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| **Radiocommunication Study Groups** |  |
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|  | **Document 6A/360-E** |
| **19 December 2013** |
| **English only** |
| Chairman, Working Party 6A |
| report of the meeting of working party 6a |
| (Geneva, 12-20 November 2013) |

# 1 Executive summary

The meeting was chaired by L. Olson (USA) and assisted by Vice-Chairmen A. Nafez (IRN), R. Bunch (AUS), M. Hate (G) and J. Song (CHN).

The meeting was attended by more than 120 participants, including representatives from Administrations, Recognized Operating Agencies, Scientific or Industrial Organizations as well as Regional and other International Organizations (Document [6A/359](http://www.itu.int/md/R12-WP6A-C-0359/en)). The group considered more than 100 input documents (Annex 1), including several separate annexes to an input document, and produced 37 output documents (Annex 20). Four Sub-Groups were established and were assigned relevant input documents for their consideration. In addition to general sound and television broadcasting subjects, the groups covered sharing/protection of the broadcasting service, preparations for WRC-15 and other matters.

**1.1 Liaison statements**

The Working Party approved 10 liaison statements covering subjects such as coexistence of wired telecommunications with radiocommunication systems; on-going work on the importance of radio and television broadcasting for providing emergency information to the public; frequency bands used for nano-satellite and pico-satellite systems; and WRC-15 preparation (sharing parameters, technical and operational characteristics, adjacent band compatibility, spectrum requirements, and propagation) (Annex 19).

**1.2 Reports**

Three draft new Reports were adopted and submitted to Study Group 6 for consideration:

(1) Document [6/178](http://www.itu.int/md/R12-SG06-C-0178/en) - Draft new Report ITU-R BT.[ISDBT\_RELAY] - Construction technique of DTTB relay station network for ISDB-T;

(2) Document [6/180](http://www.itu.int/md/R12-SG06-C-0180/en) - Draft new Report ITU-R BT.[DTB] - Digital terrestrial broadcasting systems; and

(3) [Document 6/186](http://www.itu.int/md/R12-SG06-C-0186/en) - Draft new Report ITU-R BT.[ASSESS-EXAMPLE] - Example of application of Recommendation ITU-R BT.1895 and Report ITU-R BT.2265 to assess interference to the broadcasting service caused by the impact of IMT systems on existing head amplifiers of collective television distribution systems.

Two draft revisions of Reports were adopted and submitted to Study Group 6 for consideration:

(1) Document [6/179](http://www.itu.int/md/R12-SG06-C-0179/en) - Draft revision of Report ITU-R BT.2252 - Objective quality coverage assessment of digital terrestrial television broadcasting signals of Systems Aand B; and

(2) Document [6/181](http://www.itu.int/md/R12-SG06-C-0181/en) - Draft revision of Report ITU-R BT.2254 - Frequency and network planning aspects of DVB-T2.

**1.3 Recommendations**

One draft new Recommendation was adopted and submitted to Study Group 6 for consideration:

(1) Document [6/185](http://www.itu.int/md/R12-SG06-C-0185/en) - Draft new Recommendation ITU-R BT.[ETMMPLAN] - Planning criteria for terrestrial multimedia broadcasting for mobile reception using handheld receivers in VHF/UHF bands.

Two draft revisions of Recommendations were adopted and submitted to Study Group 6 for consideration:

(1) Document [6/177](http://www.itu.int/md/R12-SG06-C-0177/en) - Draft revision of Recommendation ITU-R BT.1735 - Methods for objective reception quality assessment of digital terrestrial television broadcasting signals of System B specified in Recommendation ITU-R BT.1306; and

(2) Document [6/184](http://www.itu.int/md/R12-SG06-C-0184/en) - Draft revision of Recommendation ITU-R BT.1368-10 - Planning criteria, including protection ratios, for digital terrestrial television services in the VHF/UHF bands.

One additional item was adopted and submitted to Study Group 6 for consideration:

(1) Document [6/176](http://www.itu.int/md/R12-SG06-C-0176/en) - Liaison statement to the Director of the Radiocommunication Bureau and to the RAG - Natural and “man-made” disasters - The role of the terrestrial broadcasting service

## 1.4 Work in progress

Work continued under the guidance of Rapporteurs on important matters such as preparation of
a Report on the value of the broadcasting service during emergency situations; worldwide broadcasting roaming; the digital sound broadcasting transition; and single frequency networks.

The Working Party studied a variety of matters and made significant progress on possible future Reports and Recommendations. As in past meetings, a major effort involved the continuation of preparations for WRC-15 where several agenda items are of interest to Working Party 6A. The WRC-15 Rapporteur Group that was established at an earlier meeting will continue to work in the interim to develop helpful contributions in the short time-frame allotted by the scheduled deadlines leading up to WRC-15. All intermediate texts are to be attached as annexes to the Chairman’s Report to encourage relevant contributions to the next meeting of Working Party 6A (March 2014).

The Working Party studied a variety of matters and made significant progress on possible future Reports and Recommendations. In addition, a major effort during this meeting was the continuation of preparations for WRC-15 where several agenda items are of interest to Working Party 6A. The WRC-15 Rapporteur Group that was established at an earlier meeting will continue to work in the interim to develop helpful contributions in the short time-frame allotted by the scheduled deadlines leading up to WRC-15.

The following intermediate texts are attached as annexes to the Chairman’s Report to encourage relevant contributions to the next meeting of Working Party 6A (March 2014):

– Preliminary draft revision of Recommendation ITU-R BT.1206-1 – Spectrum limit masks for digital terrestrial television broadcasting (Annex 2).

– Preliminary draft revision of Recommendation ITU-R BT.1306-6 - Error correction, data framing, modulation and emission methods for digital terrestrial television broadcasting (Annex 3).

– Preliminary draft revision of Recommendation ITU-R BT.1871 - User requirements for wireless microphones (Annex 4).

– Preliminary draft revision of Recommendation ITU-R BT.[ETMMPLAN] – Planning criteria for terrestrial multimedia broadcasting for mobile reception using handheld receivers in VHF/UHF bands (Annex 5).

– Preliminary draft new Report ITU-R BT.[EMBC] – The importance of terrestrial broadcasting in providing emergency information to the public (Annex 6).

– Preliminary draft new Report ITU-R BT.[ACTIVE DEVICE MODEL] - Reference model to be used for the assessment of interference into the television broadcasting service in order to take into account non-linearity in the television radio frequency receiving system (Annex 7).

– Preliminary draft new Report ITU-R BT.[DTTBSPECREQ] - Spectrum requirements for terrestrial television broadcasting in the frequency band 694-790 MHz in Region 1 and Iran (Annex 8).

– Preliminary draft revision of Report ITU-R BT.2265 – Guidelines for the assessment of interference into the broadcasting service (Annex 9).

– Working document towards a preliminary draft new Report ITU-R BT.[R-WBR] – Main functionalities of consumer receivers for worldwide broadcasting roaming (Annex 10).

– Working document towards a preliminary draft new Report ITU-R BT.[INTERFERENCEDESCRIPTION] - General description of interference into a DTT receiver (Annex 11).

– Working document toward preliminary draft new Report ITU-R BT.[FIELD\_REPORTS\_IMT] – National field reports on the introduction of IMT
with co-primary allocation to the broadcasting and mobile services (Annex 12).

– Working document toward a preliminary draft new Report ITU-R BS.[DSB-TRANSITION] - Implementation considerations for the transition to digital terrestrial sound and multimedia broadcasting (Annex 13).

– Working document toward a preliminary draft new Report ITU-R BS.[CRS\_BS\_BANDS] - Compatibility issues and national approaches related to introduction of cognitive radio systems within frequency bands used by terrestrial broadcasting services (Annex 14).

– Working document towards a preliminary draft revision of Report ITU-R BT.2215 – measurements of protection ratios and overload thresholds for broadcast TV receivers (Annex 15).

– Draft liaison statement to Study Group 1 and Working Party 1A concerning Recommendation ITU-R SM.1541-5 (copy to WPs 4A, 4B, 4C, 5A, 5B, 5C, 5D, 7B, 7C, 7D, 3K, 3M and JTG 4-5-6-7) (Annex 16).

– Establishment of a Rapporteur Group on “Design and implementation of single frequency networks (SFN)” (Annex 17).

– Updates to work plan for studies within Working Party 6A and related to WRC-12 Resolutions and Recommendations (Annex 18).

# 2 Structure

In view of the volume of contributions and respecting the limited time available to complete
the work of the Working Party, the Chairman suggested and the group agreed to the establishment of the following Sub- Groups and Organization of the work as follows:

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| Working Party 6A Sub-Groups |
| Sub-Group | Subject | Chairman | Assigned documents |
| 6A-1 | Terrestrial emission | A.H. Nafez  | 6A/264(Annexes 2, 3, 4, 5, 8, 11, 13, 14, 15, 17, 18), 277, 280, 281, 285, 299Rev.1, 300, 303, 304, 307, 309, 310, 312, 314, 315, 316, 317, 321, 322, 326, 328, 330, 332, 333, 334, 340, 344, 345, 350, 351, 352 |
| 6A-2 | Protection | M. Hate | 6A/264(Annexes 7, 9, 12), 265, 266, 267, 268, 269, 270, 272, 273, 274, 275, 276, 278, 284, 289, 290, 295, 296, 311, 313, 323, 327, 336, 343 |
| 6A-3 | Sharing | R. Bunch | 6A/264(Annexes 6, 10, 19), 271, 282, 283, 286, 287, 291, 298, 302, 305, 306, 308, 320, 324, 325, 329, 331, 335, 337, 338, 339, 341, 342, 347, 348, 349 |
| 6A-4 | Other | M. Mullinix | 6A/264(Annex 16), 288, 292, 293, 294, 297, 301, 318, 319, 346, 353 |

# 3 Results

## 3.1 Sub-Group 6A-1 (Terrestrial emission)

Sub-Group 6A-1, chaired by Mr. A.H. Nafez (IRN), dealt with 47 input documents including relevant annexes of previous Chairman’s Reports and produced 18 outputs accordingly. The documents were grouped into subject matter for introduction and discussion.

Sub-Group 6A-1/1 (Sound) chaired by Dr.J.Song (CHN) was established to discuss issues related to sound and multimedia broadcasting and considered 13 input documents and produced 3 outputs.

Sub-Group 6A-1/2 (Tech.charac) chaired by T.Vieracker (NDR) was established to discuss technical and operational characteristics of DTB systems and considered 11 input documents and produced 5 outputs.

The remaining documents related to Television broadcasting issues (i.e. 21 input documents) and were discussed within the main body of 6A-1 and 10 output documents were developed accordingly.

Most of the input documents related to items falling into three categories: Liaison statements,
ITU-R  Recommendations, and ITU-R Reports – and resulted in 18 TEMP documents, 17 of which were finally approved in plenary of WP 6A as shown below.

**3.1.1 Liaison statements**

6A/TEMP/115: *Liaison Statement to working party 6B,* **Preparation of preliminary draft new Recommendation on main functionalities of consumer receivers for worldwide broadcasting roaming.** WP 6A asks Working Party 6B to identify the metadata required to deliver information needed for automatic tuning of a consumer receiver in a user friendly manner, preferably based on existing metadata specifications that are already in widespread use in broadcasting.

6A/TEMP/128: *Liaison Statement to Joint Task Group 4-5-6-7,* **Technical and operational characteristics of terrestrial television broadcasting for sharing and compatibility studies between the broadcasting service and the mobile service under WRC-15 agenda item 1.1.** Working Party 6A requests that JTG 4-5-6-7 include the recently approved Recommendation
ITU-R BT.2036,entitled “Characteristics of a reference receiving system for frequency planning of digital terrestrial television systems”, in the technical and operational characteristics for sharing and compatibility studies involving the broadcasting service.

**3.1.2 Recommendations**

6A/TEMP/119: *Draft new Recommendation ITU-R BT.1735,* **Methods for objective reception quality assessment of digital terrestrial television broadcasting signals of System B specified in Recommendation ITU-R BT.1306.**Revision to this recommendation addresses the possibility to have three distinct classes of MER performance corresponding to DVB-T *tiers of services*.
After attaching this proposed revision to the previous Chairman Report and receiving no further comment in this meeting, the group decided to submit the document to SG 6 for approval.

6A/TEMP/141: *Draft new Recommendation ITU-R BT.[ETMMPLAN],* **Planning criteria for terrestrial multimedia broadcasting for mobile reception using handheld receivers in VHF/UHF bands.** This document which is a modification to Annex 2 of the previous Chairman Report (Document 6A/264) defines planning criteria for terrestrial multimedia broadcasting for mobile reception using handheld receivers in VHF/UHF bands. This initial version of the Recommendation includes planning criteria for two systems: ISDB-T and T-DMB family. Other systems are not included since their relevant information either was not submitted or submitted just before this meeting and therefore needed further time for consideration.The document is to be submitted toSG 6 for adoption and approval.

6A/TEMP/139: *Preliminary draft revision to draft new Recommendation ITU-R BT.[ETMMPLAN],* **Planning criteria for terrestrial multimedia broadcasting for mobile reception using handheld receivers in VHF/UHF bands.** This version of the Recommendation includes planning criteria for DVB-T2 Lite profile in a new Annex. As the information was received just before this meeting, Working Party 6A decided not to submit this part to SG 6 for approval. Consequently, it is attached to the Chairman's Report.

6A/TEMP/140: *Draft revision to Recommendation ITU-R BT.1368*, **Planning criteria, including protection ratios, for digital terrestrial television services in the VHF/UHF bands**. This revision aims to change the ISDB-T part of the Recommendation in particular, with respect to adjacent channel protection ratios and overload thresholds against interference from LTE.
This revision of the Recommendation is to be submitted to SG 6 for adoption and approval.

 6A/TEMP/122: *Preliminary draft revision of Recommendation ITU-R BT.1306-6,* **Error correction, data framing, modulation and emission methods for digital terrestrial television broadcasting.** Working Party 6A received two contributions one from Japan supporting the preliminary draft revision of Recommendation ITU-R BT.1306 that makes reference to Recommendations ITU-R BT.1206 and ITU-R SM.1541 (Annex 5 of previous Chairman's Report). Furthermore, it proposes an additional note to clarify the difference between the generic and specific mask.

Working Party 6A also received a contribution from China which proposes to introduce error-correction, data framing, modulation and emission methods of Digital Television Terrestrial Multimedia Broadcast – Advanced (DTMB-A), which is to be included as System E in the Recommendation ITU-R BT.1306-6. However, as WP 6A has developed a separate Recommendation for second generation digital terrestrial television systems (Recommendation ITU-R BT.1877), pending on the confirmation of China, this part may need to be transferred to that Recommendation. Therefore, the document is attached to the Chairman’s Report. Hopefully, for next WP 6A meeting, revision to Recommendation BT.1306 will be approved.

6A/TEMP/123: *Working document toward preliminary draft new Recommendation
ITU-R BT.[R-WBR],* **Main functionalities of consumer receivers for worldwide broadcasting roaming.** The Rapporteur Group on main functionalities of consumer receivers for worldwide broadcasting roaming, established at the April 2013 meeting, submitted a working document which specifies a list of main functionalities of consumer receivers that are desirable for future receivers suitable for worldwide broadcasting roaming, taking into account the proposals of Italy and Vatican City State contribution. The document is attached to the Chairman’s Report.

6A/TEMP/124: *preliminary draft revision of Recommendation ITU-R BT.1206-6,* **Spectrum limit masks for digital terrestrial television broadcasting.** To its November 2013 meeting, Working Party 6A received a contribution from People’s Republic of China which proposes to revise Recommendation ITU-R BT.1206-1 by adding spectrum masks for DTMB with the system bandwidth of 6 and 7 MHz. The document is attached to the Chairman’s Report.

**3.1.3 Reports**

6A/TEMP/120: *Draft revision to Report* *ITU-R BT.2252 -* **Objective quality coverage assessment of digital terrestrial television broadcasting signals of System A and B.** In April 2013, Working Party 6A received a proposal for the modification of Report ITU-R BT.2252 which comprises analysis of data from field surveys conducted in South Australia, Victoria and Queensland in new annex D of Chapter 2.2.3 of Part 2 of Report ITU-R BT.2252. Annexes A, B and C were proposed at the October 2012 meeting including field survey in other parts of Australia. To its November 2013 meeting, WP 6A received no further comment and therefore decided to submit it to SG 6 for adoption and approval.

6A/TEMP/121: *Draft new Report* *ITU-R BT.[ISDBT-RELAY],***Construction technique of DTTB relay station network for ISDB-T.** Working Party 6A has been developing a new Report on the technique to construct the DTTB network for the ISDB-T system and produced a preliminary draft new Report at its April meeting in 2013.(Annex 8 to Document 6A/264). To its November 2013 meeting, WP 6A received a contribution from Brazil and Japan provide additional descriptions of satellite link and optical fibre link to transmit the television signals from the studio to the relay stations across the nation. These methods of signal distributions are commonly used in ISDB-T systems. The document is to be submitted to SG 6 for adoption and approval.

6A/TEMP/126: *Draft revision of Report ITU-R BT.2254,* **Frequency and network planning aspects of DVB-T2.** In this revision, among others, § 3.4 on protection ratios has been updated with the most recent information from Recommendation ITU-R BT. 2033, further assessment on MISO is provided, new Annex 6 has been introduced to provide more information about the sharp transition at the edge of the equalisation interval (EI) and updated information on the status of implementation of DVB-T2 in certain European countries is provided. The document is to be submitted to SG 6 for adoption and approval.

6A/TEMP/127: *Draft new Report* *ITU-R BT.[DTB],* **Digital terrestrial broadcasting systems.**The Rapporteur Group developed this new Report which covers all types of digital terrestrial broadcasting systems – sound, multimedia and TV – described in a set of ITU-R Recommendations and Reports. The Report is intended to simplify the choice of Administrations when deciding on
a digital broadcasting system to satisfy national purposes. The document is to be submitted to SG 6 for adoption and approval.

6A/TEMP/142: *Working document towards a preliminary draft new Report* *ITU-R BT.[DSB-TRANSITION],* **Implementation considerations for the transition to digital terrestrial sound and multimedia broadcasting.** The working document is based on further consideration of the output of the April 2013 meeting of Working Party 6A in the Rapporteur Group on DSB Transition and also new submissions to the November 2013 meeting of Working Party 6A. Considerable work still needs to be done on collecting further relevant information and in formatting the document in an easily accessible style. The document is attached to the Chairman’s Report.

6A/TEMP/129: *Working document towards a preliminary draft new Report* *ITU-R BT.[ INTERFERENCE DESCRIPTION],* **General description of interference into a DTT receiver.** This document provides a general description of interference into a DTT receiver as well as measurements on the effect of a short pulse on the TV picture. The document is attached to the Chairman’s Report.

6A/TEMP/130: *Working document towards a Preliminary Draft revision of Report* *ITU-R BT.2215,* **Measurements of protection ratios and overload thresholds for broadcast TV receivers.** Working Party 6A received a contribution from UK that contains measurements on some current production DVB-T2 receivers against interference from LTE which give an indication of the performance of the latest receivers currently on sale in the UK and Europe. WP 6A also received another contribution from RUS with respect to measurements of protection ratios from a wireless broadband system. This material should be reviewed and discussed in further meetings of WP 6A.

**3.1.4 Miscellaneous**

**3.1.4.1** 6A/TEMP/125: This document reflects the decision of WP 6A in establishing a Rapporteur group to solicit, collect and collate information on the design and implementation of SFN from countries where such networks are in operation, and information on receivers functionality in SFN mode from receiver manufacturers and prepare a Report accordingly.

**3.1.4.2** 6A/TEMP/149(Rev1): Draft *Liaison Statement to Joint Task Group 4-5-6-7,* **Quality of service parameters for digital television broadcasting for use in the JTG 4-5-6-7 studies.**

In this liaison statement WP 6A developed a proposal to the JTG 4-5-6-7, based upon input contributions to the meeting, about the impact of interference to DTTB causing the cliff edge effect when the interference exceeds the planned protection ratio as well as a time window for assessment of the interference based on the “quasi error free” (QEF) concept which is contained in many ITU-R Recommendations and ETSI Standards.

At the level of drafting group, this led to serious difficulty and debate. However, after some round of re drafting the text, finally it was agreed and also approved at the level of Sub-Group 6A-1.

Unfortunately, at the subsequent WP 6A Plenary, similar discussion started and those administrations who were finally convinced at the level of drafting group, again opposed approval of the proposed liaison statement. For each of their concerns, the WP 6A meeting attempted to provide a solution which satisfied the concerns. At the end of the debate, while the text was close to being acceptable or at least remained without any point of argument, some administrations did not agree to submit it to JTG 4-5-6-7.

Some Administrations and sector members expressed their deep disappointment of such an outcome and stated that it is most regrettable that a few administrations prevent WP 6A to defend its position and clarify one of its very principle to JTG 4-5-6-7. Finally, this liaison statement was not approved.

**3.1.4.3** At its November 2013 meeting, Working Party 6A considered the status of 6A/264 Annex 13 and concluded the document’s title did not fully represent the content within the document. Therefore it proposed a title change to Working document toward preliminary draft new Report ITU-R BT.[OFDM NON LINEARITY EFFECTS] **Theory of OFDM non linearity effect to DTTB System B (DVB)**. Furthermore it is proposed the work in this area be directed to the work on the SG 6 DTTB Handbook.

**3.1.4.4** In this meeting, WP 6A received a Liaison Statement from Working Party 3L concerning the maps of effective ground conductivity for use at MF, and seeks guidance on
the most useful specification for the maps to be included in future revisions of Recommendation
ITU-R P.832. Consequently all administrations are invited to contribute on the issue for next meeting.

**3.1.4.5** WP 6A received contribution 6A/344 (Lebanon) proposing to add MVDS system in the Draft new report ITU-R BT.[DTB] “Digital terrestrial broadcasting systems”. However, this Report only collates those systems characteristics which are already appearing in other ITU-R Recommendations and Reports ( see terms of reference of the relevant Rapporteur group in
Annex 12 to WP 6A Chairman’s Report Doc[. 6A/170](http://www.itu.int/md/R12-WP6A-C-0170/en)). Therefore the proponent of the document is invited to proceed accordingly.

Also in document 6A/345 (Lebanon) it was requested to distribute a Questionnaire on the use of MVDS. However, it was not clear how its result could help WP 6A in its work. Therefore it was not considered as absolutely necessary at this stage.

**3.1.4.6** WP 6A received a contribution 6A/300 from Rapporteur Group of SG 6 on spectrum requirements for the future of broadcasting requesting all working parties of SG 6 to give an indication of the current and future spectrum requirements for the future of broadcasting.

Therefore all members, in particular, broadcasters are invited to contribute in this regard and to provide WP 6A of their road map for the future of Broadcasting service.

**3.1.4.7** Documents 6A/277, 280 and 285 were introduced and the meeting took note of them.
No further action was required.

### 3.1.5 Acknowledgements

Sincere appreciation was extended to the Chairman of the sound and multimedia subgroup
Mr. J. Song (CHN), Chairman of the technical characteristics group Mr. T. Vieracker (NDR) and also to those effectively contributing to the preparation of various output documents.

The Chair of Sub-Group 6A-1 also thanked the Chair of WP 6A and SG 6 and the Counselor of WP 6A for their guidance and the Secretariat for their support during the meeting in completing
the work.

**3.2 Sub-Group 6A-2 (Protection)**

The group, chaired by Mr M. Hate (UK), considered 30 documents. Four were of a miscellaneous nature and were being considered in detail by other Sub-Groups but were noted as having some content that was of interest in the arena of “Protection”. Otherwise the documents divided into
5 broad subject areas as shown in the following table:

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| Subject | Document |
| Radio communication for people with impaired hearing | 6A/ 265, 266, 267, 270, 295, 296 |
| Cognitive devices | 6A/264(Annex 9), 278, 311, 323, 343 |
| Interaction between wired and wireless communications | 6A/268, 269, 272, 273, 274, 275, 276, 284, 290, 313, 336 |
| Disturbances to non-linear elements in receiver ‘front ends’ | 6A/264(Annexes 7 and 12), 327 |
| Recommendation ITU-R SM 1541 | 6A/289 |

**3.2.1 Radio communication for people with impaired hearing**

The ITU Task Group JCA\_AHF (Joint Co-ordination Activity on Accessibility and Human factors) is considering direct radio communication with hearing aids. As an example, this might be useful for relaying announcements to people in public spaces like airports. A number of Liaison Statements between interested parties have been copied to WP 6A and it appears that for the time being it is unlikely that there will be any impact on the Broadcasting Service. One of the documents sought representation from WP 6A on the JCA\_AHF task group. Having considered this request,
the Sub-Group decided that WP 6A did not at this stage need to be formally represented but that its interests could be covered by Mr. Brian Copsey who already represents WP 5B on the task group.
A Liaison statement back to the Task Group was prepared informing them of this decision.

**3.2.2 Cognitive Devices**

A Drafting Group was established to consider the nascent Report on this subject along with input contributions from various administrations and a request from WP 1B to inform them of the activities of WP 6A in this area. Given that this is a matter that might best be administered at a national level it was decided that the Report should take the form of a ‘framework document with a number of national positions attached as Annexes. A (re-)draft of the Report is attached to the
WP 6A Chairman’s Report and Administrations are encouraged to make contributions.
In formulating a Liaison Statement to WP 1B outlining the activities of WP 6A it was recognized that there are a number of terms used to describe “Cognitive” and similar devices which seek to use spectrum on an “impromptu” basis as and where it is not being used by other services.
“White Space” and “opportunistic devices” are examples. These terms are not well defined and indeed, different groups within the ITU attach different meanings to them. This can make it difficult to understand and to respond to enquiries from other Working Parties. It was further decided, therefore, that clarification should be sought from the CCV (Co-ordination Committee for Vocabulary). A liaison statement to the CCV was prepared.

**3.2.3 Interaction between wired and wireless communication**

A number of documents were received from other Working Parties in both the R and T sectors, but all were summarized in Document 6A/336, a comprehensive status Report from the SG 6 Rapporteur on PLT and related issues. Taking note of these documents and developments in the GFAST and J.HINOC-REC Recommendations in ITU-T, Liaison Statements were developed for submission to:

– ITU-T Study Group 15 outlining WP6A’s concerns over the GFAST development; and

– ITU-T Study Groups 9 and 5 outlining concerns over the J.HINOC-REC development.

**3.2.4 Disturbances to non-linear elements in receiver** “**front ends**”

The issue here was the potential disturbance to mast head amplifiers and other ‘RF front end’ devices which could stop working if local, high level interference drove the front end into a nonlinear operating region and effectively prevented it from working. The use of head amplifiers is prevalent in some countries, for example Italy, where the signals from a number of antennas are combined at the mast head for onward distribution to a number of receivers in – for example – an apartment block.

Document 6A/264 (Annex 7) was a preliminary draft new Report (appended to the chairman’s Report from the April meeting) detailing how interference into mast head amplifiers from IMT systems might be assessed. No contributions or comments were received and the PDN Report was therefore offered as a Report. Document 6A/264 (Annex 12) was a Working Document toward a preliminary draft new Recommendation suggesting a reference model for mast head amplifiers to be used for planning purposes. Document 6A/327 was a further contribution on this subject which, among other things, widened the scope of the PDNR to include non-linearities in any RF ‘front end device. It was felt that at this stage, a Recommendation on this subject was not needed but a Report would be more appropriate. The document was duly re-drafted to be appended to the Chairman’s Report as a Draft New Report. Contributions from Administrations and Sector Members are invited.

**3.2.5 Recommendation ITU-R SM.1541**
One of the documents considered by Sub- Group 6A-2 was from SG 1 drawing attention to a revision of Recommendation ITU-R SM. 1541-5.The Recommendation is on the subject of out of band emissions and includes a number of spectrum masks for various systems. It was noted that there were a number of omissions; various terrestrial broadcast systems and systems occupying bands immediately adjacent to the broadcasting bands were absent from the Recommendation. Clearly, the provision of information regarding the terrestrial broadcasting service is the responsibility WP 6A. An attempt was made to draft a reply to SG 1 pointing out these omissions. Given that the next meeting of SG 1 will not take place until after the next meeting of WP 6A,
it was felt that the reply to the Liaison Statement could be delayed. This would provide an opportunity to gather the missing information about the broadcasting services and carefully consider the text asking for data about adjacent services. It was also felt that the current draft of the reply to the Liaison Statement should be appended to the Chairman’s Report (Annex 16).

## 3.3 Sub-Working Group 6A-3 (Sharing)

At its November 2013 meeting (12th to 20th November), Working Party 6A established Sub-Group 6A-3 to deal with “sharing” issues, including matters relating to WRC-15 agenda Items. Working Party 6A requested that Mr R. Bunch (Australia) chair Sub-Group 6A-3.

**3.3.1 Input contributions**

Sub-Group 6A-3 was allocated 30 documents which were: 6A/264(Annexes 6, 10, 19), 4-5-6-7/242(Annex 5), 6A/271, 282, 283, 286, 287, 291, 298, 302, 305, 306, 308, 320, 324, 325, 329, 331, 333, 335, 337, 338, 339, 341, 342, 347, 348, 349.

a) Documents from previous meeting:

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| 6A/264 Annex 6 | Annex 6 Preliminary draft revision of Recommendation ITU-R BT.1871 - User requirements for wireless microphones |
| 6A/264 Annex 10 | Preliminary draft new Report ITU-R BT.[DTTBSPECREQ] - Spectrum requirements for terrestrial television broadcasting in the frequency band 694-790 MHz in Region 1 and the Islamic Republic of Iran |
| 6A/264 Annex 19 | Updates to Work Plan for studies related to WRC-12 Resolutions and Recommendations |

b) Documents to this meeting:

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| [**[ 349 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0349)      | [Norddeutscher Rundfunk (NDR)](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=Norddeutscher%20Rundfunk%20(NDR)) , [Zweites Deutsches Fernsehen](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=Zweites%20Deutsches%20Fernsehen)   | General description of interference into a DTT receiver     |
| [**[ 348 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0348)      | [Germany (Federal Republic of)](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=Germany%20(Federal%20Republic%20of))   | Information on applied principles to protect the broadcast service in neighbouring countries when introducing the IMT service in the 800 MHz band     |
| [**[ 347 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0347)      | [Germany (Federal Republic of)](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=Germany%20(Federal%20Republic%20of))   | Field Report on the applied methodology used by Germany to protect the broadcast service when implementing the IMT service in the 800 MHz band     |
| [**[ 342 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0342)      | [European Broadcasting Union](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=European%20Broadcasting%20Union)   | Issues related to DTTB protection from IMT UE interference in the Joint Task Group 4-5-6-7 studies     |
| [**[ 341 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0341)      | [European Broadcasting Union](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=European%20Broadcasting%20Union)   | Description of time elements for consideration in IMT to DTTB compatibility calculations     |
| [**[ 339 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0339)      | [Broadcast Networks Europe](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=Broadcast%20Networks%20Europe)   | Monte Carlo simulations: Requirement for information on changes of state in an IMT network     |
| [**[ 338 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0338)      | [Broadcast Networks Europe](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=Broadcast%20Networks%20Europe)   | IMT UE to DTTB interference assessment based on real world examples     |
| [**[ 337 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0337)      | [Broadcast Networks Europe](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=Broadcast%20Networks%20Europe)   | MCL footprint     |
| [**[ 336 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0336)      | [SG 6 Rapp. on PLT Issues](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=SG%206%20Rapp.%20on%20PLT%20Issues)   | Report on recent developments concerning PLT and wired telecommunication systems     |
| [**[ 335 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0335)      | [Norddeutscher Rundfunk (NDR)](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=Norddeutscher%20Rundfunk%20(NDR)) , [Zweites Deutsches Fernsehen](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=Zweites%20Deutsches%20Fernsehen)  | Summation of the power of three LTE transmitters in a suburban region - A practical study     |
| [**[ 333 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0333)      | [United Kingdom of Great Britain and Northern Ireland](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=United%20Kingdom%20of%20Great%20Britain%20and%20Northern%20Ireland)   | Error extension mechanisms in DTT broadcast systems relevant to the study of interference using Monte Carlo simulations     |
| [**[ 331 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0331)      | [United Kingdom of Great Britain and Northern Ireland](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=United%20Kingdom%20of%20Great%20Britain%20and%20Northern%20Ireland)   | Proposed liaison statement to JTG 4-5-6-7 from WP 6A - User requirements for wireless microphones in Region 1     |
| [**[ 329 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0329)      | [Turkey](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=Turkey)   | Response to the Working Party 6A Questionnaire on spectrum requirements for terrestrial television broadcasting     |
| [**[ 325 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0325)      | [RG for WRC-15 related studies](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=RG%20for%20WRC-15%20related%20studies)   | Progress Report - Questionnaire on spectrum requirements for terrestrial television broadcasting in connection with WRC-15 agenda item 1.2     |
| [**[ 324 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0324)      | [RG for WRC-15 related studies](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=RG%20for%20WRC-15%20related%20studies)   | Third progress Report - Rapporteur Group to undertake WRC-15 related studies called for by CPM15-1     |
| [**[ 320 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0320)      | [C.B.S., Inc.](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=C.B.S.,%20Inc.)   | Draft revision of Report ITU-R BT.2247-2 - Field measurement and analysis of compatibility between DTTB and IMT     |
| [**[ 308 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0308)      | [Russian Federation](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=Russian%20Federation)   | Compatibility of mobile and broadcasting services in adjacent bands taking into account the outcome of wireless broadband equipment field test in terrestrial TV broadcasting frequency band     |
| [**[ 306 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0306)      | [Russian Federation](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=Russian%20Federation)   | Assessment of interference from mobile service networks base stations     |
| [**[ 305 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0305)      | [WP 5D](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=WP%205D)   | Liaison statement to Joint Task Group 4-5-6-7 (copy to all concerned Groups under WRC-15 agenda item 1.1 (Working Parties 4A, 4B, 4C, 5A, 5B, 5C, 6A, 7B, 7C, 7D, 3K, 3M, and Working Party 1A)) - Sharing parameters for WRC-15 agenda item 1.1     |
| [**[ 302 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0302)      | [JTG 4-5-6-7](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=JTG%204-5-6-7)   | Liaison statement to Working Party 6A - Updated information on SAB/SAP     |
| [**[ 298 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0298)      | [WPs 3K and 3M](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=WPs%203K%20and%203M)   | Reply liaison statement to Joint Task Group 4-5-6-7 (copy to Working Parties 6A and 5D for information)     |
| [**[ 291 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0291)      | [WP 7B](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=WP%207B)   | Liaison statement to Working Party 4A and the Special Committee - (Copy for information to Working Parties 5A and 6A) - WRC-15 agenda item 9.1 (9.1.8)     |
| [**[ 287 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0287)      | [JTG 4-5-6-7](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=JTG%204-5-6-7)   | Liaison statement to Working Parties 3K and 3M (copy to Working Parties 6A and 5D for information)     |
| [**[ 286 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0286)      | [JTG 4-5-6-7](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=JTG%204-5-6-7)   | Liaison statement to Working Party 5D (copy for information to WPs 1A and 6A) - Adjacent band compatibility between the IMT uplink and digital terrestrial television (DTT) broadcasting under WRC-15 agenda item 1.2     |
| [**[ 283 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0283)      | [WP 3K](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=WP%203K)   | Liaison statement to Working Party 6A (copy to Joint Task Group 4-5-6-7 for information) - Correlation of short-term interfering signals     |
| [**[ 282 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0282)      | [WPs 3K and 3M](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=WPs%203K%20and%203M)   | Liaison statement to Joint Task Group 4-5-6-7 (copy to Working Parties 6A, 5D and 5B for information) - Appropriate propagation information where a current Recommendation may not seem to be wholly applicable     |
| [**[ 271 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0271)      | [WP 5A](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C&source=WP%205A)   | Liaison statement to Joint Task Group 4-5-6-7 (copy for information to Working Parties 4A, 4B, 4C, 5B, 5C, 5D, 6A, 7B, 7C, 7D, 1A, 3K, 3M) - Reply liaison statement on spectrum requirements for terrestrial mobile broadband (excluding IMT) related to WRC-15 agenda item 1.1     |

### 3.3.2 Organisation of the meeting

Sub-Group 6A-3 developed the following drafting groups to deal with specific work streams at
the meeting:

|  |  |  |
| --- | --- | --- |
| Drafting Group | Topic | Assigned Documents |
| DG 6A-3/A  | Spectrum requirements for DTTB | 6A/264 Annex 10, 4-5-6-7/242 Annex 5, 6A/271, 325, 329, WP 6A Rapporteur Group Meeting Presentation re CIR 78 on SharePoint |
| DG 6A-3/B  | Sharing and Compatibility Studies | 6A/282, 283, 286, 287, 298, 305, 306, 308, 320, 333, 335, 337, 338, 339, 341, 342, 347, 348, 349 |
| DG 6A-3/C  | SAB/SAP/BAS characteristics | 6A/264 Annex 6, 6A/302, 331 |
| DG 6A-3/D  | Updates to Work Plan | 6A/264 Annex 19, 6A/291, 324 |

Sub-Group 6A-3 sought the expertise of the following delegates to Chair the Drafting Groups:

|  |  |  |
| --- | --- | --- |
| Drafting Group | Topic | Chairmen |
| DG 6A-3/A  | Spectrum requirements for DTTB | Mr Hemingway (BBC) |
| DG 6A-3/B  | Sharing and Compatibility Studies | Mr Sami (EBU) |
| DG 6A-3/C  | SAB/SAP/BAS characteristics | Mr Vieracker (NDR) |
| DG 6A-3/D  | Updates to Work Plan | Mr Barrett (Free TV) |

### 3.3.3 Treatment of Documents

Sub-Group 6A-3 noted the Scope which had continued since the last meeting as:

*Matters where sharing needs to be investigated between terrestrial multimedia, sound and television and broadcasting systems and other services/applications of other services as
Co-Primary services.*

#### 3.3.3.1 Drafting Group 6A-3/A (Spectrum requirements for DTTB)

DG 6A-3/A considered the following actions with respect to the attributed input contributions:

|  |  |
| --- | --- |
| **Document** | **Treatment / Output** |
| 6A/264 Annex 10 Preliminary draft new Report ITU-R BT.[DTTBSPECREQ] - Spectrum requirements for terrestrial television broadcasting in the frequency band 694-790 MHz in Region 1 and the Islamic Republic of Iran | This document was updated in this meeting, and an updated PDNR is passed to the SG. |
| 4-5-6-7/242 Annex 5 Working documents on items relating to the broadcasting service for WRC-15 agenda Items 1.1 and 1.2 | The results of the analysis done by the JTG was considered at this meeting. |
| 271 Liaison statement to Joint Task Group 4-5-6-7 (copy for information to Working Parties 4A, 4B, 4C, 5B, 5C, 5D, 6A, 7B, 7C, 7D, 1A, 3K, 3M) - Reply liaison statement on spectrum requirements for terrestrial mobile broadband (excluding IMT) related to WRC-15 agenda item 1.1 | Noted. |
| 325 Progress Report - Questionnaire on spectrum requirements for terrestrial television broadcastng in connection with WRC-15 agenda item 1.2  | The Report from the Rapporteur Group contained information about several documents which were used in the work of the DG. |
| 329 Response to the Working Party 6A Questionnaire on spectrum requirements for terrestrial television broadcasting     | The new response to the Questionnaire was considered in the analysis of responses carried out at meetings of the DG. |
| WP 6A Rapporteur Group Meeting Presentation re CIR 78 on SharePoint | The form of presentation shown here was adopted for use in the PDNR. |

The Drafting Group held 1 meeting to advance the work initiated by the input contributions.

#### 3.3.3.2 Drafting Group 6A-3/B (Sharing and Compatibility Studies)

DG 6A-3/B considered the following actions with respect to the attributed input contributions:

|  |  |
| --- | --- |
| **Document** | **Treatment / Output** |
| 282 Liaison statement to Joint Task Group 4-5-6-7 (copy to Working Parites 6A, 5D and 5B for information) - Appropriate propagation information where a current Recommendation may not seem to be wholly applicable     | Used in producing a draft revision to Report ITU-R BT.2265. |
| 283 Liaison statement to Working Party 6A (copy to Joint Task Group 4-5-6-7 for information) - Correlation of short-term interfering signals   | Used in producing a draft revision to Report ITU-R BT.2265. |
| 286 Liaison statement to Working Party 5D (copy for information to WPs 1A and 6A) - Adjacent band compatibility between the IMT uplink and digital terrestrial television (DTT) broadcasting under WRC-15 agenda item 1.2     | Noted under *Calculation methods and related parameters* |
| 287 Liaison statement to Working Parties 3K and 3M (copy to Working Parties 6A and 5D for information)   | Considered to be forwarded to next meeting for inclusion in Report ITU-R BT.2265 |
| 298 Reply liaison statement to Joint Task Group 4-5-6-7 (copy to Working Parties 6A and 5D for information)     | Considered to be forwarded to next meeting for inclusion in Report ITU-R BT.2265 |
| 305 Liaison statement to Joint Task Group 4-5-6-7 (copy to all concerned Groups under WRC-15 agenda item 1.1 (Working Parties 4A, 4B, 4C, 5A, 5B, 5C, 6A, 7B, 7C, 7D, 3K, 3M, and Working Party 1A)) - Sharing parameters for WRC-15 agenda item 1.1     | Noted  |
| 306 Assessment of interference from mobile service networks base stations     | Considered to be forwarded to next meeting for inclusion in Report ITU-R BT.2247 |
| 308 Compatibility of mobile and broadcasting services in adjacent bands taking into account the outcome of wireless broadband equipment field test in terrestrial TV broadcasting frequency band     | Not considered as it is fully considered in DG6A-1-3) |
| 320 Draft revision of Report ITU-R BT.2247-2 - Field measurement and analysis of compatibility between DTTB and IMT     | Considered to be forwarded to next meeting for inclusion in Report ITU-R BT.2247 |
| 333 Error extension mechanisms in DTT broadcast systems relevant to the study of interference using Monte Carlo simulations     | Not considered as it isfully considered in DG6A-1-3) |
| 335 Summation of the power of three LTE transmitters in a suburban region - A practical study     | Considered to be forwarded to next meeting for inclusion in Report ITU-R BT.2247 |
| 337\_Amd (on SharePoint) MCL footprint  | Considered to be forwarded to next meeting for inclusion in Report ITU-R BT.2247 |
| 338 Amd (on SharePoint) IMT UE to DTTB interference assessment based on real world examples     | Considered to be forwarded to next meeting for inclusion in Report ITU-R BT.2247 |
| 339 Amd (on SharePoint) Monte Carlo simulations: Requirement for information on changes of state in an IMT network     | Considered to be forwarded to next meeting for inclusion in Report ITU-R BT.2265 |
| 341 Description of time elements for consideration in IMT to DTTB compatibility calculations   | Considered to be forwarded to next meeting for inclusion in Report ITU-R BT.2265 |
| 342 Issues related to DTTB protection from IMT UE interference in the Joint Task Group 4-5-6-7 studies     | Considered to be forwarded to next meeting for inclusion in Report ITU-R BT.2265 |
| 347 Field Report on the applied methodology used by Germany to protect the broadcast service when implementing the IMT service in the 800 MHz band     | *Used in producing a Working document towards a PDN Report [[FIELD\_REPORTS\_IMT] draft* |
| 348 Information on applied principles to protect the broadcast service in neighbouring countries when introducing the IMT service in the 800 MHz band     | *Used in producing a Working document towards a PDN Report [[FIELD\_REPORTS\_IMT]*  |
| 349 General description of interference into a DTT receiver  | Not considered as it isfully considered in DG6A-1-3) |

The Drafting Group held 6 meetings to advance the work initiated by the input contributions.

#### 3.3.3.3 Drafting Group 6A-3/C (SAB/SAP/BAS characteristics)

DG 6A-3/C considered the following actions with respect to the attributed input contributions:

|  |  |
| --- | --- |
| **Document** | **Treatment / Output** |
| 6A/264 Annex 6 Preliminary draft revision of Recommendation ITU-R BT.1871 - User requirements for wireless microphones | Attached again to Chair’s Report and carried forward with a call for more contributions. |
| 302 Liaison statement to Working Party 6A - Updated information on SAB/SAP     | Noted |
| 331 Proposed liaison statement to JTG 4-5-6-7 from WP 6A - User requirements for wireless microphones in Region 1   | Noted, action not possible |

The Drafting Groups held 2 meetings to advance the work initiated by the input contributions.

#### 3.3.3.4 Drafting Group 6A-3/D (Updates to Work Plan)

DG 6A-3/D considered the following actions with respect to the attributed input contributions:

|  |  |
| --- | --- |
| **Document** | **Treatment / Output** |
| 6A/264(Annex 19) Updates to Work Plan for studies related to WRC-12 Resolutions and Recommendations | Revised and updated see Document 6A-3D/Temp 2 |
| 291 Liaison statement to Working Party 4A and the Special Committee - (Copy for information to Working Parties 5A and 6A) - WRC-15 agenda item 9.1 (9.1.8)     | Proposed responding liaison statement to Working Party 7Bsee Document 6A-3D/Temp 1 |
| 324 Third progress Report - Rapporteur Group to undertake WRC-15 related studies called for by CPM15-1     | Noted. |

The Drafting Group held 1 meeting to advance the work initiated by the input contributions.

### 3.3.4 Output Documents for 6A-3

Sub-Group 6A-3 held 4 meetings. All meetings were well attended by administrations from all regions and most sub regions.

Sub -Group 6A-3 produced 8 output documents as follows:

|  |  |
| --- | --- |
| [**[ 138 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-131112-TD-0138)      | [Draft] - Updates to work plan for studies within Working Party 6A and related to WRC-12 Resolutions and Recommendations     |
| [**[ 137 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-131112-TD-0137)      | Proposed draft liaison statement to WP 7B - Frequency bands used for nano-satellite and pico-satellite systems     |
| [**[ 136 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-131112-TD-0136)      | Working document towards a preliminary draft new Report [FIELD\_REPORTS\_IMT] - National field Reports on the introduction of IMT In the bands with co-primary allocation to the broadcasting and the mobile services     |
| [**[ 135 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-131112-TD-0135)      | Text for the Chairman's Report of WP 6A     |
| [**[ 134 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-131112-TD-0134)      | Preliminary draft revision to Report ITU-R BT.2265 - Guidelines for the assessment of interference into the broadcasting service     |
| [**[ 133 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-131112-TD-0133)      | Annex YY to Working Party 6A Chairman's Report - Preliminary draft revision of Recommendation ITU-R BT.1871 - User requirements for wireless microphones     |
| [**[ 132 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-131112-TD-0132)      | Preliminary draft new Report ITU-R BT.[DTTBSPECREQ] - Spectrum requirements for terrestrial television broadcasting in the frequency band 694-790 MHz in Region 1 and the Islamic Republic of Iran     |
| [**[ 131 ]**](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-131112-TD-0131)      | Draft liaison statement to JTG 4-5-6-7 on spectrum requirements for terrestrial television broadcasting in the frequency band 694-790 MHz in Region 1 and the Islamic Republic of Iran     |

The matters of significant interest were as follows:

a) Updates to ITU-R Reports within the purview of Working Party 6A (refer 6A/TEMP/135)

Working Party 6A received input contributions related to the subjects covered by the following ITU-R Reports:

– Report ITU-R BT.2247 (06/2013) “Field measurement and analysis of compatibility between DTTB and IMT”;

– Report ITU-R BT.2265 (11/2012) “Guidelines for the assessment of interference into the broadcasting service”.

Some of the contributions proposed explicitly to revise one or the other of the reports, however, it was noted that these contributions have been submitted or refer to contributions submitted to the JTG4-5-6-7 and were still under consideration in this group at the date of this WP 6A meeting in November 2013.

It was recognized that the input contributions listed below may provide useful information for future revision of the two ITU-R Reports above, but they should be considered taking into account the outcome of the Joint Task Group 4-5-6-7 work. They are therefore forwarded to the next WP 6A meeting for possible consideration.

**For Report ITU-R BT.2247:** [6A/306](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0306) (Russian Federation), [6A/320](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0320) (CBS), [6A/335](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0335) (NDR/ZDF), [6A/337 Amended](https://extranet.itu.int/rsg-meetings/sg6/wp6a/Share/SWG%206A-3%20-%20Sharing/DG%206A3%20-%20B%20%28Sharing%20and%20Compatibility%29/R12-WP6A-C-0337%21%21MSW-E_Proposed_Rev1.docx) (BNE), [6A/338 Amended](https://extranet.itu.int/rsg-meetings/sg6/wp6a/Share/SWG%206A-3%20-%20Sharing/DG%206A3%20-%20B%20%28Sharing%20and%20Compatibility%29/R12-WP6A-C-0338%21%21MSW-E_Proposed_Rev1.docx) (BNE)

**For Report ITU-R BT.2265:** [287(JTG4-5-6-7),](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-JTG4567-C-0287) [298(3K&3M)](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-JTG4567-C-0289)**,** [6A/339 Amended](https://extranet.itu.int/rsg-meetings/sg6/wp6a/Share/SWG%206A-3%20-%20Sharing/DG%206A3%20-%20B%20%28Sharing%20and%20Compatibility%29/R12-WP6A-C-0339%21%21MSW-E_Proposed_Rev1.docx) (BNE), [6A/341](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0341)(EBU), [6A/342](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP6A-C-0342)(EBU)

b) Response to the Joint Task Group 4-5-6-7 (refer 6A/TEMP/131)

As reported to the WP 6A meeting in Document [6A/324](http://www.itu.int/md/R12-WP6A-C-0324/en) ***Third progress Report - Rapporteur Group to undertake WRC-15 related studies called for by CPM15-1* and more specifically in Document** [6A/325](http://www.itu.int/md/R12-WP6A-C-0325/en) ***Progress Report - Questionnaire on spectrum requirements for terrestrial television broadcasting in connection with WRC-15 agenda item 1.2,* on 8th July 2013 the WP 6A Rapporteur Group on WRC-15 Agenda Items was advised that** additional responses had been received **by the BR to the Questionnaire on Spectrum Requirements for Terrestrial Television Broadcasting in connection with WRC-15 agenda item 1.2 - CIR78 -** <http://www.itu.int/md/R00-SG06-CIR-0078/en>

The BR had forwarded these to the Rapporteur Group Chairman for posting on the SharePoint and the BR would also send these to the JTG 4-5-6-7 in an information note related to the WP 6A Liaison Statement that refers to this matter, to be taken into account at the next JTG 4-5-6-7 meeting.

The Joint Task Group received Document [4-5-6-7/221](http://www.itu.int/md/R12-JTG4567-C-0221/en) on 15 July 2013 which contained a response representing 14 Administrations.

On 21st July 2013 an email was received from members of the Rapporteur Group titled “Submission to the Chair of the Rapporteur Group rwp6A-5b “Studies related to WRC-15 agenda item 1.2”.
It provided an updated statistical analysis of the Broadcasting spectrum requirements by including the new replies received since the last WP 6A meeting in April. The result of this update refers to the WP 6A LS sent to the JTG4-5-6-7 (Doc. [4-5-6-7/125](http://www.itu.int/md/R12-JTG4567-C-0125/en)) and consists of:

1 a covering page summarizing the main changes to the WP 6A LS due to the new responses;

2 a revised version of the Annex to the WP 6A LS, showing the changes due to the new responses;

3 a new detailed Table in the Appendix, including the new responses (without track-changes, for readability).

On 25th July an email was sent from the Chair of the Rapporteur Group titled “Request to the
WP 6A Rapporteur Group from JTG 4-5-6-7 - proposed updates to Doc. 4-5-6-7/125 arising from additional responses from the ATU region”. Additional information was provided from the ATU from the recent ATU meeting. As a result of the receipt of the additional responses received since the last WP 6A meeting to LCCE/78 the BR provided an input to the JTG4-5-6-7 in
Document 4-5-6-7/186**,** aninformation note related to Document 4-5-67/125. At the meeting of
the JTG on that date ATU provided a proposed update to Document 4-5-6-7/125 and it is attached. In addition the RG was asked to provide any additional information from administrations to
the following paragraph in footnote 6:

*The Administrations which did not provide answer to this question or provided an unclear answer are Cyprus, Slovenia, Netherlands, Luxembourg, France, United Kingdom, Spain, Finland, Malta, Vatican City, Ireland, Sweden, Switzerland, Bulgaria (Republic of), Moldova, Israel (State of), Bahrain (Kingdom of) and Lebanon.*

RG members were asked to provide any comments by CET 1600hrs Thursday 25 July 2013 to assist the JTG in its deliberations.

The results of the updates to Documents 4-5-6-7/125 and 4-5-6-7/186 as presented to the JTG can be found in Annex 1 to Attachment 3 of Annex 5 of 4-5-6-7/242 in which the JTG 4-5-6-7 updated the WP 6A summary of responses to include all 96 received by the time of the 3rd meeting of the JTG (85 Administrations and 11 Sector Members).

On 28th July the Chair of the Rapporteur Group sent individual emails to the following administrations following up on request to the WP 6A Rapporteur Group from JTG 4-5-6-7
re proposed updates to Document 4-5-6-7/125 – Slovenia, Netherlands, Luxembourg, France, United Kingdom, Malta, Vatican City, Ireland, Sweden, Switzerland, Bulgaria (Republic of), Moldova, Israel (State of) and Bahrain (Kingdom of). It was pointed out to these administrations
the WP 6A Rapporteur Group was asked additional information from administrations to their responses to the following:

# *8 Required amount of spectrum in the band 470-862 MHz for DTT in the future*

*The required amount of spectrum in the band 470-862 MHz in the future is divided into ranges, as shown in Table 8. The figure 224 MHz corresponds to the amount of spectrum in the band
470-694 MHz.*

Considering the responses which have been received since the April 2013 meeting of Working Party 6A, it was proposed that the Rapporteur Group present a Report to the November meeting
of Working Party 6A on the updates which have been undertaken in the inter sessional period which includes [Annex 1 to Attachment 3 of Annex 5 of 4-5-6-7/242.](http://www.itu.int/md/R12-JTG4567-C-0242/en)

A meeting of the Rapporteur Group was held the afternoon before the meeting of Working Party 6A on 11 November 2013.

At the WP 6A meeting an update to the Report was developed as found in [6A/TEMP/132](http://www.itu.int/md/R12-WP6A-131112-TD-0132/en) and sent
a liaison statement as found in [6A/TEMP/131](http://www.itu.int/md/R12-WP6A-131112-TD-0131/en) to the Joint Task Group.

**3.3.5 Acknowledgements arising from the work of Sub-Group 6A-3**

Sub-Group 6A-3 acknowledged the input contributions from administrations to this meeting,
the support of delegates within its activities and the support of the BR staff toward completing its activities and actions at this meeting.

A call is made for contributions found in the updated Work Plan as found in [6A/TEMP/138](http://www.itu.int/md/R12-WP6A-131112-TD-0138/en) specifically:

– development of a draft new Report on SAB/SAP applications;

– continue work on the spectrum requirements draft Report, with a view to having it fully signed off by the March 2014 meeting;

– revision to Recommendation ITU-R BT.1871 to be developed in WP 6A, with a view to having it fully signed off by the March 2014 meeting;

– a draft Report on ACS methodology for broadcasting, gathering information for all Broadcasting Service Applications to be developed in WP 6A;

– processing of further replies in response to Circular Letter 6/LCCE/78.

## 3.4 Sub-Working Group 6A-4 (Other matters)

Sub-Group 6A-4 considered the 11 input contributions allocated (6A/264(Annex 16), 288, 292, 293, 294, 297, 301, 318, 319, 346, 353). The work focused on three subject areas including the status of texts, audiovisual media accessibility and emergency broadcasting.

The group considered the Status of Texts ([6A/297](https://webmail.fcc.gov/owa/redir.aspx?C=bf652d8877bb45b391b5e390c51f5ea9&URL=http%3a%2f%2fwww.itu.int%2fmd%2fR12-WP6A-C-0297%2fen)) and noted a contribution by Italy/Vatican City State ([6A/288](https://webmail.fcc.gov/owa/redir.aspx?C=bf652d8877bb45b391b5e390c51f5ea9&URL=http%3a%2f%2fwww.itu.int%2fmd%2fR12-WP6A-C-0288%2fen)) and requests that members of the Working Party should initiate a review of existing handbooks that may have become outdated.

The Working Party received two input contributions dealing with the creation of an intersector Rapporteur Group on Audiovisual Media Accessibility ([6A/318](https://webmail.fcc.gov/owa/redir.aspx?C=bf652d8877bb45b391b5e390c51f5ea9&URL=http%3a%2f%2fwww.itu.int%2fmd%2fR12-WP6A-C-0318%2fen) (ZDF) and [6A/353](https://webmail.fcc.gov/owa/redir.aspx?C=bf652d8877bb45b391b5e390c51f5ea9&URL=http%3a%2f%2fwww.itu.int%2fmd%2fR12-WP6A-C-0353%2fen)
(ITU-T SG 16)). We propose that Working Party 6A endorse the establishment of this group and send a liaison statement via Study Group 6.

On the subject of the importance of terrestrial broadcasting in providing emergency information to the public, the Working Party received 7 input contributions. The Sub-Group noted contributions [6A/292](https://webmail.fcc.gov/owa/redir.aspx?C=bf652d8877bb45b391b5e390c51f5ea9&URL=http%3a%2f%2fwww.itu.int%2fmd%2fR12-WP6A-C-0292%2fen) (ITU-D SG2), [6A/293](https://webmail.fcc.gov/owa/redir.aspx?C=bf652d8877bb45b391b5e390c51f5ea9&URL=http%3a%2f%2fwww.itu.int%2fmd%2fR12-WP6A-C-0293%2fen) (HFCC) and [6A/346](https://webmail.fcc.gov/owa/redir.aspx?C=bf652d8877bb45b391b5e390c51f5ea9&URL=http%3a%2f%2fwww.itu.int%2fmd%2fR12-WP6A-C-0346%2fen) (Lebanon). Based on contributions [6A/294](https://webmail.fcc.gov/owa/redir.aspx?C=bf652d8877bb45b391b5e390c51f5ea9&URL=http%3a%2f%2fwww.itu.int%2fmd%2fR12-WP6A-C-0294%2fen) (HFCC) and [6A/319](https://webmail.fcc.gov/owa/redir.aspx?C=bf652d8877bb45b391b5e390c51f5ea9&URL=http%3a%2f%2fwww.itu.int%2fmd%2fR12-WP6A-C-0319%2fen) (Italy/Vatican City State) concerning the HFCC project on International Radio for Disaster Relief (IRDR), it was decided to send a liaison statement to the Director of the Radiocommunication Bureau and the RAG notifying them of work underway in Working Party 6A and this project. [6A/TEMP/117] Based on the extensive work by the co-Rapporteurs, ([6A/301](https://webmail.fcc.gov/owa/redir.aspx?C=bf652d8877bb45b391b5e390c51f5ea9&URL=http%3a%2f%2fwww.itu.int%2fmd%2fR12-WP6A-C-0301%2fen))
we produced a Preliminary Draft new Report ITU-R BT.[EMBC] “The importance of terrestrial broadcasting in providing emergency information to the public.” [6A/TEMP/116]. Within the meeting, participants identified a few topics that could help in the development of the final Report including the consideration of extreme space weather and its effects on the ability to disseminate information in an emergency situation. In order to advance this work, Working Party 6A decided to continue the term of the existing Rapporteurs with the existing terms of reference ([6A/264](https://webmail.fcc.gov/owa/redir.aspx?C=bf652d8877bb45b391b5e390c51f5ea9&URL=http%3a%2f%2fwww.itu.int%2fmd%2fR12-WP6A-C-0264%2fen)
(Annex 16)) and taking into account additional inputs from the meeting.

# 4 Acknowledgments

Many thanks are offered to all participants, and particularly the Sub-Group Chairmen, for the efficient and productive work accomplished during the meeting, as well as the cooperative spirit that resulted in constructive solutions to complex problems. Thanks are also expressed to the Chairman of Study Group 6 and the ITU-R Secretariat (N. Venkatesh, E. Mostyn-Jones and staff) for the effective and responsive assistance. Clearly, all the ones that I have mentioned are the primary reason for any and all success the Working Party has achieved. Without their competence and strong support, the results of the meeting would have been less than successful. Lastly, the Chairman and the entire Working Party acknowledge Mr Venkatesh’s departure from the ITU and express extreme appreciation for his assistance these past several years and wish him and his family all the best in the years to come.

# 5 List of Annexes

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| 1 | List of input documents | 6A/264 – 6A/359 |
| 2 | Preliminary draft revision of Recommendation ITU-R BT.1206-1 – Spectrum limit masks for digital terrestrial television broadcasting  | Temp/124 |
| 3 | Preliminary draft revision of Recommendation ITU-R BT.1306-6 - Error correction, data framing, modulation and emission methods for digital terrestrial television broadcasting | Temp/122 |
| 4 | Preliminary draft revision of Recommendation ITU-R BT.1871 - User requirements for wireless microphones | Temp/133 |
| 5 | Preliminary draft revision of Recommendation ITU-R BT.[ETMMPLAN] – Planning criteria for terrestrial multimedia broadcasting for mobile reception using handheld receivers in VHF/UHF bands | Temp/139 |
| 6 | Preliminary draft new Report ITU-R BT.[EMBC] – The importance of terrestrial broadcasting in providing emergency information to the public | Temp/116 |
| 7 | Preliminary draft new Report ITU-R BT.[ACTIVE DEVICE MODEL] - Reference model to be used for the assessment of interference into the television broadcasting service in order to take into account non-linearity in the television radio frequency receiving system | TEMP/146 |
| 8 | Preliminary draft new Report ITU-R BT.[DTTBSPECREQ] - Spectrum requirements for terrestrial television broadcasting in the frequency band 694-790 MHz in Region 1 and Iran | Temp/132 |
| 9 | Preliminary draft revision of Report ITU-R BT.2265 – Guidelines for the assessment of interference into the broadcasting service | Temp/134 |
| 10 | Working document towards a preliminary draft new Report ITU-R BT.[R-WBR] – Main functionalities of consumer receivers for worldwide broadcasting roaming | Temp/123 |
| 11 | Working document towards a preliminary draft new Report ITU-R BT.[INTERFERENCEDESCRIPTION] - General description of interference into a DTT receiver | Temp/129 |
| 12 | Working document toward preliminary draft new Report ITU-R BT.[FIELD\_REPORTS\_IMT] – National field reports on the introduction of IMT with co-primary allocation to the broadcasting and mobile services | Temp/136 |
| 13 | Working document toward a preliminary draft new Report ITU-R BS.[DSB-TRANSITION] - Implementation considerations for the transition to digital terrestrial sound and multimedia broadcasting | Temp/142 |
| 14 | Working document toward a preliminary draft new Report ITU-R BS.[CRS\_BS\_BANDS] - Compatibility issues and national approaches related to introduction of cognitive radio systems within frequency bands used by terrestrial broadcasting services | Temp/151 |
| 15 | Working document towards a preliminary draft revision of Report ITU-R BT.2215 – measurements of protection ratios and overload thresholds for broadcast TV receivers | Temp/130 |
| 16 | Draft liaison statement to Study Group 1 and Working Party 1A concerning Recommendation ITU-R SM.1541-5 (copy to WPs 4A, 4B, 4C, 5A, 5B, 5C, 5D, 7B, 7C, 7D, 3K, 3M and JTG 4-5-6-7) | Temp/150 |
| 17 | Establishment of a Rapporteur Group on “Design and implementation of single frequency networks (SFN)” | Temp/125 |
| 18 | Updates to work plan for studies within Working Party 6A and related to WRC-12 Resolutions and Recommendations | Temp/138 |
| 19 | List of liaison statements | Temps/115, 117, 118, 128, 131, 137, 144, 145, 147, 148 |
| 20 | List of output documents | Temps/115- 151 |

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