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| **Radiocommunication Study Groups** |  |
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| Source: Documents 5A/TEMP/93, 94(Rev.1), 98, 99, 100 | **Annex 3 toDocument 5A/198-E** |
| **20 November 2012** |
| **English only** |
| Annex 3 to Working Party 5A Chairman’s Report |
| consolidation of reports from the working groupsof working party 5a |

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NOTE – Throughout this Annex reference is made to the temporary documents (5A/TEMP/…) produced by the Working Groups. Since these documents are not kept, please refer to [Annex 23](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0198!N23!MSW-E) of [Doc. 5A/198](http://www.itu.int/md/R12-WP5A-C-0198/en) to find the final disposition of these documents by Working Party 5A.

# 1 Working Group 5A-1 – Amateur and amateur-satellite services (Chairman: Mr Brennan Price, USA)

## 1.1 Executive summary

Working Group 5A-1 continued work on WRC-15 Agenda item 1.4. The work plan and milestones for the Agenda item were not modified. A preliminary draft new Report on amateur service characteristics was drafted, and work was progressed on working documents toward preliminary draft new Reports on compatibility and spectrum occupancy. Elements of CPM text were considered.

Review of ITU-R documentation relevant to the amateur and amateur-satellite services continued. One preliminary draft new Recommendation was recommended for adoption as a draft new Recommendation, and revisions to the Handbook on the amateur and amateur-satellite services were considered and carried forward for future work.

## **1.2 General**

Working Group 5A-1 was assigned nine input contributions, held six meetings and completed its work.

## 1.3 WRC-15 Agenda item 1.4

Document [5A/77](http://www.itu.int/md/R12-WP5A-C-0077/en) (WP 5C) was considered, but not disposed of, during the May 2012 meeting of Working Party 5A. As another Document [5A/155](http://www.itu.int/md/R12-WP5A-C-0155/en) accounted for the content of the liaison statement from Working Party 5C, Document 5A/77 was noted.

Document [5A/141](http://www.itu.int/md/R12-WP5A-C-0141/en) (Canada) and the relevant part of Document [5A/43](http://www.itu.int/md/R12-WP5A-C-0043/en) (Russian Federation) were considered and incorporated into a working document toward draft CPM text for WRC-15 Agenda item 1.4. The working document was forwarded as Document 5A/TEMP/65 to WP 5A for attachment to the Chairman’s Report.

Documents [5A/142](http://www.itu.int/md/R12-WP5A-C-0142/en) (Canada), [5A/149](http://www.itu.int/md/R12-WP5A-C-0149/en) (United States), and [5A/162](http://www.itu.int/md/R12-WP5A-C-0162/en) (IARU) were considered and incorporated into a preliminary draft new Report ITU-R M.[5 MHz CHAR], “Characteristics of amateur radio stations in the range 5 250-5 450 kHz for sharing studies”. The working document was forwarded as Document 5A/TEMP/67 to WP 5A for attachment to the Chairman’s Report.

Document [5A/144](http://www.itu.int/md/R12-WP5A-C-0144/en) (Canada) was considered and incorporated into a working document toward a preliminary draft new Report ITU-R M.[HF-SPECTRAL OCCUPANCY], “Spectral occupancy of fixed and mobile allocations within the band 5 250-5 450 kHz”. The working document was forwarded as Document 5A/TEMP/89 to WP 5A for attachment to the Chairman’s Report.

Document [5A/155](http://www.itu.int/md/R12-WP5A-C-0155/en) (Russian Federation) was considered and incorporated into a working document toward a preliminary draft new Report ITU-R M.[5 MHz COMPAT], “Compatibility analysis of possible amateur systems with fixed, land mobile, radiolocation and maritime mobile services in the frequency band 5 250-5 450 kHz”. The working document was forwarded as Document 5A/TEMP/69 to WP 5A for attachment to the Chairman’s Report.

Document [5A/156](http://www.itu.int/md/R12-WP5A-C-0156/en) (Russian Federation) was considered and incorporated into a liaison statement to Working Party 5C, which was forwarded to the second Plenary session of WP 5A as Document 5A/TEMP/66 for approval.

In accordance with the work plan for WRC-15 Agenda item 1.4, a liaison statement to Working Parties 5B and 5C, copy to Working Party 3L, was drafted to apprise these interested Working Parties of the progress of our studies. This liaison statement was sent as Document 5A/TEMP/88 for approval at the closing Plenary session of WP 5A.

## 1.4 Review of ITU-R documentation relevant to the amateur and amateur-satellite services

Work continued on a review of ITU-R and ITU-D Questions, Recommendations and Reports relevant to the amateur and amateur-satellite services.

Document [5A/157](http://www.itu.int/md/R12-WP5A-C-0157/en) (Russian Federation), containing a proposal for further revisions to the ITU Handbook on the amateur and amateur-satellite services, was considered. The revisions were documented and forwarded as Document 5A/TEMP/90 to WP 5A for attachment to the Chairman’s Report.

No contributions were received relevant to the preliminary draft new Recommendation ITU‑R M.[VARICODE] ([Annex 10 to Doc. 5A/79](http://www.itu.int/md/choice_md.asp?id=R12-WP5A-C-0079!N10!MSW-E&lang=en&type=sitems)). The text of the preliminary draft new Recommendation ITU-R M.[VARICODE] was considered and forwarded as Document 5A/TEMP/53 to WP 5A, with the suggestion to approve as a draft new Recommendation.

## 1.5 Other contributions

Working Group 5A-1 worked with the ITS Sub-Group within Working Group 5A-5 to consider Document [5A/163](http://www.itu.int/md/R12-WP5A-C-0163/en) (IARU), a draft liaison statement to WP 5B regarding amateur and amateur-satellite service characteristics at 77.5-78 GHz. The Chairman thanks the ITS Sub-Group Chairman, Mr Sam Oyama, for his collaboration.

Working Group 5A-1 reviewed other inputs to the meeting, and provided elements of temporary Documents 5A/TEMP/87 (liaison statement to relevant Working Parties on wired communications including PLT) and 5A/TEMP/85 (liaison statement to Working Party 7C – Characteristics for systems operating in the mobile service in the frequency bands 8 700-8 750 MHz and
10.0-10.45 GHz and systems operating in the amateur and amateur-satellite services in the frequency band 10.0-10.5 GHz).

## 1.6 Objectives for the next meeting

– Progress the work on WRC-15 Agenda item 1.4, in accordance with the adopted work plan and milestones:

i) Complete amateur service technical and operational characteristics draft new Report and send to SG 5.

ii) Continue sharing studies, taking into account feedback from contributing groups.

iii) Update preliminary draft new Report(s) for sharing studies as appropriate.

iv) Develop CPM text for Section 4, considering and incorporating from contributing groups.

v) Transmit updated preliminary draft new Report(s) on sharing studies to contributing groups as appropriate for review.

vi) Transmit draft CPM text to contributing groups for review.

– Continue to review and update as necessary ITU-R Recommendations, Reports and Handbooks relevant to the amateur and amateur-satellite services.

– Review ITU-D Questions, Recommendations, Reports and Handbooks relevant to the amateur and amateur-satellite services and, if necessary, develop liaison statements to responsible ITU-D Study Groups.

# **2** **Working Group 5A-2 – Systems and standards (Chairman: Mr Lang Baozhen, China)**

Working Group 5A-2 met five times at the tenth meeting of WP 5A in Geneva with approximately 30 delegates in attendance. WG 5A-2 received the 19 documents remanded by the WP 5A plenary as follows:

|  |  |
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|  | **Documents** |
| **2.1 Wireless home networks** | [90](http://www.itu.int/md/R12-WP5A-C-0090) (WP 1B); [95](http://www.itu.int/md/R12-WP5A-C-0095/en) (WP 5D) |
| **2.2 Update of Rec. ITU-R M.1801** | [79](http://www.itu.int/md/R12-WP5A-C-0079) [Annex 15](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0079!N15!MSW-E) (WP 5A); [100](http://www.itu.int/md/R12-WP5A-C-0100/en) (ETSI); [107](http://www.itu.int/md/R12-WP5A-C-0107/en)-1801 aspects (3GPP TSG RAN); [127](http://www.itu.int/md/R12-WP5A-C-0127) (WP 5D); [138](http://www.itu.int/md/R12-WP5A-C-0138) (3GPP2); [158](http://www.itu.int/md/R12-WP5A-C-0158/en)-Att1 (XGP Forum);[173](http://www.itu.int/md/R12-WP5A-C-0173) (IEEE) |
| **2.3 ATG** | [79](http://www.itu.int/md/R12-WP5A-C-0079) [Annex 14](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0079!N14!MSW-E) (WP 5A); [139](http://www.itu.int/md/R12-WP5A-C-0139) (3GPP2); [147](http://www.itu.int/md/R12-WP5A-C-0147/en) (USA); [172](http://www.itu.int/md/R12-WP5A-C-0172) (China); [180](http://www.itu.int/md/R12-WP5A-C-0180) (ETSI TC ERM) |
| **2.4 Update of Rec. ITU-R M.1450** | [174](http://www.itu.int/md/R12-WP5A-C-0174) (IEEE) |
| **2.5 Update of Rec. ITU-R F.1763** | [165](http://www.itu.int/md/R12-WP5A-C-0165) (Japan) |
| **2.6 ANTS** | [120](http://www.itu.int/md/R12-WP5A-C-0120) (ITU-T SG 15 ) |
| **2.7 Hearing aids** | [116](http://www.itu.int/md/R12-WP5A-C-0116/en), [160](http://www.itu.int/md/R12-WP5A-C-0160/en) (ITU-T FG AVA) |

Working Group 5A-2 set up three drafting groups to deal with revision of Recommendation ITU‑R M.1801, Air-to-Ground (ATG) communication systems with aircraft, and hearing aids issue.

1) DG 5A2-1 M.1801 Dr Gabrielle Owen

2) DG 5A2-2 ATG Mr GuangHan Xu

3) DG 5A2-3 Hearing aids Dr Neviana Nikoloski.

## 2.1 Wireless home networks

Regarding wireless home networks, two liaison statements were received, i.e. Documents 5A/[90](http://www.itu.int/md/R12-WP5A-C-0090) (WP 1B) and 5A/[95](http://www.itu.int/md/R12-WP5A-C-0095/en) (WP 5D).

These two liaison statements are reply liaison statements to ITU-T Study Group 15 regarding narrow-band wireless home networking, both of these two liaison statements were just copied to WP 5A for information. WG 5A-2 took noted of these two documents.

## 2.2 Update of Recommendation ITU-R M.1801

At its November 2012 meeting, Working Party 5A received a number of contributions proposing revisions to Recommendation ITU-R M.1801-1, “Radio interface standards for broadband wireless access systems, including mobile and nomadic applications, in the mobile service operating below 6 GHz”.

Drafting Group 5A-2-1 considered all input documents on revision of Recommendation ITU‑R M.1801-1. Based on these contributions, DG 5A-2-1 prepared a working document towards a revision of Recommendation ITU-R M.1801-1.

Drafting Group 5A-2-1 discussed whether it was possible to complete the revision of Recommendation ITU-R M.1801-1 during this meeting of WP 5A. It was noted that the working document towards a revision of Recommendation ITU-R M.1801-1 contained information on the draft standard IEEE P802.11ac.

Drafting Group 5A-2-1 prepared a draft liaison statement to external organizations and ITU-R WP 5D on the revision of Recommendation ITU-R M.1801-1. Since the work on the revision of Recommendation ITU-R M.1801-1 was completed, it was not necessary to send this draft liaison statement and Doc. 5A/TEMP/64 was withdrawn.

At the WG 5A-2 level, the working document towards a revision of Recommendation ITU‑R M.1801-1 **(**Doc. 5A/TEMP/63(Rev.2)) was approved with the removal of information on the draft standard IEEE P802.11ac.

## 2.3 ATG

Drafting Group 5A-2-2 reviewed the contributions from 3GPP2, USA, China, and ETSI on the ATG report and then reviewed the modified working document of the ATG report with the suggested changes from all the contributions incorporated. The meeting was very productive and the following modifications to the working document were made.

– We decided to merge 4 annexes describing systems from USA, Europe, China and Canada to three annexes for Region 1, Region 2, and Region 3 defined by ITU. The materials from USA and Canada are now listed in the same annex for Region 2.

– Since the materials for the last annex about radio propagation effects for air-to-ground system had been written more than 20 years ago, we decided to remove them. Following the recommendation from Canada before the meeting, we decided to cite a more recent and relevant Recommendation ITU-R P.528-3, which was published in February 2012.

– We also removed some irrelevant sentences and made some editorial changes in the working document.

The working document of the ATG (Doc. 5A/TEMP/70) will be carried forward to the next WP 5A meeting and a liaison statement (Doc. 5A/TEMP/81) was developed to invite external organizations to make relevant contributions to the May 2013 meeting.

## 2.4 Update of Recommendation ITU-R M.1450

Working Group 5A-2 received a contribution from IEEE which proposes to start a revision work of Recommendation ITU-R M.1450.

Working Group 5A-2 drafted a working document towards a revision of Recommendation ITU‑R M.1450 (Doc. 5A/TEMP/77) which will be carried forward to the next WP 5A meeting for further consideration. A liaison statement (Doc. 5A/TEMP/75) was developed to invite external organizations to provide updated and/or new material for the revision of Recommendation ITU‑R M.1450.

## 2.5 Update of Recommendation ITU-R F.1763

Working Group 5A-2 received a contribution from Japan which proposes to start a revision work of Recommendation ITU-R F.1763.

Based on the Japanese contribution, a liaison statement (Doc. 5A/TEMP/61) was developed to invite external organizations to provide updated and/or new material for the revision of Recommendation ITU-R F.1763.

## 2.6 ANTS

Working Group 5A-2 received a liaison statement from ITU-T Study Group 15 on the updated documents ANT Standards Overview (Issue 20, September 2012), containing ANT scenarios and a list of standards and Recommendations from ITU and various standardization bodies, as well as the ANT work plan (Issue 22, February 2012), providing an overview of various standardization groups and ongoing ANT activities.

A liaison statement (Doc. 5A/TEMP/80) was developed. In the liaison statement, WP 5A points out that the work on “Quality of service requirements and objectives for wireless access systems” in ITU-R Working Party 5A is currently stopped. WP 5A also provides the status information on Recommendation ITU-R [M.1801](http://www.itu.int/rec/R-REC-M.1801/en), Recommendations ITU-R [M.1450](http://www.itu.int/rec/R-REC-M.1450/en) and ITU-R [F.1763](http://www.itu.int/rec/R-REC-F.1763/en) in the liaison statement.

## 2.7 Hearing aids

After considering the reply liaison statement from ITU-T FG-AVA during the opening plenary session of WG 5A-2, it was suggested to:

– update Recommendations ITU-R M.1076 and ITU-R M.778-2 in accordance with the technological progress in the area of wireless systems for hearing impaired users;

– send a LS from ITU-R WP 5A to ITU-R WP 5B for investigation of the suitability of newly proposed worldwide available radio frequency bands for wireless systems for hearing impaired.

In the process of revision of both Recommendations ITU-R M.1076 and ITU-R M.778-2, the drafting group has noted the outdated information in Recommendation ITU-R M.778-2 which is also present in Recommendation ITU-R M.1076. Therefore, the group decided to continue with the revision of Recommendation ITU-R M.1076 and consider at a later stage whether Recommendation ITU-R M.778-2 has to be revised accordingly or suppressed. A working document on the draft revision of Recommendation ITU-R M.1076 (Doc. 5A/TEMP/60) was developed.

Based on the proposal in the reply liaison statement from ITU-T FG-AVA to study the suitability of globally harmonized radio frequency bands for wireless systems for hearing impaired providing access to public services, the drafting group has prepared a draft LS (Doc. 5A/TEMP/62(Rev.2)) to ITU-R WP 5B because the suggested by ITU-T FG-AVA bands are in the responsibility of WP 5B. A set of technical parameters for a digital system which can be realized in the suggested by ITU-T FG-AVA bands was also included in the draft revision of Recommendation ITU-R M.1076 to provide a possibility to ITU-R WP 5B to initiate any necessary studies as appropriate.

During the discussion of the draft LS to ITU-R WP 5B it was noted that wireless systems for hearing impaired providing access to public services are considered as short-range devices and their operation in a radio frequency band does not need a mobile allocation. However, after considering the frequency ranges for SRDs recommended for global harmonization with Recommendation ITU‑R SM.1896 and as it was also mentioned in the reply from ITU-T FG-AVA, no new radio frequency bands, different from the ones proposed by ITU-T FG-AVA, have been identified at this

stage for possible further studies. Therefore, the drafting group is also proposing to send a copy of the LS to all other groups which received for information the LS from ITU-T FG-AVA as a status update on the activities on this issue.

## 2.8 Review of ITU-R texts

Working Group 5A-2 reviewed Section 1 of [Annex 1](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0079!N01!MSW-E) to [Document 5A/79](http://www.itu.int/md/R12-WP5A-C-0079/en) including the [Guide to the use of ITU-R texts related to the land mobile service](http://www.itu.int/oth/R0A06000001/en) and made some minor updates.

## 2.9 Status of work under Resolutions

In response to the request reflected in Document 5A/106 to provide a list of “Studies requested by the ITU-R Resolutions, foreseen dates and ITU-R deliverables in response to those Resolutions and to report accordingly”, WG 5A-2 reviewed its work since the previous RAG and offered the following report.

– Resolution ITU-R 60, “Reduction of energy consumption for environmental protection and mitigating climate change by use of ICT/radiocommunication technologies and systems”. WG 2 has incorporated new developments in technology that will result in reduced energy consumption into its Reports and Recommendations on land mobile systems and standards. There have been no outputs specifically devoted to this topic, as it is covered in the regular updating on the technical and operational characteristics of technologies under our purview.

– Resolution ITU-R 62, “Studies related to testing for conformance with ITU R Recommendations and interoperability of radiocommunication equipment and systems”. WG 2 has received no reports of difficulties related to conformance and interoperability from any administration.  Therefore, WG 2 has not seen the need to initiate studies on this topic.

## 2.10 Objectives for the next meeting

The objectives for the next meeting are to continue the work on WAS Study Questions on the basis of input contributions and, in particular, to continue the work on:

– development of PDN Report M.[LMS.ATG];

– development of a preliminary draft revision of Recommendation ITU-R M.1076;

– development of a preliminary draft revision of Recommendation ITU-R M.1450;

– development of a preliminary draft revision of Recommendation ITU-R F.1763.

## 2.11 Chairman’s closing remarks

Finally, the Chairman of WG 5A-2 wishes to thank all participants of WG 5A-2 for their contributions and cooperation and particularly thank the DG Chairmen Dr Gabrielle Owen,
Dr Neviana Nikoloski and Mr Guanghan Xu for their good and efficient work.

# 3 Working Group 5A-3 – Public protection and disaster relief (Chairman: Ms Amy Sanders, USA)

Working Group 3 met on six occasions and considered 11 input documents and five documents carried forward in the Chairman’s Report. The input documents were related to WRC-15 Agenda items 1.3 and revisions of documents under the purview of WG 3.

The disaster relief Rapporteur’s Report (Document [5A/181](http://www.itu.int/md/R12-WP5A-C-0181/en)) was presented at the WP 5A Plenary.

In addition, four documents were assigned to all Working Groups from the WP 5A Plenary and all WGs were tasked by the WP 5A Chairman to conduct a review of the relevant portions of the “Guide to the use of ITU-R texts related to the land mobile service” and the texts attributed to the group.

All documents were introduced at the Working Group level. One Drafting Group was established under the leadership of Mr Bharat Bhatia (India) to address the input contributions related to CPM text for WRC-15 Agenda item 1.3.

As outlined in Document [5A/79](http://www.itu.int/md/R12-WP5A-C-0079) Annex 3, WG 3’s objectives for this meeting were to continue development of the following, based on input contributions:

a) the revision of Report ITU-R M.2014;

b) the revision of Recommendation ITU R M.2009;

c) the revision of Recommendation ITU-R M.2015; and

d) the work on WRC-15 Agenda item 1.3, based on the work plan.

At the opening session of WG 3, China indicated that Document 5A/171, which provided input toward the development of “Report ITU-R M.[LMS.PPDR.UHF CHANNELS]”, could be set aside previous meeting had agreed to discontinue work on that document. As noted in the previous meeting report (Document [5A/79](http://www.itu.int/md/R12-WP5A-C-0079) Annex 3):

 “After due consideration of input contributions, the work necessitated under WRC-15 Agenda item 1.3, and discussion over several sessions, it was decided to discontinue development of the proposed preliminary draft new Report [LMS.PPDR.UHF CHANNELS] “Channelization scenarios for public protection and disaster relief operations in some parts of the UHF band in accordance with Resolution **646 (WRC-03)**” (Annex 6 to Document 5A/788 of the Study Period 2008-2012), as it was felt to be more appropriately handled within the relevant standards development organizations.”

a) Draft Revision of Report ITU-R M.2014-1, “Digital land mobile systems
for dispatch traffic”

The meeting considered Document [5A/79, Annex 16](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0079!N16!MSW-E), which contained the draft revision of Report ITU-R M.2014-1. There were no input contributions to this meeting. Based on the agreement at the previous meeting, WG 3 agreed to remove Section 1.2.1 regarding Project Mesa, as it was formally closed in December 2010 and maintenance of the current MESA standards in ETSI is now the responsibility of ETSI Technical Committee TETRA. A consequential change was made to remove a reference to Project MESA, and other editorial improvements were made. The revision was approved in WG 3 and in WP 5A Plenary and transmitted to SG 5 for consideration as Document [5/21](http://www.itu.int/md/R12-SG05-C-0021/en).

b) Update of working document toward a preliminary draft revision of Recommendation ITU-R M.2009, “Radio interface standards for use by public protection and disaster relief operations in some parts of the UHF band in
accordance with Resolution 646 (Rev.WRC-12)”

Four contributions to this meeting addressed the revision of Recommendation ITU-R M.2009 as contained in Document [5A/79, Annex 17](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0079!N17!MSW-E). The meeting agreed to incorporate relevant material from the contributions: 97 (ATIS); 108 (3GPP TSG RAN); 128 (WP 5D); 136 (APT).

In response to the contribution from APT, the meeting agreed to hold off on completion of the revision until anticipated material is received from APT. A liaison statement to this effect was developed and is contained in Document [5A/TEMP/52(Rev.1](http://backend4amaz0n.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP5A-121105-TD-0052))

The updated draft revision is contained in Document [5A/198](http://www.itu.int/md/R12-WP5A-C-0198/en), Annex 17.

c) Update of working document toward a preliminary draft revision of Recommendation ITU-R M.2015, “Frequency arrangements for public protection
and disaster relief radiocommunication systems in UHF bands in accordance
with Resolution 646 (Rev.WRC-12)”

One contribution from the APT (Document 5A/137) was received on the revision of Recommendation ITU-R M.2015. The APT indicated that it anticipated providing material relevant to the revision to the next meeting of WP 5A. In response to this liaison statement, the meeting agreed to hold off on completion of the revision until anticipated material is received from APT. The response on Recommendation ITU-R M.2015 was incorporated into the liaison statement to APT on Recommendation ITU-R M.2009 (Document [5A/TEMP/52(Rev.1](http://backend4amaz0n.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP5A-121105-TD-0052))).

The meeting agreed to carry forward the draft revision from the previous meeting as contained in Document [5A/79, Annex 18](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0079!N18!MSW-E).

d) Work on Agenda item 1.3

1) CPM text

The meeting received five contributions toward the development of CPM text for WRC-15 Agenda item 1.3 as contained in Document [5A/79, Annex 6](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0079!N06!MSW-E): 96 (WP 5D); 135 (APT); 143 (Canada); 94, 161 (Israel). During the introduction of documents, Israel indicated that Document 5A/94 was superseded by Document 5A/161; so, Document 5A/94 was not considered in the meeting.

The meeting agreed to consider the contributions toward CPM text in a drafting group under the leadership of Mr Bharat Bhatia (India). The Drafting Group met 3 times and developed revised text for the CPM. Square brackets remain in this working document toward preliminary draft CPM text (Document [5A/TEMP/79](http://backend4amaz0n.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP5A-121105-TD-0079)) to reflect the lack of agreement.

Discussions in the drafting group were contentious, in part, because there was disagreement about the process being followed. Some participants were concerned that text changes to Resolution **646** were being proposed without sufficient justification through the technical studies called for in Resolution **648 (WRC-12)**, which guides the work under this Agenda item.

When the drafting group reported to WG 3, the Chairman of WG 3 encouraged participants to focus future contributions on the development of revision to the relevant Recommendations and Reports as identified in the previous meeting report in [Appendix 1 of Document 5A/79 Annex 3](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0079!N03-R1!MSW-E). The Chairman noted that the findings in Report ITU-R M.2033 were an essential element of previous CPM text relating to PPDR, and the revision of this Report could play a similar role in CPM text for WRC-15Agenda item 1.3.

2) Relevant Recommendations and Reports

WG 3 reviewed [Appendix 1 of Document 5A/79, Annex 3](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0079!N03-R1!MSW-E), “Proposed course of action toward the review of Recommendations and Reports associated with work on WRC-15 Agenda item 1.3”. The meeting agreed to propose to the Chairman of WP 5A that the following documents be considered for suppression pending the approval of the revision of Report ITU-R M.2014:

– **Recommendation ITU-R M.1222**, “Transmission of data messages on shared private land mobile radio channels” (1997)

– **Report ITU-R M.741**, “Multi-channel land mobile systems for dispatch traffic (with or without PSTN interconnection)” (1990)

– **Report ITU-R M.901**, “Frequency assignment methods for trunked mobile radio systems” (1990).

The meeting agreed that the Recommendations and Reports contained in [Appendix 1](#app1) to this Annex could be relevant to the work under WRC-15Agenda item 1.3 and should be the focus of contributions to future meetings to provide the technical studies required under Resolution **648 (WRC-12)**.

3) Work plan

Following the work of the Drafting Group and the review of the relevant ITU-R documents, the meeting reconsidered its work plan for WRC-15 Agenda item 1.3 as contained in Document [5A/79, Annex 7](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0079!N07!MSW-E). The work plan was revised to reflect the focus on technical studies to support the development of CPM text.

The revised work plan is contained in Document [5A/TEMP/83](http://backend4amaz0n.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP5A-121105-TD-0083).

Other issues

Working Group 3 also considered Document 5A/106 from the Chairman of SG 5, which asked for a status update of work under the Resolutions assigned to WP 5A. The meeting agreed to report the following to the Chairman of WP 5A for inclusion in his Report to SG 5:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Resolution | Title | Status of studies | Dates | Expected Deliverables |
| Resolution 53 | The use of radiocommunications in disaster response and relief | Published requests for input to database of disaster management frequencies and reported progress on database in disaster relief Rapporteur Reports | *May 2012* | 5A/46 |
| *November 2012* | 5A/181 |
| *May 2013* | 5A/TBD |
| Resolution 55 | ITU studies of disaster prediction, detection, mitigation and relief | Update completed on digital land mobile systems for dispatch traffic | *November 2012* | Revision of Report ITU-R M.2014 |
| Update underway on radio interface standards for PPDR use in some parts of the UHF band  | *November 2013* | Revision of Recommendation ITU-R M.2009 |
| Update underway on frequency arrangements for PPDR in some parts of the UHF band | *November 2013* | Revision of Recommendation ITU-R M.2015 |

Working Group 3 followed the Chairman’s instructions to consider the Texts, the Guide, the structure of the work in WP 5A, and Vocabulary. WG 3 proposed appropriate revisions to the CPM text, but had no proposed changes to the other elements.

With regard to work at the eleventh meeting of WP 5A, the objectives for WG 3 will be to:

– initiate revision of Report ITU-R M.2033 and other Reports and Recommendations, as appropriate, based on input contributions;

– continue development of working document toward a preliminary draft revision of Recommendation ITU-R M.2009, based on input contributions; and

– continue development of the working document toward a preliminary draft revision of Recommendation ITU-R M.2015, based on input contributions.

Finally, the WG Chairman would like to thank Mr Bhatia for his leadership of the drafting group and all the participants of WG 3 for their contributions and cooperative approach to the discussions.

**Attachment:** [Appendix 1](#app1) – Proposed course of action toward the review of Recommendations and Reports associated with work on WRC-15 Agenda item 1.3.

# 4 Working Group 5A-4 – Interference and sharing (Chairman: Mr Michael Kraemer, Germany)

## **4.1 Executive summary**

A preliminary draft new Report “Guidance for the development of band plans with contiguous bandwidths for mobile broadband applications for use in spectrum planning” was finalised and proposed for submission to SG 5.

Work has continued on a revision of Report ITU-R M.2116-1 “Characteristics of broadband wireless access systems operating in the land mobile service for use in sharing studies”.

Work has been initiated on a preliminary draft new [Report/Recommendation] ITU‑R M.[MS 14.5-15.35 CHAR] on characteristics of and protection criteria for systems operating in the mobile service in the frequency range 14.5-15.35 GHz.

Work has been initiated to develop relevant input from WP 5A regarding the spectrum requirements for the work on WRC-15 Agenda item 1.1 in JTG 4-5-6-7.

A number of liaison statements were developed to JTG 4-5-6-7, WP 4A, WP 4C, WP 7B, WP 7C and WP 7D to provide relevant information for sharing studies related to WRC-15 Agenda items 1.1, 1.6, 1.9 (issue 1.9.1), 1.11, 1.12 and 9.1 (issue 9.1.1).

## 4.2 Introduction

Working Group 5A-4 met five times during the November 2012 meeting of WP 5A. WG 5A-4 considered 43 input contributions and developed 13 output documents.

## 4.3 Consideration of input documents

The following issues were considered based on input contributions as assigned to WG 5A-4 by the WP 5A opening plenary based on Document 5A/ADM/7 as well as late input contributions (liaison statements from WP 5B and the Chairman of SG 5) received during the course of the meeting.

### 4.3.1 WRC-15 Agenda item 1.6

Input documents: 5A/83 and 5A/112 (WP 4A); 5A/119 (WPs of SG7); 5A/146 (USA)

Output documents: 5A/TEMP/58(Rev.1) (Reply LS); 5A/TEMP/59 (working document)

Working Group 5A-4 took note of the requests for information from various Working Parties and the fact that such information is not currently available in published ITU-R deliverables. To address these requests a working document towards a preliminary draft new [Report/Recommendation] ITU-R M.[MS 14.5-15.35 CHAR] on characteristics of and protection criteria for systems operating in the mobile service in the frequency range 14.5-15.35 GHz was developed based on the proposal in Document 5A/146.

Additionally, a reply liaison statement to Working Parties 4A, 7B, 7C and 7D was developed to inform them about the start of this activity.

### 4.3.2 Impact from wired telecommunication (including PLT) on radiocommunication systems

Input document: 5A/84 (WP 1A)

Output document: 5A/TEMP/87(Rev.1) (Reply LS)

Based on the information about the current status of work on this topic from WP 1A as provided in Document 5A/84, WG 5A-4 developed a liaison statement back to WP 1A, 4C, 5D, 6A, 7C and 7D to provide some additional information. As discussed and agreed in the joint session of Working Parties 5A and 5C during this SG block meeting, this reply was developed as a joint liaison statement from Working Parties 5A, 5B and 5C as was already done from the November 2010 meeting (see Document 1A/324).

### 4.3.3 Database for the protection of radio services

Input document: 5A/85 (WP 1A)

Working Group 5A-4 took note of the information provided by WP 1A related to database and their cooperation with CISPR on this matter and did not see the need for further action at this point in time.

### 4.3.4 Propagation issues

Input documents: 5A/91(Rev.1) (WP 3M); 5A/189 (WP 3K via the Chairman of SG 5)

Working Group 5A-4 took note of the information provided by WPs 3K and 3M regarding various propagation issues and will take this information into account as appropriate in future sharing studies.

### 4.3.5 Work towards a PDN Report ITU-R M.[RDSS & MSS COORD]

Input document: 5A/104 (WP 4C)

Working Group 5A-4 took note of the information provided by WP 4C regarding the continuation of the former work towards a PDN Report ITU-R M.[MSS-RDSS-SHARE] with the new work towards a PDN Report ITU-R M.[RDSS & MSS COORD] and did not see the need for further action at this point in time.

### 4.3.6 Question ITU-R 212-4/5

Input document: 5A/123 (WP 7D)

Working Group 5A-4 took note of the information provided by WP 7D which may be relevant to the work in relation to Question ITU-R 212-4/5 and will take this information into account as appropriate in future sharing studies.

### 4.3.7 Applicability of Recommendation ITU-R F.1336 to bands below 1 GHz

Input document: 5A/129 (WP 5D)

Output document: 5A/TEMP/78 (Reply LS)

Working Group 5A-4 took note of the information provided by WP 5D on this topic, and, as decided during the joint session of WPs 5A and 5C, coordinated with WP 5C a joint liaison statement to WP 5D on this topic concurring with the views of WP 5D in Document 5A/129. Furthermore, participants of WG 5A-4 will contribute as appropriate to the revision of Recommendation ITU-R F.1336 which will be carried out in WP 5C.

### 4.3.8 Revision of Report ITU-R M.2116

Input documents: 5A/107 (3GPP TSG RAN); 5A/130 (WP 5D); 5A/158 (XGP Forum)

Output document: 5A/TEMP/72 (working document)

Working Group 5A-4 further developed the working document towards a revised Report ITU‑R M.2116 (Annex 20 of the Report from the last WP 5A meeting) based on the input contributions received.

### 4.3.9 BWA band planning

Input documents: 5A/145 (Canada, Mexico); 5A/151 (USA)

Output document: 5A/TEMP/76(Rev.1) (PDN Report)

The working document (Annex 19 of the Report from the last WP 5A meeting) was further developed based on proposals contained in Document 5A/19 in a Drafting Group chaired by Christine Hsu (Canada).

After intense discussions about the type of document (Recommendation/Report/Handbook) and the content of the document a compromise was reached and WG 5A-4 was able to present an agreed version of a preliminary draft new Report “Guidance for the development of band plans with contiguous bandwidths for mobile broadband applications for use in spectrum planning” to the WP 5A Plenary for approval and submission to SG 5.

### 4.3.10 Cross-border handbook

Input documents: 5A/117 (USA); 5A/121 (Chairman, JCG 5A/5C)

Working Group 5A-4 took note of these two input contributions and did not see a need for further action at WG 5A-4 level, since the joint session of WPs 5A/5C had decided that this topic would be further discussed in the Joint WPs 5A/5C Correspondence Group until the next meeting.

### 4.3.11 WRC-15 Agenda items 1.1 and 1.2

Input documents: 5A/80 and 87 (WP 5B); 5A/131, 132, 133 and 134 (WP 5D), 5A/150 (USA); 5A/174 (IEEE); 5A/182 (WP 6A); 5A/187 and 188(Rev.1) (WP 5B)

Output documents: 5A/TEMP/71(Rev.1) and 82(Rev.1) (both LS to JTG 4-5-6-7); 5A/TEMP/73(Rev.1) (LS to the BWA external organisations)

Working Group 5A-4 took note of the information contained in the various liaison statements from WPs 5B, 5D and 6A to JTG 4-5-6-7 and did not see a need to comment on these.

Based on the proposal in Document 5A/150 two liaison statements to JTG 4-5-6-7 were developed in a drafting group chaired by Charles Glass (USA) to provide WP 5A initial information on spectrum requirements studies as well as sharing considerations for the 5-6 GHz frequency range regarding WRC-15 Agenda item 1.1. Additionally the drafting group developed a liaison statement to the BWA external organisations to seek input regarding the consideration of spectrum estimates for terrestrial mobile broadband (excluding IMT) applications.

### 4.3.12 WRC-15 Agenda item 1.7

Input document: 5A/113 (WP 4A)

Working Group 5A-4 took note of the information provided by WP 4A and did not see the need for further action at this point in time.

### 4.3.13 WRC-15 Agenda item 1.8

Input documents: 5A/86 and 114 (WP 4A)

Working Group 5A-4 took note of the information provided by WP 4A and did not see the need for further action at this point in time.

### 4.3.14 WRC-15 Agenda item 1.9

Input documents: 5A/82 (WP 4A); 5A/101 (WP 4C); 5A/105 (WP 4A)

Output document: 5A/TEMP/86(Rev.1) (LS to WP 4A)

Working Group 5A-4 took note of the information provided by WPs 4A and 4C related to various issues under this Agenda item and, taking into account the information already provided on this topic from the last WP 5A meeting, did not see the need for further action at this point in time regarding issue 1.9.2.

A reply liaison statement to WP 4A was developed to provide additional information regarding issue 1.9.1.

### 4.3.15 WRC-15 Agenda item 1.10

Input document: 5A/102 (WP 4C)

Working Group 5A-4 took note of the information provided by WP 4C and did not see the need for further action at this point in time.

### 4.3.16 WRC-15 Agenda item 1.11

Input document: 5A/115 (WP 7B)

Output document: 5A/TEMP/84(Rev.1) (LS to WP 7B)

Working Group 5A-4 took note of the information provided by WP 7B and developed a reply liaison statement back to WP 7B to provide information relevant to the work under this Agenda item.

### 4.3.17 WRC-15 Agenda item 1.12

Input document: 5A/122 (WP 7D)

Output document: 5A/TEMP/85(Rev.1) (LS to WP 7D)

Working Group 5A-4 took note of the information provided by WP 7D and developed a reply liaison statement back to WP 7D to provide information relevant to the work under this Agenda item.

### 4.3.18 WRC-15 Agenda item 1.15

Input documents: 5A/81 (WP 5B); 5A/124 (WP 5D)

Working Group 5A-4 took note of the information provided by WP 5B and, taking into account the information already provided on this topic from the last WP 5A meeting, did not see the need for further action at this point in time. Also, the information that WP 5D provided to WP 5B on this topic was noted.

### 4.3.19 WRC-15 Agenda item 9.1

Input documents: 5A/88 (WP 1B); 5A/103 (WP 4C); 5A/118 (WP 7B); 5A/154 (France)

Output document: 5A/TEMP/57(Rev.1) (LS to WP 4C)

Regarding issue 9.1.1 of this Agenda item, a liaison statement to WP 4C was developed based on the proposal in Document 5A/154 to provide relevant information.

Regarding issues 9.1.6 and 9.1.8 of this Agenda item, WG 5A-4 took note of the information provided by WPs 1B and 7B and did not see the need for further action at this point in time.

## 4.4 Revision of WP 5A texts

Working Group 5A-4 reviewed the WP 5A texts and did not have any revisions at this meeting.

## 4.5 Objectives for the next WP 5A meeting

The objectives for the 11th WP 5A meeting related to the WG 5A-4 activities are:

− continue the revision of Report ITU-R M.2116 on characteristics of broadband wireless access systems operating in the land mobile service for use in sharing studies;

− further progress the development of the working document towards a preliminary draft new [Report/Recommendation] ITU-R M.[MS 14.5-15.35 CHAR] on characteristics of and protection criteria for systems operating in the mobile service in the frequency range 14.5-15.35 GHz;

− continue the discussion regarding the WP 5A spectrum requirements studies for WRC‑15 Agenda item 1.1 based on input contributions;

− identify possible additional characteristics relevant for the ongoing studies in WPs 4A and 7B in response to WRC-15 Agenda items 1.9 (issue 1.9.1) and 1.11;

− consider if deployment-related information on land mobile systems can be provided for the ongoing sharing studies in response to various WRC-15 Agenda items.

## 4.6 Conclusion

The Chairman of WG 5A-4 would like to thank all the WG 5A-4 participants for their active contributions to the work of WG 5A-4 and in particular Christine Hsu (Canada) and Charles Glass (USA) for leading the drafting groups.

# 5 Working Group 5A-5 – New technologies (Chairman: Mr Hitoshi Yoshino, Japan)

Working Group 5A-5 (WG 5A-5) met five times during the 10th meeting of ITU-R Working
Party 5A from 5th to 15th November 2012. Around 50 delegates from Germany, Canada, China, Finland, India, Italy, Kenya, Korea, France, Japan, Nigeria, The Netherlands, Tanzania, Sweden, Russian Federation, USA, Vietnam, Alcatel-Lucent, China Mobile, Ericsson, Nokia Siemens Networks, Robert Bosch and Telecom Italia participated in the meetings. The tasks assigned to WG 5A-5 address new technologies.

Twenty five input Documents were attributed to WG 5A-5, which were:

|  |  |
| --- | --- |
| – Cognitive radio systems (CRS)(Q.241-2/5) | Documents 5A/79 (Annex 24) (WP 5A Chairman), 89 (WPs 1A and 1B), 110 (OJSC Intellect-Telecom, RUS), 153 (USA), 164 (FIN), 166 (J), 170 (CHN), 176 (WWRF), 177 (France Telecom Orange, Telecom Italia), 178, 179 (NSN, VTT), 183 (W P6A),  |
| – Intelligent transport system (ITS)(Q. 205-5/5) | Documents 5A/513(Annex 14) (2010) (WP 5A Chairman), 79 (Annex 21) (WP 5A Chairman), 169 (J) |
| – Agenda item 1.18 (WRC-15) | Documents 5A/79( Annex 8) (WP 5A Chairman), 5A/79 (Annex 9)(WP 5A Chairman), 5A/79 (Annex 22) (WP 5A Chairman),5A/148 (USA), 5A/159 (ETSI TC ERM) , 5A/163 (IARU), 5A/167 (Japan), 5A/168 (Japan) |
| – Software-defined radio (SDR) (Q.230-3/5) | Document 5A/79 (Annex 23) (WP 5A Chairman), 126 (WP 5A),152 (USA) |

Working Group 5A-5 established the two Sub-working Groups (SWGs) to facilitate its work:

|  |  |
| --- | --- |
| SWG (Chairman) | Terms of Reference |
| SWG 5A-5-1 –CRS: Cognitive radio system(Ms Marja Matinmmikko, Finland) | Update a working document toward a preliminary draft new Report ITU-R [LMS.CRS2].Develop a draft liaison statement to WP 6A on CRS.Maintain the work plan for further studies on CRS. |
| SWG 5A-5-2 – ITS: Intelligent Transport System(Mr Satoshi Oyama, Japan) | Develop a working document towards a preliminary draft revision of Report ITU-R M.2228 on advanced intelligent transport system (ITS) radiocommunications.Develop a working document towards a preliminary draft new Recommendation ITU-R M.[AUTO] on systems characteristics of automotive radars operating in the frequency band 76-81 GHz for ITS applications.Develop a draft liaison statement to WP 5B on information on amateur service systems at 77.5-78 GHz for use in sharing studies for WRC-15 Agenda item 1.18.Develop a draft reply liaison statements to WP5C on a guidance on appropriate technical and operating characteristics of vehicular radars for the bands 76-77 GHz and 77-81 GHz – WRC-15 Agenda item 1.18.Maintain the work plan on WRC-15 Agenda item 1.18. |

The other issues were directly considered by the meetings of WG 5A5.

Sub-Working Group 5A-5-1 on CRS and SWG 5A-5-2 on ITS met nineteen and four times, respectively, during the 10th meeting of WP 5A.

## 5.1 Executive summary

A preliminary draft revision of Report ITU-R M.2117 “Software-defined radio in the land mobile, amateur and amateur satellite services” was finalised and proposed for submission to SG 5.

Working Group 5A-5 continued its work on the development of the working document towards a preliminary draft new Report M.[LMS.CRS2] on cognitive radio systems. WG 5A-5 also continued its work on the development of two working documents on ITS; (1) the working document towards a preliminary draft new Recommendation ITU-R M.[AUTO] on systems characteristics of automotive radars operating in the frequency band 76-81 GHz for ITS applications and (2) the working document towards a preliminary draft revision of Report ITU‑R M.2228 on advanced ITS radiocommunications.

Liaison statements to WP 5B on information on amateur service systems at 77.5-78 GHz for use in sharing studies for WRC-15 Agenda item 1.18, and to WP 6A on CRS were developed.

## 5.2 Cognitive radio systems (CRS) in the land mobile service

Working Group 5A-5 considered twelve input contributions. WG 5A-5 reviewed Resolution ITU‑R 58, Question ITU-R 241-2/5 and the work plan ([Appendix 2](#app2) to this Annex) developed at the previous meeting to identify the study items that need to be addressed within the Working Group.

Working Group 5A-5 further developed the working document towards a preliminary draft new Report (PDNR) ITU-R M.[LMS.CRS2] on cognitive radio systems (Document 5A/TEMP/91) based on the received input contributions. The current contents of the working document were reviewed with respect to Resolution ITU-R 58, Question ITU-R 241-2/5 and the work plan, and issues that deserve further consideration were identified. These issues include general characteristics of CRSs, high level operational and technical requirements, performance and potential benefits of CRSs, implementation and use of CRS technologies to enhance spectrum usage efficiency, and factors related to the introduction of CRS technology and corresponding migration issues. Additionally, editor’s notes were added into the working document to indicate topics that need further consideration. Contributions are invited to address these items. WG 5A-5 will review its work plan on CRS at the next meeting.

In addition, WG 5A-5 received two responses (Documents 5A/89 and 5A/186) to its liaison statement on the CRSs studies. Working Group 5A-5 noted the liaison statement from WP 1A and WP 1B, and responded to the liaison statement from WP 6A (Document 5A/TEMP/74).

In the meeting, WWRF (Wireless World Research Forum) liaison rapporteur introduced recent activities of WWRF (Document 5A/176). The WWRF’s 2020 vision were presented and its recent activities of 29th meetings in Berlin were also introduced. Working Group 5A-5 noted WWRF’s interesting activities, in particular, in the area of CRS.

## 5.3 Intelligent transport system (ITS)

Working Group 5A-5 considered eleven input contributions and developed two documents;
(1) the working document towards a preliminary draft new Recommendation ITU-R M.[AUTO] on systems characteristics of automotive radars operating in the frequency band 76-81 GHz for ITS applications, which relates to WRC-15 Agenda item 1.18 (Document 5A/TEMP/69), and

(2) the working document towards a preliminary draft revision of Report ITU-R M.2228 on advanced ITS radiocommunications (Document 5A/TEMP/54). These documents have been carried forward to the next WP 5A meeting for further development.

Woking Group 5A-5 decided not to carry forward working document towards a preliminary draft new Report ITU-R M.[5.9 GHz ITS] – Proposed arrangements for 5.9 GHz intelligent transport systems in Australia (Document 5A/513(Annex 14) (2010) (WP 5A Chairman)), since there was no further contributions to this document.

Regarding WRC-15 Agenda item 1.18, WG 5A-5 had co-located meetings with relevant Sub-WG of WP 5B on WRC-15 Agenda item 1.18. The meeting found that co-located meetings had merits in efficient information exchange and development of the related documents, rather than exchanging information through liaison statements between the two WPs.

Working Group 5A-5 developed a draft liaison statement to WP 5B on information on amateur service systems at 77.5-78 GHz for use in sharing studies for WRC-15 Agenda item 1.18 (Document 5A/TEMP/56) with WG 5A-1 participants. The liaison was sent out to WP 5B during the 10th WP 5A meeting.

Working Group 5A-5 also considered a reply liaison statement to WP 5C. This document intends to reply to the liaison statement ([Document 5A/76](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0076!!MSW-E)) from WP 5C seeking guidance on technical and operating characteristics of automotive radars for the bands 76-77 GHz and 77-81 GHz. However, WG 5A-5 decided not to send a reply liaison statement to WP 5C in this meeting, since WG 5A-5 expects an additional liaison statement from WP 5C. This liaison statement will be considered at the next WP 5A meeting in May 2013.

The meeting decided to maintain the work plan for WRC-15 Agenda item 1.18 (Document 5A/79 (Annex 9) (WP 5A Chairman)).

During the meeting, BR provided a schedule of the meetings on collaboration of ITS communications standards as follows:

− 17 December 2012, Washington: Meeting;

− 27 June 2013, Geneva: A joint ITU/UNECE workshop on ITS;

− 28 June 2013, Geneva: Meeting.

## 5.4 Software-defined radio (SDR)

Working Group 5A-5 received a liaison statement from WP 5D and an input contribution on the revision of Report ITU-R M.2117. The liaison informed WP 5A of WP 5D’s comment on the IMT part of the working document towards a preliminary draft revision of Report ITU-R M.2117, which provided no further modifications to IMT part of the document. Based on the input contribution, WG 5A-5 completed its work on the revision of Report ITU-R M.2117 (Document 5A/TEMP/55).

## 5.5 Future work

At the next meeting of WP 5A, WG 5A-5 plans to further develop the working documents towards a PDN Reports ITU-R M.[LMS.CRS2] on cognitive radio systems in accordance with Question ITU-R 241-1/5 and Resolution ITU-R 58. WG 5A-5 also plans to review the work plan on CRS. Contributions to the working document are invited.

Working Group 5A-5 also continues the development of a working document towards a preliminary draft revision of Report ITU-R M.2228 on advanced intelligent transport system (ITS) radiocommunications.

With respect to WRC-15 Agenda item 1.18, WG 5A-5 will continue the development of the working document towards a preliminary draft new Recommendation ITU-R M.[AUTO] on systems characteristics of automotive radars operating in the frequency band 76-81 GHz for ITS applications.

Working Group 5A5 also plans to develop a liaison statement in response to liaison statements from WP 5C that request guidance on technical and operating characteristics of automotive radars for the bands 76-77 GHz and 77-81 GHz as a matter of urgency. Contributions are invited on this topic.

Finally the WG 5A-5 Chairman would like to thank Sub-Working Group Chairmen
Ms Marja Matinmikko and Mr Satoshi Oyama for their excellent chairmanship and all participants for their contribution to work of the group.

**Attachment:** [Appendix 2](#app2) – Work plan for further studies on cognitive radios systems (CRS)

Appendix 1 to Annex 3

**Proposed course of action toward the review of Recommendations and
Reports associated with work on WRC-15 Agenda item 1.3**

(Source: Document 5A/TEMP/100)

reviEW of recommendations and reports associated
with work on wrc-15 agenda item 1.3

As part of the work under WRC-15 Agenda item 1.3, Working Group 3 has examined the Recommendations and Reports under its purview and identified the following courses of action. It was noted that the preparatory work for WRC-15 Agenda item 1.3 may include the development of new Recommendations and/or Reports.

Priority 1: Recommendations and Reports relevant to WRC-15 Agenda item 1.3

**Report ITU-R M.2033**, “Radiocommunication objectives and requirements for public protection and disaster relief” (2003)

This document “identifies objectives, applications, requirements, a methodology for spectrum calculations, spectrum requirements and solutions for interoperability”

1) Relevant to WRC-15 Agenda item 1.3.

2) Propose review and revision to further address broadband requirements.

Priority 1bis: Recommendations and Reports already under revision

**Recommendation ITU-R M.2009**, “Radio interface standards for use by public protection and disaster relief operations in some parts of the UHF band in accordance with Resolution **646 (WRC‑03)**” (2012)

1) Relevant to WRC-15 Agenda item 1.3.

2) Already under revision.

**Recommendation ITU-R M.2015**, “Frequency arrangements for public protection and disaster relief radiocommunication systems in UHF bands in accordance with Resolution **646 (Rev.WRC‑12)**” (2012)

1) Relevant to WRC-15 Agenda item 1.3.

2) Already under revision.

**Report ITU-R M.2014**, “Digital land mobile systems for dispatch traffic” (2006)

1) Not relevant to WRC-15 Agenda item 1.3.

2) Revision complete and submitted to SG 5for consideration.

Priority 2: Recommendations and Reports for which consequential changes may be required based on results of technical studies

**Recommendation ITU-R M.1637**, “Global cross-border circulation of radiocommunication equipment in emergency and disaster relief situations” (2006)

The document is designed “to facilitate the global circulation of radiocommunications equipment to be used in emergency and disaster relief situations”.

1) References Resolution **646**; therefore relevant to WRC-15 Agenda item 1.3.

**Recommendation ITU-R M.1826**, “Harmonized frequency channel plan for broadband public protection and disaster relief operations at 4 940-4 990 MHz in Regions 2 and 3” (2007)

The document “addresses harmonized frequency channel plans in the band 4 940‑4 990 MHz for broadband public protection and disaster relief radiocommunications in Regions 2 and 3”

1) Relevant to WRC-15 Agenda item 1.3, appears to address broadband already.

2) Suggest no further revision needed under WRC-15 Agenda item 1.3; possible further review based on technical studies developed to support CPM text.

**Recommendation ITU-R F.1105**, “Fixed wireless systems for disaster mitigation and relief operations” (2006)

This document “provides characteristics of fixed wireless systems used for disaster mitigation and relief operations”

1) Not relevant to WRC-15 Agenda item 1.3.

2) Possible revision to address broadband characteristics based on technical studies developed to support CPM text.

Priority 3: Recommendations and Reports proposed for suppression

**Recommendation ITU-R M.1222**, “Transmission of data messages on shared private land mobile radio channels” (1997)

The document standardizes “the data transmission procedures for users who share an analogue radio channel in order to minimize interference to other users who also operate on the channel”.

1) Not relevant to WRC-15 Agenda item 1.3 work.

2) Proposed for suppression.

**Report ITU-R M.741**, “Multi-channel land mobile systems for dispatch traffic (with or without PSTN interconnection)” (1990)



1) Not relevant to WRC-15 Agenda item 1.3.

2) Proposed for suppression.

**Report ITU-R M.901**, “Frequency assignment methods for trunked mobile radio systems” (1990)



1) Not relevant to WRC-15 Agenda item 1.3.

2) Proposed for suppression.

Handbooks

**Volume 3 of the Land Mobile Handbook** (2005)

[TBD]

Appendix 2 to Annex 3

Work plan for further studies on cognitive radios systems (CRS)

(Source: Document 5A/TEMP/94(Rev.1))

|  |  |
| --- | --- |
| **Title** | Work plan for further studies on CRS |
| **Document type** | Report(s) |
| **WP 5A Lead Group** | WG New Technologies  |
| **SWG Chairman** | Marja Matinmikko |
| **Editor** | TBD |
| **Focus for scope and work** | The scope of this work is to study CRS in accordance with Question ITU-R 241-2/5 and Resolution ITU-R 58. On this basis the work should address the implementation and use of CRS by considering:* operational and technical requirements at a high level;
* characteristics;
* performance;
* possible benefits;
* cognitive capabilities and CRS technologies that could enhance sharing between the mobile service and other services;
* cognitive capabilities and CRS technologies that could enhance coexistence of the systems in the mobile service, and
* factors that need to be considered for the introduction of CRS technologies in the land mobile service including migration issues.

These items should be addressed in one or more Reports. |
| **Related Documents** | Reports ITU-R M.2225, ITU-R M.2242, ITU-R SM.2152 |
| **Milestones** | **Meeting No. 1 (May 2012)**Review Question ITU-R 241-2/5 and Resolution ITU-R 58 and identify items to be studied.Develop a work plan for further studies on CRS.Review and revise the working document towards [LMS.CRS2].Prepare liaisons to relevant ITU-R groups and other appropriate external organisations, as necessary.**Meeting No. 2 (November 2012)**Consider the received input contributions related to the scope of work.Review and revise the working document towards [LMS.CRS2].Review and revise work plan as necessary.Prepare liaisons to relevant ITU-R Groups and other appropriate external organisations, as necessary.**Meeting No.3  (May, 2013)**Consider the received input contributions related to the scope of work.Review and revise work plan as necessary.Prepare liaisons to relevant ITU-R Groups and other appropriate external organisations, as necessary.**Meeting No.  4 (November 2013)**Consider the received input contributions related to the scope of work.Review and revise work plan as necessary.Prepare liaisons to relevant ITU-R Groups and other appropriate external organisations, as necessary.**Meeting No. 5 (May 2014)**Consider the received input contributions related to the scope of work.Review and revise work plan as necessary.Prepare liaisons to relevant ITU-R groups and other appropriate external organisations, as necessary.**Meeting No. 6 (November 2014** |

Appendix 3 to Annex 3

Terms of Reference – Joint Correspondence Group [5A/5C JCG]

**Handbook on Guidance for bilateral frequency use discussions on fixed/land mobile systems in the frequency range 29.7 MHz–[39.5 GHz]**

(Source: Appendix 2 to [Annex 3](http://www.itu.int/md/dologin_md.asp?lang=en&id=R07-WP5A-C-0788!N03!MSW-E) to [Document 5A/788)](http://www.itu.int/md/R07-WP5A-C-0788/en)

## The Terms of Reference Joint Correspondence Group [5A/5C JCG] are:

1) to work in accordance with § 2.16 of Resolution ITU-R 1-5;

2) to review the draft structure of the Handbook and review/consider the input contributions to WPs 5A and 5C that have been submitted on the matter of this Handbook for detail analysis;

3) to consider input contributions to JCG WPs 5A/5C on the matter of this Handbook for detail analysis;

4) to identify what information on systems in the land mobile and fixed services needs to be included in the Handbook on “Guidance for bilateral frequency use discussions on fixed/land mobile systems in the frequency range 29.7 MHz–[39.5 GHz]”;

5) to identify what kind of information on radiowave propagation needs to be included in the Handbook;

6) provide a report to WP 5A and WP 5C on the progress of its work to each subsequent meeting.

The Joint Correspondence Group shall continue the work initiated following the sixth meeting of WPs 5A/5C and should submit 4 weeks before the each subsequent WPs 5A/5C meeting their report in relation to the Handbook, including liaison activity for the consideration of WPs 5A/5C.

**Chairman of the Correspondence Group**:

 Mr Evgeny Tonkikh **E-mail**: eugene.tonkikh@ties.itu.int
 (The Russian Federation)