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| **Radiocommunication Study Groups** |  |
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| Source: Documents 5A/TEMP/30, 40, 25R1, 47, 48 and 49 | **Revision 1 to****Annex 3 toDocument 5A/79-E** |
| **21 June 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 26](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0079!N26!MSW-E) 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 began work on WRC-15 Agenda item 1.4. A workplan and milestones for the Agenda item were adopted. An initial liaison statement to contributing Working Parties was drafted. Working documents toward preliminary draft new Reports on compatibility and spectrum occupancy were considered and carried forward for future work, as were elements of draft CPM text.

Review of ITU-R documentation relevant to the amateur and amateur-satellite services continued. One working document toward a preliminary draft new Recommendation, “Telegraphic alphabet for data communication by phase shift keying at 31 baud in the amateur and amateur-satellite services”, was raised to preliminary draft new Recommendation status, 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 five meetings and completed its work.

## 1.3 Agenda item 1.4 (WRC-15)

Input Document [5A/30](http://www.itu.int/md/R12-WP5A-C-0030/en) (USA) was considered and incorporated into a workplan and milestones for Agenda item 1.4. The workplan and milestones were submitted to WP 5A as Doc. 5A/TEMP/1 for approval.

Input Document [5A/31](http://www.itu.int/md/R12-WP5A-C-0031/en) (USA) and the relevant part of Input Document [5A/43](http://www.itu.int/md/R12-WP5A-C-0043/en) (Russian Federation) were considered and consolidated into a liaison statement to WP 5B and WP 5C inviting submission of information relevant to Agenda item 1.4. The liaison statement was submitted to WP 5A as Doc. 5A/TEMP/2 for approval.

Input Document [5A/17](http://www.itu.int/md/R12-WP5A-C-0017/en) (Canada) was considered and incorporated into a working document toward draft CPM text for Agenda item 1.4. The working document was forwarded as Doc. 5A/TEMP/23 to WP 5A for attachment to the Chairman’s Report.

Input Document [5A/18](http://www.itu.int/md/R12-WP5A-C-0018/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 Doc. 5A/TEMP/22 to WP 5A for attachment to the Chairman’s Report.

The relevant part of Input Document [5A/43](http://www.itu.int/md/R12-WP5A-C-0043/en) (Russian Federation) was considered and incorporated into a working document toward a preliminary draft new Report ITU-R M.[AMATEUR], Compatibility analysis of possible amateur systems with fixed, land mobile and maritime mobile services in the frequency band 5 250-5 450 kHz. The working document was forwarded as Doc. 5A/TEMP/27 to WP 5A for attachment to the Chairman’s Report.

Input Document [5A/57](http://www.itu.int/md/R12-WP5A-C-0057/en) (China) was considered and, at the request of the administration of China, noted.

## 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, Reports and Handbooks relevant to the amateur and amateur-satellite services.

Input Document [5A/22](http://www.itu.int/md/R12-WP5A-C-0022/en) (USA) containing a proposal for revisions to the ITU Handbook on the amateur and amateur-satellite services was considered. The revisions were documented and forwarded as Doc. 5A/TEMP/28 to WP 5A for attachment to the Chairman’s Report.

Input Document [5A/23](http://www.itu.int/md/R12-WP5A-C-0023/en) (USA) containing a proposal for revision of the working document towards a preliminary draft new Recommendation ITU-R M.[VARICODE] was considered and incorporated. The document was raised from working document status, and the preliminary draft new Recommendation ITU-R M.[VARICODE] was forwarded as Doc. 5A/TEMP/5 to WP 5A for attachment to the Chairman’s Report.

## 1.5 Other contributions

Input Document [5A/38](http://www.itu.int/md/R12-WP5A-C-0038/en) (Japan) was considered, but no further action was judged necessary at this time.

## 1.6 Objectives for the next meeting

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

* Complete review of amateur service technical and operational characteristics and develop preliminary draft new Report.
* Finalize workplan.
* Begin sharing studies between proposed amateur service stations and existing service stations.
* Provide any feedback on modelling and characteristics from other groups.
* Develop preliminary draft new report(s) for sharing studies.
* Transmit preliminary draft new report on amateur characteristics to contributing groups for final review.
* Transmit preliminary draft new report(s) on sharing studies to contributing groups as appropriate for review.
* Develop draft CPM text for sections 1, 2, and 3, considering and incorporating from contributing groups.
* 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 three times at the ninth meeting of WP 5A in Geneva with approximately 30 delegates in attendance. Working Group 5A-2 received the 10 documents remanded by the WP 5A plenary as follows:

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|  | **Documents** |
| **2.1 Wireless home networks** | [790](http://www.itu.int/md/R07-WP5A-C-0790), [794](http://www.itu.int/md/R07-WP5A-C-0794), [40](http://www.itu.int/md/R12-WP5A-C-0040/en) (ITU-T SG 15); |
| **2.2 Question** [**37**](http://www.itu.int/pub/R-QUE-SG05.37) **(except PPDR)** | [792](http://www.itu.int/md/R07-WP5A-C-0792) (ITU-T SG 16); [2](http://www.itu.int/md/R12-WP5A-C-0002/en) ([ITU-T FG AVA](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP5A-C&source=ITU-T%20FG%20AVA)) |
| **2.3 Update of Rec. ITU-R M.1801** | [12R1](http://www.itu.int/md/R12-WP5A-C-0012/en) - Attachment 2 (ATIS) |
| **2.4 ATG** | [788](http://www.itu.int/md/R07-WP5A-C-0788/en) ([Annex 7](http://www.itu.int/md/dologin_md.asp?lang=en&id=R07-WP5A-C-0788!N07!MSW-E)) (WP 5A); [52](http://www.itu.int/md/R12-WP5A-C-0052/en) (China); [69](http://www.itu.int/md/R12-WP5A-C-0069/en) |
| **2.5 AI 9.1.6 Definitions** | [45](http://www.itu.int/md/R07-WP5A-C-0045) ([Annex 11](http://www.itu.int/md/dologin_md.asp?lang=en&id=R07-WP5A-C-0045!N11!MSW-E)) (WP 5A) |
| **2.6 Resolution ITU-R 60** | [5B/10](http://www.itu.int/md/R12-WP5B-C-0010/en) |

Working Group 5A-2 has set up one drafting group to deal with Air-to-Ground (ATG) communication systems with aircraft.

– DG 5A2-1 ATG Mr. GuangHan Xu

## 2.1 Wireless home networks

Regarding wireless home networks, three liaison statements were received, i.e. Docs. 5A/[790](http://www.itu.int/md/R07-WP5A-C-0790), 5A/[794](http://www.itu.int/md/R07-WP5A-C-0794), and [5A/40](http://www.itu.int/md/R12-WP5A-C-0040/en) (ITU-T SG 15).

The liaison statements from ITU-T SG 15 inform WP 5A on the status of the G.wnb narrow-band wireless home networking specifications. The G.wnb original text has been split into radio-related and non-radio related parts (“G.wnb-freq”) and the non-radio (frequency) related text (“G.wnb”).

Working Group 5A-2 developed a liaison statement to ITU-T SG 15 (TEMP/29). The liaison points out that WP 5A’s view is that the radio related Recommendation should include the physical layer (currently appearing only in draft new Recommendation ITU-T G.9959 (ex. G.wnb), for consent). This would be in addition to the information on the RF profiles and frequency bands of operation which already appears in ”wnb-freq”. ITU-T SG 15 should consider this suggestion for the removal of the radio parts when G.9959 is up for review and in future ITU-T Recommendations.

WP 5A also points out that it is important to keep all radio aspects in ITU-R Recommendations because these Recommendations are often used for sharing studies and analyses of potential interference between radiocommunication systems.

## 2.2 Question [37](http://www.itu.int/pub/R-QUE-SG05.37) (except PPDR)

There are two input contributions ([792](http://www.itu.int/md/R07-WP5A-C-0792) (ITU-T SG 16); [2](http://www.itu.int/md/R12-WP5A-C-0002/en) ([ITU-T FG AVA](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP5A-C&source=ITU-T%20FG%20AVA))) under consideration. Based on these received inputs, a liaison statement (5A/TEMP/20) has been developed and has been submitted to WP 5A for approval.

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

A proposal from ATIS ([12R1](http://www.itu.int/md/R12-WP5A-C-0012/en) - Attachment 2) was received for updating Recommendation ITU‑R M.1801 and Working Group 5A-2 decided to start the process of the draft revision of this Recommendation.

A liaison statement has been developed to invite external organizations to provide any update or new material to complete the revision work.

## 2.4 Air-to-Ground (ATG) communication systems with aircraft

DG 5A2-1 had two meetings on May 25 and 28 respectively. During the first DG 5A2-1 meeting, the working document towards a preliminary draft of Report ITU-R [LMS.ATG] was revised by incorporating modifications proposed by the China contribution (Doc. [5A/52](http://www.itu.int/md/R12-WP5A-C-0052/en)). It was also suggested by the meeting to consider other technology, particularly the Broadband Direct-Air-to-Ground Communications (DA2GC) technology mentioned in Liaison Rapporteur Reports (Docs. [5A/69](http://www.itu.int/md/R12-WP5A-C-0069/en) and [5A/781](http://www.itu.int/md/R07-WP5A-C-0781/en)) from European Telecommunications Standards Institute (ETSI). It was decided to issue a liaison statement to external organizations soliciting contributions for completing the working document towards a preliminary draft of Report ITU-R [LMS.ATG]. At the second DG 5A2-1 meeting, the Chairman presented the initial draft of the Liaison statement. It was then revised based on the inputs from the meeting and finally approved by the meeting.

## 2.5 Agenda item 9.1.6 definitions

Working Group 5A-2 discussed the topic and reviewed the Doc. 5A/[45](http://www.itu.int/md/R07-WP5A-C-0045) [Annex 11](http://www.itu.int/md/dologin_md.asp?lang=en&id=R07-WP5A-C-0045!N11!MSW-E) document. Working Group 5A-2 found out that there is no relationship between AI 9.1.6 Definitions and Doc. 5A/[45](http://www.itu.int/md/R07-WP5A-C-0045) [Annex 11](http://www.itu.int/md/dologin_md.asp?lang=en&id=R07-WP5A-C-0045!N11!MSW-E) document. Working Group 5A-2 encourages the members of ITU-R to submit contribution on AI 9.1.6 Definitions and Doc. 5A/[45](http://www.itu.int/md/R07-WP5A-C-0045) [Annex 11](http://www.itu.int/md/dologin_md.asp?lang=en&id=R07-WP5A-C-0045!N11!MSW-E) document to facilitate the work.

## 2.6 Resolution ITU-R 60

A joint Liaison statement to ITU-T SG13 on “Energy Measurement Reference Model” taking into account the views of WPs 5A, 5B, 5C and 5D has been developed.

## 2.7 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=R07-WP5A-C-0703!N01!MSW-E) to [Doc. 5A/788](http://www.itu.int/md/R07-WP5A-C-0788) 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.

## 2.8 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.1801.

## 2.9 Chairman’s closing remarks

Finally, Chairman of WG 2 wishes to thank all participants of WG 2 for their contributions and cooperation and particularly thank DG ATG Chairman Mr. Guanghan Xu for his good and efficient work.

# 3 Working Group 5A-3 – Public Protection and Disaster Relief (Chairman: Ms. Amy Sanders, USA)

Working Group 5A-3 met on six occasions and considered 14 input documents. The input documents were related to WRC-15 Agenda items 1.3 and 1.10, new proposals for revisions of documents under the purview of WG 3, the on-going revision of documents carried forward as Annexes to the Chairman’s Report of the 8th meeting of WP 5A (Doc. [5A/788](http://www.itu.int/md/R07-WP5A-C-0788/en)), and the status of Question 209-4/5.

The Disaster Relief Rapporteur’s Report (Doc. [5A/46](http://www.itu.int/md/R12-WP5A-C-0046/en)) was presented at the WP 5A Plenary and noted in the WG 5A-3 meeting.

In addition, the WG was tasked by the WP 5A Chair 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 discussions were held at the Working Group level and were led by the WG Chair.

Documents [5A/25](http://www.itu.int/md/R12-WP5A-C-0025/en) (USA) and [5A/58](http://www.itu.int/md/R12-WP5A-C-0058/en) (Motorola Solutions) contained proposals on the workplan for Agenda item 1.3. The meeting considered the proposals along with the existing workplan on PPDR contained in Document [5A/788 Annex 3 Appendix 1](http://www.itu.int/md/dologin_md.asp?lang=en&id=R07-WP5A-C-0788!N03!MSW-E). After detailed discussion of the proposals, a work plan was developed and transferred to the Agenda item workplan template provided by the ITU-R Secretariat (Doc. 5A/TEMP/11(Rev.1)). A liaison statement to concerned working parties (Doc. 5A/TEMP/24(Rev.1)) was developed to provide them with the work plan on Agenda item 1.3.

In response to the liaison statement out of the previous meeting requesting input on the working document toward a preliminary draft revision of Report ITU-R M.2014 on digital land mobile systems for dispatch traffic, Documents [5A/10](http://www.itu.int/md/R12-WP5A-C-0010/en) (3GPP2) and [5A/21](http://www.itu.int/md/R12-WP5A-C-0021/en) (ETSI) were received. The material contained in the input contributions was incorporated into the working document contained in Doc. [5A/788 Annex 5](http://www.itu.int/md/dologin_md.asp?lang=en&id=R07-WP5A-C-0788!N05!MSW-E). The meeting agreed to propose to change the status to a preliminary draft revision and to present the revised document to the WP 5A Plenary as a document (Doc. 5A/TEMP/14) to be carried forward as an Annex in the Chairman’s Report for further work at future meetings.

In response to the liaison statement out of the previous meeting requesting input on the preliminary draft new report on channelization scenarios for public protection and disaster relief
operations in some parts of the UHF band, Documents [5A/9](http://www.itu.int/md/R12-WP5A-C-0009/en) (3GPP2), [5A/20](http://www.itu.int/md/R12-WP5A-C-0020) (ETSI), [5A/47](http://www.itu.int/md/R12-WP5A-C-0047/en) (3GPP), and [5A/51](http://www.itu.int/md/R12-WP5A-C-0051/en) (Australia) were received. After due consideration and discussion over several sessions, the meeting decided to discontinue development of the proposed report contained in Doc. [5A/788 Annex 6](http://www.itu.int/md/dologin_md.asp?lang=en&id=R07-WP5A-C-0788!N06!MSW-E), as it was felt to be more appropriately handled within the relevant standards development organizations.

Documents [5A/56](http://www.itu.int/md/R12-WP5A-C-0056/en) (China) and [5A/24](http://www.itu.int/md/R12-WP5A-C-0024/en) (USA) proposed revisions to Recommendation ITU-R M.2009 and M.2015, respectively. The meeting debated the advisability of undertaking revisions of these Recommendations, which were recently approved. Following review of Resolution ITU‑R 1‑6 and consultation with the BR Secretariat, the meeting determined to proceed with the revisions, while holding in abeyance the decision on when to submit them to Study Group 5 for consideration. The material in Document [5A/51](http://www.itu.int/md/R12-WP5A-C-0051/en) was considered pertinent to the proposed revision of Recommendation ITU-R M.2015 and considered as part of that discussion. The working documents were presented to the WP 5A Plenary as documents to be carried forward as annexes to the Chairman’s Report for further work at future meetings.

Document [5A/38](http://www.itu.int/md/R12-WP5A-C-0038/en) (Japan) proposed to change the status of three Questions assigned to WP 5A based on their relationship to WRC-15 Agenda items. WG 3 was asked to consider the proposal in Document 5A/38 relating to Question 209-4/5. The meeting considered the proposal and reviewed the scope of the Question and the scope of Agenda item 1.3 and concluded that the scope of the Question was broader than the Agenda item. The meeting proposed no change in the status of Question 209-4/5.

Document [5A/50](http://www.itu.int/md/R12-WP5A-C-0050/en) (Korea) proposed development of a new report on nationwide mission critical broadband PPDR requirements. The meeting discussed whether it was appropriate to start a new document or revise the existing Report ITU-R M.2033. The meeting decided to carry forward the document and solicit contributions to the next meeting on the proposed way forward. The meeting noted that the contribution included IMT technologies, which are outside the purview of WP 5A. Korea proposed the possible revision of “IMT” to “broadband technologies, such as LTE”. It was decided to address that issue at the next meeting based on contributions.

As part of the work under WRC-15 Agenda item 1.3, Working Group 5A-3 has examined the Recommendations and Reports under its purview and identified a course of action on each of the documents. The results of these discussions are contained in [Appendix 1](#app1) to this annex. This proposed course of action was also liaised to external organizations for their consideration. It was noted that the preparatory work for Agenda item 1.3 may include the development of new Recommendations and/or Reports.

WG 5A-3 also followed the Chairman’s instructions to consider the Texts and the Guide and the structure of the work in WP 5A. WG 5A-3 noted that the appropriate revisions to the Texts in Annex 1 would occur automatically following decisions of the Plenary; but did propose additions to “Working Party 5A contacts for liaison and collaboration with other Organizations under Resolution ITU-R 9-3” associated with PPDR as well as additions to the Guide to reflect developments at Study Group 5 and WRC-12 related to PPDR.

With regard to work at the tenth meeting of Working Party 5A, the objective for Working Group 5A-3 will be to continue developing the revisions of Report ITU-R M.2014, and Recommendations ITU‑R M.2009 and ITU-R M.2015, based on input contributions. Furthermore, work on Agenda item 1.3 will continue based on the work plan developed at this meeting.

Finally, the WG Chair would like to thank the participants of Working Group 5A-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 Introduction

Working Group 5A-4 met four times during the May 2012 meeting of Working Party 5A. WG 5A-4 considered 18 input contributions and developed 7 output documents.

## 4.2 Considering 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/2.

### 4.2.1 WRC-15 Agenda items 1.1 & 1.2

Input documents: [5A/6](http://www.itu.int/md/R12-WP5A-C-0006/en) (Chairman JTG 4-5-6-7); [5A/32](http://www.itu.int/md/R12-WP5A-C-0032/en) (USA)

Output document: 5A/TEMP/4(Rev.1) (LS to JTG 4-5-6-7)

WG 5A-4 took note of the request from the Chairman of JTG 4-5-6-7 to provide a list of available technical and operational characteristics as well as protection criteria relevant to the sharing studies under WRC-15 Agenda items 1.1 & 1.2 and developed a reply liaison based on the proposal in Document 5A/32.

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

Input document: [5A/12(Rev.1)](http://www.itu.int/md/R12-WP5A-C-0012/en) (ATIS)

Output document: 5A/TEMP/10 (Working Document)

Based on the proposal in Document 5A/12(Rev.1), WG 5A-4 decided to start a revision of Report ITU-R M.2116 to bring it up to date with the latest developments as provided by the SDOs in relation to the revision of Recommendation ITU-R M.1801. A working document for this revision was developed and it was also suggested to add some text to the expected liaison statement from WG 5A-2 to the SDOs regarding the revision of Recommendation ITU-R M.1801, to also draw the attention of the SDOs to the revision of Report ITU-R M.2116 and to request input contributions on this revision for the next WP 5A meeting.

### 4.2.3 Recommendation ITU-T K.91 (K.guide)

Input document: [5A/13](http://www.itu.int/md/R12-WP5A-C-0013/en) (ITU-T SG 5)

WG 5A-4 took note of the information from ITU-T regarding Recommendation ITU-T K.91 “Guidance for assessment, evaluation and monitoring of the human exposure to radio frequency electromagnetic fields” which is now under AAP process in ITU-T. It was suggested that WP 5A members consider the need for comments on the Recommendation and submit them to the AAP process as required.

### 4.2.4 BWA band planning

Input documents: [5A/19](http://www.itu.int/md/R12-WP5A-C-0019/en) (Canada); [5A/27](http://www.itu.int/md/R12-WP5A-C-0027/en) (USA)

Output document: 5A/TEMP/21 (Working Document)

The working document (Annex 8 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).

It was also discussed whether the work on this PDNR should be suspended to focus WP 5A resources on WRC-15 issues for the time being. A few administrations were of the view that the guidance of such a Recommendation would be too generic and thus not be required and that WP 5A should focus on WRC-15 issues during this Study Cycle. Furthermore the topic could be more relevant for WP 1B (e.g. the “Handbook on National Spectrum Management”).

A number of other administrations were of the view that the work on the PDNR was useful and relevant to WP 5A and should be continued. Some administrations also indicated that they intend to contribute material to the working document at the next WP 5A meeting.

Therefore, the work on the working document towards a PDNR was continued in its current form to address a number of outstanding issues. Also Editor’s Notes were inserted to highlight some remaining open items to encourage contributions to the next meeting.

## 4.2.5 WRC-15 Agenda item 1.15

Input document: [5A/29](http://www.itu.int/md/R12-WP5A-C-0029/en) (USA)

Output document: 5A/TEMP/3(Rev.1) (LS to WP 5B)

WG 5A-4 took note of the work that just started in WP 5B related to WRC-15 Agenda item 1.15 “to consider spectrum demands for on-board communication stations in the maritime mobile service in accordance with Resolution **358 (WRC-12)**” and developed a liaison statement to WP 5B based on Document 5A/29, to provide ITU-R Recommendations and Reports related to the protection of systems in the land mobile service which are relevant to the WP 5B work on this issue.

## 4.2.6 ENG studies

Input document: [5A/786](http://www.itu.int/md/R07-WP5A-C-0786) (WP 5C)

WG 5A-4 took note of the liaison statement of WP 5C, which was carried over from the last Study Cycle. Due to the fact that the Radiocommunication Assembly 2012 approved Resolution ITU-R 59 “Studies on availability of frequency bands and/or tuning ranges for worldwide and/or regional harmonization and conditions for their use by terrestrial electronic news gathering systems”, WG 5A-4 did not see the need to reply to this liaison statement which has been overtaken by events at RA-12. Instead it was decided to wait for the work related to Resolution ITU-R 59 begin in WP 5C and then provide comments from a WP 5A perspective at a later meeting as appropriate.

## 4.2.7 Cross-border handbook

Input documents: [5A/11](http://www.itu.int/md/R12-WP5A-C-0011/en) (Chairman JCG 5A/5C); [5A/42](http://www.itu.int/md/R12-WP5A-C-0042/en) (Russian Federation)

WG 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 Ad hoc meeting of WP 5A and WP 5C had decided that this topic would be further discussed in the joint 5A/5C Correspondence Group until the next meeting.

## 4.2.8 Separation distances

Input document: [5A/791](http://www.itu.int/md/R07-WP5A-C-0791/en) (WP3K)

WG 5A-4 took note of the information provided by WP 3K regarding the ongoing work related to Recommendation ITU-R P.528 and the calculation of separation distances and will take this information into account as appropriate in future sharing studies.

## 4.2.9 IMT matters

Input document: [5A/789](http://www.itu.int/md/R07-WP5A-C-0789/en) (WP 5B)

WG 5A-4 took note of the information provided by WP 5B back to WP 5D related to the revision of Recommendations ITU-R M.1580 and ITU-R M.1581 and did not see the need for further action since the issue had already been resolved at the SG 5 meeting in November 2011.

## 4.2.10 WRC-12 Agenda item 1.10

Input documents: [5A/74](http://www.itu.int/md/R12-WP5A-C-0074/en) (WP 4C); [5A/75](http://www.itu.int/md/R12-WP5A-C-0075/en) (WP 4C)

Output document: 5A/TEMP/38(Rev.1) (LS to WP 4C)

WG 5A-4 took note of the work that just started in WP 4C related to WRC-15 Agenda item 1.10 “to consider spectrum requirements and possible additional spectrum allocations for the mobile‑satellite service in the Earth-to-space and space-to-Earth directions, including the satellite component for broadband applications, including International Mobile Telecommunications (IMT), within the frequency range from 22 GHz to 26 GHz, in accordance with Resolution **234 (WRC‑12)**” and developed a reply liaison statement to WP 4C, to provide ITU-R Recommendations and Reports related to systems in the land mobile service which are relevant to the WP 4C work on this issue.

WG 5A-4 also noted the request from WP 4C for feedback if any additional parameters are needed for conducting sharing studies. Due to time constraints, WP 5A was unable to address this issue at the May 2012 meeting and contributions on this topic are sought for the November 2012 meeting.

Additionally, as some of the information requested by WP 4C was deployment-related, and since only limited information of this kind is currently available in ITU-R Recommendations and Reports, it was agreed to encourage input contributions to the November 2012 meeting of WP 5A to possibly be able to provide more deployment-related information to WP 4C.

## 4.2.11 WRC-12 Agenda item 9.1.1

Input document: [5A/71](http://www.itu.int/md/R12-WP5A-C-0071/en) (WP 4C)

Output document: 5A/TEMP/37(Rev.1) (LS to WP 4C)

WG 5A-4 took note of the work that just started in WP 4C related to WRC-15 Agenda item 9.1.1: “Resolution **205 (Rev.WRC-12) -** Protection of the systems operating in the mobile-satellite service in the band 406-406.1 MHz” and developed a reply liaison statement to WP 4C, to provide ITU-R Recommendations and Reports related to systems in the land mobile service which are relevant to the WP 4C work on this issue.

Additionally, as some of the information requested by WP 4C was deployment-related, and since only limited information of this kind is currently available in ITU-R Recommendations and Reports, it was agreed to encourage input contributions to the November 2012 meeting of WP 5A to possibly be able to provide more deployment-related information to WP 4C.

## 4.2.12 WRC-12 Agenda item 1.9.2

Input document: [5A/73](http://www.itu.int/md/R12-WP5A-C-0073/en) (WP 4C)

Output document: 5A/TEMP/39(Rev.1)

WG 5A-4 took note of the work that just started in WP 4C related to WRC-15 Agenda item 1.9.2 “to consider, in accordance with Resolution **758 (WRC‑12)** (…) the possibility of allocating the bands 7 375-7 750 MHz and 8 025‑8 400 MHz to the maritime-mobile satellite service and additional regulatory measures, depending on the results of appropriate studies” and developed a reply liaison statement to WP 4C, to provide ITU-R Recommendations and Reports related to systems in the land mobile service which are relevant to the WP 4C work on this issue.

Additionally, as some of the information requested by WP 4C was deployment-related, and since only limited information of this kind is currently available in ITU-R Recommendations and Reports, it was agreed to encourage input contributions to the November 2012 meeting of WP 5A to possibly be able to provide more deployment-related information to WP 4C.

## 4.2.13 Impact of increased MSS emissions

Input document: [5A/72](http://www.itu.int/md/R12-WP5A-C-0072/en) (WP 4C)

WG 5A-4 noted the liaison statement from WP 4C on this issue and is awaiting further information on the progress of this document from the next WP 4C meeting as advised by WP 4C. At that time, WP 5A will be able to further review the document based on the comments already provided to WP 4C from the November 2011 meeting of WP 5A (see Document 5A/TEMP/346(Rev.1) which is now Document [4A/37](http://www.itu.int/md/R12-WP4A-C-0037/en)).

## 4.3 Objectives for the next WP 5A meeting

The objectives for the 10th WP 5A meeting related to the WG 5A-4 activities are:

* Continue the revision of Report ITU-R M.2116 based on input contributions.
* Further progress the development of the working document towards preliminary draft new Recommendation [LMS.FA] on BWA band planning.
* Consider the need to provide comments to WP 4C if any additional parameters are needed for conducting sharing studies under WRC-15 Agenda item 1.10.
* Consider if deployment-related information on land mobile systems can be provided for the various sharing studies carried out by WP 4C.

## 4.4 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) for leading the drafting group regarding BWA band planning.

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

Working Group 5A-5 met five times during the 9th meeting of ITU-R WP 5A from 22ndto 31st May 2012. Around 50 delegates from Brazil, Germany, Canada, China, Finland, India, Italy, Korea, France, Japan, Malaysia, Thailand, The Netherlands, Tunisia, Russian Federation, USA, Vietnam, Alcatel-Lucent, Ericsson, Nokia Siemens Networks, Robert Bosch and Telecom Italia participated in the meetings. The tasks assigned to WG 5A5 address new technologies.

Twenty eight input contributions were attributed to WG 5A-5, which were:

|  |  |
| --- | --- |
| – Cognitive radio systems (CRS)(Q.241-2/5) | Documents [5A/45](http://www.itu.int/md/R12-WP5A-C-0045/en) (Annex 11) (WP 5A Chairman), [788](http://www.itu.int/md/R07-WP5A-C-0788/en) (Annex 9) (WP 5A Chairman), [26](http://www.itu.int/md/R12-WP5A-C-0026/en), [34](http://www.itu.int/md/R12-WP5A-C-0034/en) (USA), [35](http://www.itu.int/md/R12-WP5A-C-0035/en) (J), [41](http://www.itu.int/md/R12-WP5A-C-0041/en) (IEEE), [48](http://www.itu.int/md/R12-WP5A-C-0048/en) (WWRF Liaison Rapporteur), [49](http://www.itu.int/md/R12-WP5A-C-0049/en) (KOR), [53](http://www.itu.int/md/R12-WP5A-C-0053/en), [54](http://www.itu.int/md/R12-WP5A-C-00154/en), [55](http://www.itu.int/md/R12-WP5A-C-0055/en) (CHN), [60](http://www.itu.int/md/R12-WP5A-C-0060/en)(FIN), [61](http://www.itu.int/md/R12-WP5A-C-0061/en) (HOL), [62](http://www.itu.int/md/R12-WP5A-C-0062/en) (Telecom Italia, France Telecom Orange), [63](http://www.itu.int/md/R12-WP5A-C-0063/en), [64](http://www.itu.int/md/R12-WP5A-C-0064/en), [65](http://www.itu.int/md/R12-WP5A-C-0065/en)(Nokia Corporation, Nokia Siemens Networks, VTT) |
| – Intelligent transport system (ITS)(Q. 205-5/5) | Documents [5A/513](http://www.itu.int/md/R07-WP5A-C-0513/en) (Annex 14) (WP 5A Chairman), [37](http://www.itu.int/md/R12-WP5A-C-0037/en), [38](http://www.itu.int/md/R12-WP5A-C-0038/en) (J), [66](http://www.itu.int/md/R12-WP5A-C-0066/en) (Liaison Rapporteur on ITS Communication Standard Collaboration), [69](http://www.itu.int/md/R12-WP5A-C-0069/en) (Liaison Rapporteur #1) |
| – Agenda item 1.18 (WRC-15) | Documents [5A/33](http://www.itu.int/md/R12-WP5A-C-0033/en) (USA), [36](http://www.itu.int/md/R12-WP5A-C-0036/en) (J), [44](http://www.itu.int/md/R12-WP5A-C-0044/en) (RUS), [67](http://www.itu.int/md/R12-WP5A-C-0067/en) (D) |
| – Wireless Access Sensor Network (WASN)(Q. 250-1/5) | Documents [5A/795](http://www.itu.int/md/R07-WP5A-C-0795/en), [8](http://www.itu.int/md/R12-WP5A-C-0008/en) (ISO/IEC) |
| – Software Defined Radio (SDR) (Q.230‑3/5) | Document [5A/703](http://www.itu.int/md/R07-WP5A-C-0703/en) (Annex 20) (WP 5A Chairman), [745](http://www.itu.int/md/R07-WP5A-C-0745/en) (USA), [752](http://www.itu.int/md/R07-WP5A-C-0752/en) (Ericsson), [28](http://www.itu.int/md/R12-WP5A-C-0028/en) (Ericsson), [45](http://www.itu.int/md/R12-WP5A-C-0045/en) (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(Ms. Marja Matinmmikko, Finland) | * Update a working document toward a preliminary draft new Report ITU-R [LMS.CRS2]
* Develop a draft liaison statement to WPs 1B, 5B, 5C and 5D
* Develop a workplan 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 statements to ITU-T on collaboration on ITS communication standards WRC-15 Agenda item 1.18
* Develop a workplan on WRC-15 Agenda item 1.18
 |

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

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

Working Group 5A-5 considered fifteen input contributions. Based on the input contributions, WG 5A-5 developed a workplan for future CRS studies, taking into account ITU-R Resolution 58 and Question ITU-R 241-2/5. The workplan is attached as [Appendix 2](#app2) to this annex. WG 5A‑5 also discussed the direction of the development of the working document, considering ITU-R Resolution 58 and Question ITU-R 241-2/5. The discussion on the direction will be continued at the 10th meeting of WP 5A in November, taking into account the progress of work and the contents in the working document. WG 5A‑5 developed a liaison statement to relevant WPs within ITU-R, including those in SG 5, on further studies on CRS requesting the WPs to provide their workplan for CRS if any (Document 5A/TEMP/42(Rev.1)).

WG 5A‑5 further developed the working documents towards a preliminary draft new Report (PDNR) M.[LMS.CRS2] on cognitive radio systems (Document 5A/TEMP/46). The issues for further study are indicated by editor’s notes in the working document. Contributions are invited to solve these issues in the working document.

WG 5A-5 was tasked to update the working document towards a preliminary draft revised Recommendation ITU-R M.1797 / New Recommendation ITU-R M.[5A/VOC]. The definitions of CRS and TV white space were added according to Reports ITU-R SM.2152 and ITU-R M.2225 (Document 5A/TEMP/34(Rev.1)).

In the meeting, WWRF (Wireless World Research Forum) liaison rapporteur introduced recent activities of WWRF ([Document 5A/66](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0066!!MSW-E)). The WWRF’s 2020 vision were presented and its recent activities of 27th and 28th meetings were also introduced. WG 5A-5 noted WWRF’s interesting activities, in particular, in the area of CRS.

## 5.2 Intelligent transport system (ITS)

Working Group 5A-5 considered eight 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/33), and (2) the working document towards a preliminary draft revision of Report ITU-R M.2228 on advanced ITS radiocommunications (Document 5A/TEMP/32). The documents have been carried forward to the next WP 5A meeting for further development.

WG 5A-5 developed a liaison statement to ITU-T on Collaboration on ITS communication standards which invited contributions to advance this work by submitting relevant studies (including any systems and technical characteristics, as well as Human-to-Machine (HMI) interface issues between the radar and the driver) prior to the next meeting of WP 5A (Document 5A/TEMP/35).

WG 5A-5 had co-located meetings with relevant Sub WG of WP 5B on Agenda item 1.18. The meeting found that co-located meetings had a merit in efficient information exchange and development of the related documents, rather than exchanging information through liaison statements between the two WPs. The meeting developed a workplan for WRC-15 Agenda item 1.18 (Document 5A/TEMP/31).

There was an input contribution which proposed the possible change of the status of Question ITU‑R 205-5/5 since WG 5A-5 was assigned a task to develop systems characteristics of automotive Radars operating in the band 76‑81 GHz for WRC-15 Agenda item 1.18. The meeting discussed and decided that the change of the status of the Question was not required, recognising the wider scope of the Question.

WG 5A-5 received a Liaison statement from ITU-R WP 5C ([Document 5A/76](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0076!!MSW-E)) seeking a guidance on appropriate technical and operating characteristics of vehicular radars for the bands 76-77 GHz and 77-81 GHz in time for WP 5C’s November 2012 meeting, especially those that may vary from, or not have been included in, Recommendation ITU-R M.1452-1. The meeting decided to work on this issue at the 10th WP 5A meeting in November 2012 and will reply to WP5C in time for its November meeting. WG 5A-5 invites administrations and sector members to provide related information on this topic by submitting contributions to the 10th WP 5A meeting. The meeting added this issue on its future work plan.

## 5.3 Wireless access sensor network (WASN) system

Working Group 5A-5 considered two liaison statement from ISO/IEC and developed a liaison statements back to ISO/IEC, which informed ISO/IEC of the completion of WP 5A’s initial work on WASN (Report ITU-R M.2224 and Recommendation ITU-R M.2002) and the revised Question ITU-R 250-1/5, which newly includes Machine-to-Machine communication issue (Documents 5A/TEMP/36). In the liaison statement, WG 5A-5 also informed ISO/IEC that provided materials pertinent to WASN would be considered at a future occasion of revising or developing ITU-R Report and/or Recommendation.

## 5.4 Software Defined Radio (SDR)

Working Group 5A-5 received two input contribution on the revision of Report ITU-R M.2117 to the 9th WP 5A meeting. Based on these contributions and two carried-forward contributions, WG 5A-5 further developed the working document towards a preliminary draft revision of Report ITU-R M.2117 (Document 5A/TEMP/41). WG 5A-5 also developed a liaison statement to WP 5D on the revision of SDR Report to invite WP 5D an input contribution on the sections pertinent to IMT in the revision of Report ITU-R M.2117 (Document 5A/TEMP/43).

## 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. 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.

As work on Agenda item 1.18, WG 5A-5 also continues 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.

WG 5A-5 also plans to develop a liaison statement in response to a liaison statement from WP 5C which requesting a guidance on appropriate technical and operating characteristics of vehicular 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 Chairs Ms. Marja Matinmikko and Mr. Satoshi Oyama for their excellent chairmanship and all participants for their contribution to work of the group. The Chairman also expresses his appreciation to Ms. Gabrielle Owen for her excellent drafting work of a liaison statement on WASN.

**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

 [Appendix 2](#app2) – Workplan 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**

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 Agenda item 1.3 may include the development of new Recommendations and/or Reports.

Recommendations

**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 Agenda item 1.3 work.

2) Consider possible suppression or revision.

**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 Agenda item 1.3.

2) Suggest no further revision needed under 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 Agenda item 1.3, appears to address broadband already.

2) Suggest no further revision needed under Agenda item 1.3; possible further review based on CPM text.

**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 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 Agenda item 1.3.

2) Already under revision.

**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 Agenda item 1.3.

2) Possible revision to address broadband characteristics.

Reports

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



1) Not relevant to Agenda item 1.3.

2) Is there still a need for this document in light of Report ITU-R M.2014? Consider possible suppression.

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



1) Not relevant to Agenda item 1.3.

2) Is there still a need for this document in light of Report ITU-R M.2014? Consider inclusion in Report ITU-R M.2014.

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

1) Not relevant to Agenda item 1.3.

2) Already under revision.

**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 Agenda item 1.3.

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

Handbooks

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

TBD

Appendix 2 to Annex 3

Workplan for further studies on cognitive radios systems (CRS)

|  |  |
| --- | --- |
| **Title** | Work plan for further studies on CRS |
| **Document type** | Report(s) |
| **WP 5A Lead Group** | WG New Technologies  |
| **SWG Chair** | 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)**1. Review Question ITU-R 241-2/5 and Resolution ITU-R 58 and identify items to be studied.
2. Develop a workplan for further studies on CRS.
3. Review and revise the working document towards [LMS.CRS2].
4. Prepare liaisons to relevant ITU-R Groups and other appropriate external organisations, as necessary.

**Meeting No. 2 (November 2012)**1. Consider the received input contributions related to the scope of work.
2. Review and revise the working document towards [LMS.CRS2].
3. Review and revise workplan as necessary.
4. Prepare liaisons to relevant ITU-R Groups and other appropriate external organisations, as necessary.

**Meeting No. 3 (May, 2013)**1. Consider the received input contributions related to the scope of work.
2. Review and revise workplan as necessary.
3. Prepare liaisons to relevant ITU-R Groups and other appropriate external organisations, as necessary.

**Meeting No.  4 (November 2013)**1. Consider the received input contributions related to the scope of work.
2. Review and revise workplan as necessary.
3. Prepare liaisons to relevant ITU-R Groups and other appropriate external organisations, as necessary.

**Meeting No. 5 (May 2014)**1. Consider the received input contributions related to the scope of work.
2. Review and revise workplan as necessary.
3. Prepare liaisons to relevant ITU-R Groups and other appropriate external organisations, as necessary.

**Meeting No. 6 (November 2014)** |