 | 10/10/13 | Toulouse |
| Invitation to the launch of TSDSI in India | 08/11/13 | 08/11/13 | New Delhi |
| Invitation to make presentation on TVWS during WP 5A Seminar | 18/11/13 | 18/11/13 | Geneva |
| Meeting with CEO of KTSAT | 19/11/13 | 19/11/13 | Seoul |
| Funeral of Mr. Hassane Makki from OFCOM | 28/11/13 | 28/11/13 | Lausanne |
| Conference Business & Professional Women (BPW)-Enjeux de l'UIT-R | 04/12/13 | 04/12/13 | Geneva |

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1. These include the ITU‑R Handbooks on National Spectrum Management; Computer Aided Techniques for Spectrum Management and Spectrum Monitoring. [↑](#footnote-ref-1)