|  |  |
| --- | --- |
| **Radiocommunication Study Groups** |  |
|  |  |
|  |  |
| Source: Documents 5A/TEMP/180, 184R1, 191, 193, 196, 200 and 202 | **Annex 3 toDocument 5A/421-E** |
| **5 December 2013** |
| **English only** |
| Annex 3 to Working Party 5A Chairman’s Report |
| consolidation of reports from the working groupsof working party 5a |
|  |

CONTENTS

[1](#s1) [Working Group 5A-1 – Amateur and amateur-satellite services](#s1)
(Chairman: Mr Dale Hughes, Australia)

[2](#s2) [Working Group 5A-2 – Systems and standards](#s2)
(Chairman: Mr Lang Baozhen, China)

[3](#s3) [Working Group 5A-3 – Public protection and disaster relief](#s3)
(Chairman: Ms Amy Sanders, USA)

[4](#s3) [Working Group 5A-4 – Interference and sharing](#s4)
(Chairman: Mr Michael Kraemer, Germany)

[5](#s4) [Working Group 5A-5 – New technologies](#s5)
(Chairman: Mr Hitoshi Yoshino, Japan)

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

[Attachment 2](#app2): Terms of reference of the Correspondence Group on N+W parts of the Report ITU-R M.[PPDR]

[Attachment 3](#app3): Workplan for further studies on cognitive radios systems (CRS)

[Attachment 4](#app4): Work plan for the development of a new recommendation ITU-R M.[V2X]
on Vehicle to vehicle and vehicle to infrastructure communication.

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 21](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0421!N21!MSW-E) of [Doc. 5A/421](http://www.itu.int/md/R12-WP5A-C-0421/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 Dale Hughes, Australia)

Working Group 5A-1 met eleven times during this block of meetings, considered fifteen input documents, and completed its work. The input documents assigned were:

|  |  |
| --- | --- |
| **AI 1.4 (~5 300 kHz)** | [306](http://www.itu.int/md/R12-WP5A-C-0306/en) [Annex 4](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N04!MSW-E) and [Annex 5](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N05!MSW-E) (WP 5A); [360](http://www.itu.int/md/R12-WP5A-C-0360/en) (USA); [366](http://www.itu.int/md/R12-WP5A-C-0366/en) (Canada); [383](http://www.itu.int/md/R12-WP5A-C-0383/en), [384](http://www.itu.int/md/R12-WP5A-C-0384/en) (Russian Federation) |
| **ITU-R Reports** | [306](http://www.itu.int/md/R12-WP5A-C-0306/en) [Annex 10](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N10!MSW-E) (WP 5A); [321](http://www.itu.int/md/R12-WP5A-C-0321/en), [322R1](http://www.itu.int/md/R12-WP5A-C-0322/en) (WP 3L); [359](http://www.itu.int/md/R12-WP5A-C-0359/en) (USA); [367](http://www.itu.int/md/R12-WP5A-C-0367/en), [368](http://www.itu.int/md/R12-WP5A-C-0368/en) (Canada); [382](http://www.itu.int/md/R12-WP5A-C-0382/en) (Russian Federation); [389](http://www.itu.int/md/R12-WP5A-C-0389/en) (China); [400](http://www.itu.int/md/R12-WP5A-C-0400/en) (IARU); |

The previous Draft CPM text [Annex 4](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N04!MSW-E) became the basis for updated draft CPM text, which now includes two methods. Documents 5A/[360](http://www.itu.int/md/R12-WP5A-C-0360/en) (USA), 5A/[366](http://www.itu.int/md/R12-WP5A-C-0366/en) (Canada) and 5A/[384](http://www.itu.int/md/R12-WP5A-C-0384/en) (Russian Federation) were considered and incorporated into the updated draft CPM text in Document 5A/temp/165, which is to be carried forward for further work to be completed at the May 2014 meeting.

Liaison statements from WP 3L (Documents 5A/[321](http://www.itu.int/md/R12-WP5A-C-0321/en) and 5A/[322R1](http://www.itu.int/md/R12-WP5A-C-0322/en)) were reviewed and noted.

The working document toward a preliminary draft new compatibility report relating to WRC-15 agenda item 1.4 ([Annex 10](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N10!MSW-E)) became the basis of further work. Documents 5A/[359](http://www.itu.int/md/R12-WP5A-C-0359/en) (USA), 5A/[367](http://www.itu.int/md/R12-WP5A-C-0367/en) (Canada), 5A/[382](http://www.itu.int/md/R12-WP5A-C-0382/en) (Russian Federation), and 5A/[389](http://www.itu.int/md/R12-WP5A-C-0389/en) (China) were considered and incorporated into a revised working document toward a preliminary draft new report. The resulting document, 5A/TEMP/195 [5 MHz COMPAT], is to be carried forward for further work.

In addition to these documents, a [liaison statement from Working Party 5C](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R12-WP5C-131118-TD-0133) was received after
WP 5C’s closing plenary, but before the assignment of a 5A document number. This statement was provided after discussion about study methodology for agenda item 1.4, and this document will have a direct bearing on the compatibility studies prepared by administrations for the May 2013
WP 5A meeting.

Three input contributions covered compatibility with other services. Document 5A/[400](http://www.itu.int/md/R12-WP5A-C-0400/en) (IARU) presented elements of a compatibility study between the proposed amateur service allocation and the aeronautical mobile (R) service operating between 5 450 and 5 480 kHz. Document 5A/[383](http://www.itu.int/md/R12-WP5A-C-0383/en) (Russian Federation) presented a compatibility study which considered the impact of the primary fixed service on the proposed secondary amateur service. Document 5A/[368](http://www.itu.int/md/R12-WP5A-C-0368/en) (Canada) presents a compatibility study between the oceanographic radar service operating between 5 250 and
5 275 kHz. These three documents are attached to Document 5A/TEMP/195 [5 MHz COMPAT].

WG 5A-1 reviewed Documents [5A/335](http://www.itu.int/md/R12-WP5A-C-0335/en) (Working Party 7C), [5A/351](http://www.itu.int/md/R12-WP5A-C-0351/en) (ITU-T Study Group 9), and [5A/328](http://www.itu.int/md/R12-WP5A-C-0328/en) (ITU-T Study Group 15) and provided material relevant to the amateur and amateur-satellite services to Working Group 5A-4 for incorporation in reply liaison statements. The material is reflected in output Documents 5A/TEMP/187, 186 & 175.

WG 5A-1 has produced a liaison statement to keep other Working Parties informed of our work and progress. This document is Document 5A/TEMP/194.

WG5A-1 has reviewed and revised our work plan (Doc. 5A/[306](http://www.itu.int/md/R12-WP5A-C-0306/en), Annex 5) to take account of progress to date. The revised work plan is Document 5A/TEMP/197.

During the mid-meeting WP 5A plenary, there was a request to produce a summary of changes to Amateur Services Handbook Document 5A/TEMP/166. The changes were:

• Additional text added to forward section (approved May 2013 meeting).

• Updated list of amateur satellites (approved May 2013 meeting).

• Addition of new WRC-12 Radio Regulations (approved May 2013 meeting).

• Addition of new amateur service bands to table 2.1 and 3.1 post WRC-07 and WRC-12 (approved May 2013 meeting).

• Modification of tables 2.1 & 3.1 which list all the amateur and amateur satellite service frequency bands, their typical characteristics and usage (approved May 2013 meeting).

• Alignment of tables 2.1 & 3.1 to improve readability.

• Inclusion of new call-sign series to ‘Appendix **42 (Rev.WRC-12)** Table of allocation of international call sign series’. The added call sign blocks were approved post WRC-12.

• Addition of several new ITU reports & recommendations of relevance to the amateur service.

• Updating text in chapter 8 related to emergency and disaster relief communication and links to ITU-D documents.

• A small number of minor editorial changes to correct spelling and grammar.

The chair enjoyed working with all the delegates and is grateful for their thoughtful input contributions and general goodwill.

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

Working Group 5A-2 met four times at the twelfth meeting of WP 5A in Geneva with approximately 30 delegates in attendance. Working Group 5A-2 received the 23 documents remanded by the WP 5A Plenary as follows:

|  |  |
| --- | --- |
|  | Documents |
| 2.1 Wireless Gigabit Networks | [306](http://www.itu.int/md/R12-WP5A-C-0306/en) [Annex 17](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N17!MSW-E) and [Annex 18](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N18!MSW-E) (WP 5A) |
| 2.2 Broadband Wireless Access | [311](http://www.itu.int/md/R12-WP5A-C-0311/en) (WP 5C); [325](http://www.itu.int/md/R12-WP5A-C-0325/en), [327](http://www.itu.int/md/R12-WP5A-C-0327/en) (WP 5D); [345](http://www.itu.int/md/R12-WP5A-C-0345/en) (SG 6); [378](http://www.itu.int/md/R12-WP5A-C-0378/en) (Japan) |
| 2.3 ATG | [Annex 12](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N12!MSW-E) (WP 5A); [364](http://www.itu.int/md/R12-WP5A-C-0364/en) (France); [377](http://www.itu.int/md/R12-WP5A-C-0377/en) (Japan) |
| 2.4 Update of Rec. ITU-R M.1450 | [306](http://www.itu.int/md/R12-WP5A-C-0306/en) [Annex 15](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N15!MSW-E) (WP 5A) |
| 2.5 Update of Rec. ITU-R F.1763 | [306](http://www.itu.int/md/R12-WP5A-C-0306/en) [Annex 16](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N16!MSW-E) (WP 5A); [365](http://www.itu.int/md/R12-WP5A-C-0365/en) (XGP Forum); [376](http://www.itu.int/md/R12-WP5A-C-0376/en) (Japan) |
| 2.6 AI 9.1.6 (Def. Res. 957) | [318](http://www.itu.int/md/R12-WP5A-C-0318/en) (WP 1B) |
| 2.7 ITU-T (Energy, ANTS, etc.) | [329](http://www.itu.int/md/R12-WP5A-C-0329/en) (ITU-T SG 15) |
| 2.8 Hearing aids | [306](http://www.itu.int/md/R12-WP5A-C-0306/en) [Annex 13](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N13!MSW-E) and [Annex 14](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N14!MSW-E) (WP 5A); [338](http://www.itu.int/md/R12-WP5A-C-0338/en), [339](http://www.itu.int/md/R12-WP5A-C-0339/en) (ITU-T JCA-AHF); [356](http://www.itu.int/md/R12-WP5A-C-0356/en), [357](http://www.itu.int/md/R12-WP5A-C-0357) (USA) |
| 2.9 ENG | [373](http://www.itu.int/md/R12-WP5A-C-0373/en) (Canada) (M.1824 part) |

Working Group 5A-2 set up four drafting groups to deal with Air-to-Ground (ATG) communication systems, revision of Recommendation ITU-R F.1763, Hearing aids and Small cell issue respectively.

• DG5A2-1 ATG Mr. Guanghan Xu

• DG5A2-2 F.1763 Dr. Shinya Otsuki

• DG5A2-3 Hearing Aids (M.1076) Mr. Brian Copsey

• DG5A2-4 Small cell Dr. Hitoshi Yoshino

## 2.1 Wireless Gigabits networks

Regarding wireless gigabits networks, Working Party 5A received no contribution on the revisions to Recommendation ITU-R M.2003 and Report ITU-R M.2227.

ITU-R Working Party 5A-2 further considered the revision process for update of Recommendation ITU-R M.2003, Multiple Gigabit Wireless Systems (MGWS) in frequencies around 60 GHz, and its companion Report ITU-R M.2227.

Given that no further contributions were received on these two documents and the material is in reasonably stable state, ITU-R Working Party 5A has elevated the status of the working documents to preliminary draft revision of Report (in the case of M.2227) and preliminary draft revision of Recommendation (in the case of M.2003) and intends to finalize the above documents at its next meeting. A liaison (5A/TEMP/160R1) was developed to inform external organizations.

## 2.2 Broadband Wireless Access

The meeting considered 6 Documents 5A/[311](http://www.itu.int/md/R12-WP5A-C-0311/en) (WP 5C), 5A/[325](http://www.itu.int/md/R12-WP5A-C-0325/en), 5A/[327](http://www.itu.int/md/R12-WP5A-C-0327/en) (WP 5D), 5A/[345](http://www.itu.int/md/R12-WP5A-C-0345/en) (SG 6) and 5A/[378](http://www.itu.int/md/R12-WP5A-C-0378/en) (Japan).

A liaison statement (Doc. 5A/[311](http://www.itu.int/md/R12-WP5A-C-0311/en)) of WP 5C inform WP 5A that WP 5C has initiated work towards the development a draft new Report ITU-R F.[FS.IMT/BB] “Fixed service backhaul networks for IMT and other terrestrial mobile broadband systems”. Working Party 5A-2 reviewed the document and developed a reply liaison statement (Doc. 5A/TEMP/189) to WP 5C. Working Party 5A notes that WP 5C seeks input on the topology/configurations of terrestrial mobile broadband networks and backhaul network capacity requirements to address the significant increase in user traffic, which has put substantial demands on the transport network. In order to assist WP 5C in developing its new ITU-R Report on fixed service backhaul networks, WP 5A has identified chapter 6 of [Land Mobile Handbook (including Wireless Access) Volume 5 – Deployment of Broadband Wireless Access Systems](http://www.itu.int/pub/publications.aspx?lang=en&parent=R-HDB-57) ”System Topologies / Architecture” on the topic.

A liaison (Doc. 5A/[325](http://www.itu.int/md/R12-WP5A-C-0325/en)) from 5D regarding use of spectrum and radio technology low cost sustainable telecommunication infrastructure for rural communications in developing countries was reviewed by Working Group 5A-2. Because the liaison is just information for WP 5A, the meeting did not consider any replies.

A liaison (Doc. 5A/[327](http://www.itu.int/md/R12-WP5A-C-0327/en)) from 5D regarding on development of a draft new Report ITU-R F.[FS.IMT/BB] was reviewed by Working Group 5A-2. Because the liaison is just information for WP 5A, the meeting did not consider any replies.

Working Group 5A-2 took note of the information provided by SG 6 on Question ITU-R 136-2/6 – Worldwide broadcasting roaming (Doc. 5A/[345](http://www.itu.int/md/R12-WP5A-C-0345/en)) and did not see the need for further action at this point in time.

The contribution 5A/[378](http://www.itu.int/md/R12-WP5A-C-0378/en) from Japan proposed to develop a Working Document towards a preliminary draft new recommendation “Working document on Operational guidelines for the deployment of broadband mobile systems for local coverage in the frequency bands below 6 GHz”. The meeting disagreed to develop a recommendation at this point. After discussion, the meeting agreed to develop a working document based on the Japanese contribution. Then the working document was further developed and was attached to WP 5A Chairmen Report for consideration at next meeting. The working document is 5A/TEMP/182R1. Regarding to the development of liaison statement to external organizations and WP 5A, because the scope and some key vocabulary such as “local coverage” were not clarified, the meeting decided to not send a liaison statement at this meeting.

## 2.3 ATG

With regard to ATG, DG5A-2-1 ATG finalized the work based on the input contributions from France and Japan. The meeting reached an agreement to finalize the work at this WP 5A meeting and suppress [Report ITU-R M.1051](http://www.itu.int/pub/R-REP-M.1051) “Public mobile telephone service with aircraft”. The output document on ATG is 5A/TEMP/162R1**.**

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

No further contribution was received on the revision Recommendation ITU-R M.1450 at this WP 5A meeting. Working Group 5A-2 agreed to submit the document to WP 5A Plenary for approval.

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

Working Group 5A-2 received two contributions 5A/[365](http://www.itu.int/md/R12-WP5A-C-0365/en) (XGP Forum) and 5A/[376](http://www.itu.int/md/R12-WP5A-C-0376/en) (Japan) on revision work of Rec. ITU-R F.1763.

Based on the contributions, the working document towards a preliminary draft revision of Recommendation ITU-R M.1763was further developed. Working Group 5A-2 believed it is mature enough and agreed to submit it to WP 5A Plenary for approval. And a liaison statement(5A/TEMP/188R1) was developed to inform WP 5D on this issue.

## 2.6 Agenda item 9.1.6 (Def. Res. 957)

A liaison from WP 1B regarding Studies towards review of the definitions of fixed service, fixed station and mobile station was considered.

Working Group 5A-2 has also reviewed the liaison statement from Working Party 5D (Document 1B/99). Working Group 5A-2 concurs with WP 5D that it is not aware of any issues with the current definition of the mobile station and sees no necessity for any changes to the definition of the mobile station in response to WRC-15 agenda item 9.1.6. A liaison was developed which is Document 5A/TEMP/158R1.

## 2.7 ITU-T (Energy, ANTS, etc.)

Working Group 5A-2 received a liaison statement from ITU-T SG 15. WG 5A-2 took note of the information provided by ITU-T SG 15 regarding new versions of the access network transport (ant) standardization overview and work plan and Working Group 5A-2 did not see the need for further action at this point in time.

## 2.8 Hearing aids

The meeting considered 6 Documents 5A/[306](http://www.itu.int/md/R12-WP5A-C-0306/en) [Annex 13](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N13!MSW-E) and [Annex 14](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N14!MSW-E) (WP 5A), 5A/[338](http://www.itu.int/md/R12-WP5A-C-0338/en), 5A/[339](http://www.itu.int/md/R12-WP5A-C-0339/en) (ITU-T JCA-AHF), 5A/[356](http://www.itu.int/md/R12-WP5A-C-0356/en) and 5A/[357](http://www.itu.int/md/R12-WP5A-C-0357) (USA).

A Liaison statement from JCA-AHF thanks WP 5A for appointing a representatives at their last meeting and noting the response from WP 5D on its spectrum proposals.

The meeting did not consider any replies where needed by WP 5A.

Document 5A/357 from the USA proposed a number of improvements to Document 5A/306 Annex 13, after discussion these where agreed by the meeting. Further inputs are expected from Korea and other Members are invited to input their frequency allocations for hearing aids for inclusion in the report. ITU-R Working Party 5A has elevated the status of the working document to preliminary draft revision .The output document is 5A/TEMP/157.

Document 5A/356 from the USA proposed a number of improvements to Document 5A/306 Annex 14. After careful consideration and discussion the changes where approved.

The Drafting Group believed the document is mature enough to go to the next stage and requests WP 5A to approve it and submit to SG 5 for approval. The document is 5A/TEMP/156R1.

## 2.9 ENG

Document 5A/[373](http://www.itu.int/md/R12-WP5A-C-0373/en) (Canada) was assigned to WG 4. As required by WP 5A Chair, Working Group WP 5A-2 also reviewed the contribution especially the Recommendation ITU-R M.1824 part and did not receive comments at this point.

## 2.10 Review of ITU-R texts

Working Group 5A-2 reviewed the WP 5A texts (Section 1 of [Annex 1](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N01!MSW-E) to [Doc. 5A/306](http://www.itu.int/md/R12-WP5A-C-0306/en) and [Doc. 2/5(Rev.1)](http://www.itu.int/md/R12-SG05-C-0002/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 Vocabulary ([Annex 25](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0079!N25!MSW-E) to [Doc. 5A/79](http://www.itu.int/md/R12-WP5A-C-0079), Res. [33-3](http://www.itu.int/pub/R-RES-R.33/en), [34-3](http://www.itu.int/pub/R-RES-R.34/en), [35-3](http://www.itu.int/pub/R-RES-R.35/en), [36-3](http://www.itu.int/pub/R-RES-R.36/en)) provided by WP 5A Chairman. WP 5A chair provided a draft update of Annex 1 to the Chairman’s Report. Working Group 5A-2 did not have any further update at this meeting.

## 2.11 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 a preliminary draft revision of Recommendation ITU-R M.1076.

− Development of a preliminary draft revision of Recommendation ITU-R M.2003.

− Development of a preliminary draft revision of Report ITU-R M.2227.

− Development of a working document on Operational guidelines for the deployment of broadband mobile systems for local coverage in the frequency bands below 6 GHz.

## 2.12 Chairman’s closing remarks

Finally, Chairman of Working Group 5A-2 wishes to thank all participants of WG 2 for their contributions and cooperation and particularly thank DG Chairs Dr. Shinya OTSUKI, Mr. Guanghan Xu Mr. Brian Copsey and Dr. Hitoshi Yoshino for their good and efficient work.

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

# 3.1 Executive summary

Working Group 3 met on four occasions and considered 16 contributions to this meeting, six documents carried forward from previous meetings, and seven documents that were carried forward as Annexes to previous Chairman’s Reports. The input documents were related to WRC‑15 agenda items 1.3 and revisions of documents under the purview of WG 3. Two drafting groups conducted the majority of the work and produced five documents to be carried forward in the Chairman’s Report and two liaison statements.

# 3.2 Organization of the work

As outlined in Document [5A/306 Annex 3](http://www.itu.int/md/R12-WP5A-C-0306%21N03%21MSW-E), Working Group 3’s objectives for this meeting were to continue development of the following, based on input contributions:

1. continue development of the new Report on Broadband PPDR under agenda item 1.3 and the revision of Report ITU-R M.2033, and other Reports and Recommendations, as appropriate, based on input contributions;
2. continue development of working document toward a preliminary draft revision of Recommendation ITU-R M.2009, based on input contributions; and
3. continue development of the working document toward a preliminary draft revision of Recommendation ITU-R M.2015, based on input contributions;
4. continue development of CPM text for agenda item 1.3 based on the results of studies and input contributions.

No input contributions were received on the [Annex 19](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N19!MSW-E) of Document [5A/306](http://www.itu.int/md/R12-WP5A-C-0306/en) - The working document toward the 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)**”. The meeting agreed to carry forward [Annex 19](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N19!MSW-E) of Document [5A/306](http://www.itu.int/md/R12-WP5A-C-0306/en) along with Document [5A/273](http://www.itu.int/md/R12-WP5A-C-0273/en) for further consideration at the next meeting.

All input contributions were introduced at the Working Group level. The Disaster Relief Rapporteur’s Report (Doc. [5A/408](http://www.itu.int/md/R12-WP5A-C-0408/en)) was presented at the WP 5A Plenary. During the WP 5A Plenary, the Chairman called to the attention of WG 3 Document [1B/42](http://www.itu.int/md/R12-WP1B-C-0042/en) Annex 12, related to AI 9.1 Issue 9.1.7. The Chairman also tasked all WGs 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 and to identify any relevant vocabulary to share with the CCV.

A single contribution, [5A/370](http://www.itu.int/md/R12-WP5A-C-0370/en) from Canada, was received to advance the development of the working document toward the 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 (WRC-03)”. At the Working Group level, the meeting agreed to incorporate the revisions in 5A/370, propose elevation of the document to a preliminary draft revision as Document 5A/TEMP/159(Rev.1), and carry it forward as an Annex to the Chairman’s Report.

Two Drafting Group were established to address the other work items of the WG 3, as follows:

1. DG 5A3-1 PPDR Report under the leadership of Mr. Andy Gowans, UK.
2. DG 5A3-2 Agenda item 1.3 CPM text under the leadership of Mr. Charles Glass, USA.

Discussions were held at the Working Group level regarding the scope of work for DG 5A3-1 in order to focus the work of the drafting group. WG 3 agreed that DG 5A3-1 would proceed as follows:

* Develop a new report addressing narrowband, wideband, and broadband PPDR, with a view to suppress Report ITU-R M.2033 upon completion.
* Prioritize addressing the broadband section of the new report.
* Charter a ‘pre-editing activity’ that would take place offline and develop a single document based on the Annexes 20, 21, and 22 of the Chairman’s Report of the previous meeting combined with the relevant input contributions and carry-forward documents.
* Extract the narrowband and wideband material from Report ITU-R M.2033 and revise to include in the new report, as time permits at this meeting; consider the proposal to establish a Correspondence Group to advance the development of the narrowband and wideband section between the meetings.

# 3.3 Drafting Group activities

## 3.3.1 DG 5A3-1 PPDR Report

Drafting Group 5A3-1 (PPDR Report) met on nine occasions. DG PPDR Report was assigned 12 input contributions and five carry-forward documents by WG 3 as shown in the table below:

|  |  |
| --- | --- |
| **Update of Rep. ITU-R M.2033 / new Report** | [Annex 20](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N21!MSW-E), [Annex 21](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N21!MSW-E) and [Annex 22](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N22!MSW-E) of [5A/306](http://www.itu.int/md/R12-WP5A-C-0306/en) (WP 5A); [332](http://www.itu.int/md/R12-WP5A-C-0332/en) (APT); [337](http://www.itu.int/md/R12-WP5A-C-0337/en) (3GPP TSG RAN); [346](http://www.itu.int/md/R12-WP5A-C-0346/en) (WP 5D); [355](http://www.itu.int/md/R12-WP5A-C-0355/en) (USA); [369](http://www.itu.int/md/R12-WP5A-C-0369/en) (Canada); [372](http://www.itu.int/md/R12-WP5A-C-0372/en) (ATIS); [386](http://www.itu.int/md/R12-WP5A-C-0386/en) (CCSA); [387](http://www.itu.int/md/R12-WP5A-C-0387/en) (China); [394](http://www.itu.int/md/R12-WP5A-C-0394/en) (India); [399](http://www.itu.int/md/R12-WP5A-C-0399/en) (Germany); [402](http://www.itu.int/md/R12-WP5A-C-0402/en), [403](http://www.itu.int/md/R12-WP5A-C-0403/en) (Motorola Solutions)Documents carried forward related to the revision of Report ITU-R M.2033: Doc. [5A/244](http://www.itu.int/md/R12-WP5A-C-0244), [264](http://www.itu.int/md/R12-WP5A-C-0264), [270](http://www.itu.int/md/R12-WP5A-C-0270), [281](http://www.itu.int/md/R12-WP5A-C-0281), and [282](http://www.itu.int/md/R12-WP5A-C-0282)From Plenary: [5A/353](http://www.itu.int/md/R12-WP5A-C-0353) and WGET suggestion to remove their material from M.2033 |

In line with the instructions given at the working group level, the DG carried out the work to create a single working document toward a preliminary draft new Report ITU-R M.[PPDR]. The pre-editing exercise, described above, was carried out to take account of all the relevant input documents in a single document. The DG then reviewed the results of the pre-editing exercise to confirm that the single document took account of all the relevant input documents. It was noted that all of the relevant contributions had been addressed during this process, but that any input contribution could be referenced as needed during this study cycle.

The DG then reviewed the content of the single document and edited the document where necessary. During these discussions the group confirmed their support for the current structure of the report, particularly the division of the report into four parts:

* the first part would cover the generic objectives and requirements of PPDR;
* the second part would describe the objectives and requirements that can **only** be provided by broadband technologies;
* the third part would describe the objectives and requirement s that can **only** be provided by narrow/wide band technologies; and,
* the final part of the document would describe the particular needs of developing countries.

The DG’s review of the document was incomplete, as the group only managed to complete this exercise down to Section 7 of the document. Therefore, a note was inserted in the Report to highlight that the content of the text starting in Section 7 had not been agreed by the meeting, and that the content had only been looked at editorially to ensure that all of the relevant input contributions were addressed in the document.

As instructed by WG 3, DG 5A3-1 drafted Terms of Reference for the correspondence group activities in develop the narrowband and wideband section of the document (i.e., Part 3 of Document 5A/TEMP/190, the working document toward a preliminary draft new Report ITU-R M.[PPDR]). In consultation with DG 5A3-2, the DG also reviewed and updated the work plan for WRC–15 agenda item 1.3.

The results of the DG’s work are three documents that were agreed to be carried forward in Annexes to the WP 5A Chairman's Report:

1. Doc. 5A/TEMP/190 - Working document toward a PDNR ITU-R M.[PPDR]
2. Doc. 5A/TEMP/184(Rev.1) - Draft Terms of Reference for Correspondence Group on the narrowband and wideband sections of the working document toward a PDNR ITU-R M.[PPDR] (Attachment 2 to this Annex)
3. Doc. 5A/TEMP/185(Rev.1) - Workplan for AI1.3 (Developed in conjunction with DG 5A3-2)

## 3.3.2 DG 5A3-2 agenda item 1.3 CPM Text

The meeting received three contributions toward the development of CPM text for WRC-15 agenda item 1.3 as contained in Documents 5A/[393](http://www.itu.int/md/R12-WP5A-C-0393/en) (India), 5A/[401](http://www.itu.int/md/R12-WP5A-C-0401/en) (Motorola Solutions), and 5A/[404](http://www.itu.int/md/R12-WP5A-C-0404/en) (Israel).  The drafting group met twice and developed revised text for the CPM.

The drafting group revised the working document toward preliminary draft CPM text to reflect the agreement to address studies in sections 1/1.3/3 and 1/1.3/4 on a regional basis. For section 1/1.3/6, it was agreed to develop a single method for changes to Resolution **646 (Rev.WRC-12)** where options will be shown for those items where consensus cannot be reached. Editorial notes were developed throughout the document to call for further inputs as required.

WG 3 encouraged the participants to focus their attention on submitting text for the regional sections for the studies required for the agenda item, reduction of options in section 1/1.3/5 on Methods to Satisfy the Agenda Item, and section 1/1.3/6 which contains the required changes to Resolution **646 (Rev.WRC-12)** to allow for successful completion of draft CPM text at the next meeting of WP 5A.

The result of the work of the DG is reflected in Document 5A/TEMP/163(Rev.1), which will be carried forward as an Annex to the Chairman’s Report.

Following the work on the revision of CPM text, the DG reconsidered the CPM text-related elements of the workplan for agenda item 1.3 as contained in Document [5A/306, Annex 7](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N07!MSW-E).  These proposed revisions were transmitted to DG 5A3-1 for incorporation into the revised workplan (5A/TEMP/185(Rev.1)), which will also be carried forward as an Annex to the Chairman’s Report.

# 3.4 Other matters

## 3.4.1 Draft liaison statement to ITU-D Study Group 2 on the revision of Rec. ITU-R [F.1105](http://www.itu.int/rec/R-REC-F.1105/en)

At the request of the Chairman of WP 5A and the joint 5A-5C Adhoc, WG 3 considered the draft liaison statement to ITU-D Study Group 2 on the revision of Recommendation ITU-R F.1105 (Doc. 5A/TEMP/164). The meeting reviewed the document and sent it to WP 5A Plenary for approval as a joint LS from WP 5A and 5C.

## 3.4.2 Relevant Recommendations and Reports

WG 3 reviewed [Appendix 1 of Document 5A/198 Annex 3](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0198!N03!MSW-E), “Proposed course of action toward the review of Recommendations and Reports associated with work on WRC-15 agenda item 1.3” and made appropriate revisions. In line with the work done at this meeting, the WG agreed to suggest revisions to the text on Recommendation ITU-R F.1105 and Report ITU-R M.2033.

The meeting reviewed and revised the “Proposed course of action toward the review of Recommendations and Reports associated with work on WRC-15 agenda item 1.3” contained in [Attachment 1](#app1) to this Annex.

## 3.4.3 Administrative issues

WG 3 followed the Chairman’s instructions to consider the Texts, the Guide, the structure of the work in WP 5A, and [Vocabulary](http://www.itu.int/md/R12-WP5A-C-0079/en). No revisions were recommended.

With regard to work at the twelfth meeting of Working Party 5A, the objectives for Working Group 3 will be to:

* continue development of the new Report on narrowband, wideband and broadband PPDR based on input contributions;
* continue development of working document toward a preliminary draft revision of Recommendation ITU-R M.2009 based on input contributions;
* continue development of the working document toward a preliminary draft revision of Recommendation ITU-R M.2015 based on input contributions; and
* finalize draft CPM text for agenda item 1.3 based on the results of studies and input contributions.

The WG Chairman would like to thank Mr. Gowans and Mr. Glass for their leadership of the drafting groups and all the participants of Working Group 3 for their contributions and cooperative approach to the discussions.

**Attachments:**

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

[Attachment 2](#app2): Terms of reference of the Correspondence Group on N+W parts of the Report ITU-R M.[PPDR]

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

# 4.1 Executive Summary

WG 5A-4 initiated a revision of Recommendation ITU-R M.1824, continued the development of PDNR ITU-R M.[MS 14.5-15.35 CHAR], completed the revision of Report ITU-R M.2116, provided information on mitigation techniques on RLAN as requested by JTG 4-5-6-7, developed reply liaison statements to a number of Working Parties on various WRC-15 agenda items and provided feedback to ITU-T Study Groups 9 and 15 on Recommendations ITU-T G.fast and ITU-T J.HiNoC.

# 4.2 Introduction

Working Group 5A-4 met five times during the November 2013 meeting of Working Party 5A. WG 5A-4 considered 38 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/18 as well as late input contributions received during the course of the meeting.

## 4.3.1 Revision of Recommendation ITU-R F.1336

Input documents: [5A/326](http://www.itu.int/md/R12-WP5A-C-0326/en) and [5A/347](http://www.itu.int/md/R12-WP5A-C-0347/en) (WP 5D); [5A/396](http://www.itu.int/md/R12-WP5A-C-0396/en) (Ericsson)

Output document: 5A/TEMP/183(Rev.1) (Joint LS to WP 5D)

As decided at the joint WP 5A / WP 5C session during this WP 5A meeting, WP 5C took the lead in further developing the revision of Recommendation ITU-R F.1336 based on the input contributions received and WP 5A experts participated in the work. The revision was completed at this meeting and will be sent to SG 5 for approval by WP 5C.

A joint liaison statement from WP 5A and WP 5C was developed to WP 5D (copy to JTG 4-5-6-7) to inform them about the finalisation of the revision of Recommendation ITU-R F.1336.

## 4.3.2 Unwanted emissions in the out-of-band domain

Input document: [5A/334](http://www.itu.int/md/R12-WP5A-C-0334/en) (SG 1)

WG 5A-4 took note of the information provided by SG 1 on Recommendation ITU-R SM.1541-5 - “Unwanted emissions in the out-of-band domain” and did not see the need for further action at this point in time.

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

Output document: 5A/TEMP/168(Rev.1) (Revised Report)

WG 5A-4 finalised the revision of the report based on the version that had been attached to the Chairman’s Report from the 10th meeting of WP 5A (Annex 19 to Document [5A/198](http://www.itu.int/md/R12-WP5A-C-0198/en)). As no inputs had been received on this revision for the last two WP 5A meetings proposing further changes, the revision was considered stable and it was agreed to suggest to the WP 5A plenary to forward this revision to SG 5 for approval.

## 4.3.4 Cross-border coordination handbook

Input documents: [5A/350](http://www.itu.int/md/R12-WP5A-C-0350/en) (Chairman JCG 5A/5C); [5A/385](http://www.itu.int/md/R12-WP5A-C-0385/en) (Russian Federation)

WG 5A-4 took note of the report from the chairman of the JCG as in Document 5A/350 and agreed with the proposal in Document 5A/385 to focus the further development of this handbook on the fixed service and to remove the section addressing the land mobile service. This proposal was subsequently endorsed at the joint WP 5A / WP 5C session so that the future work on this handbook will fall under the sole responsibility of WP 5C.

## 4.3.5 Electronic News Gathering (ENG)

Input documents: [5A/307](http://www.itu.int/md/R12-WP5A-C-0307/en) and [5A/310](http://www.itu.int/md/R12-WP5A-C-0310/en) (WP 5C); [5A/373](http://www.itu.int/md/R12-WP5A-C-0373/en) (Canada); [5A/413](http://www.itu.int/md/R12-WP5A-C-0413/en) (Chairman WP 5C)

Output documents: 5A/TEMP/172 (Working doc. revision M.1824); 5A/TEMP/173(Rev.1) (LS to WPs 5C, 5D and 6A)

WG 5A-4 took note of the information provided by WP 5C in Documents 5A/307 and 5A/310 regarding their ongoing work with respect to ENG (both on the preliminary draft new Report ITU-R F.[ENGSHAREDEPLOYMENT] as well as on the revision of Recommendation ITU-R F.1777) and did not see a need for comments at this point in time as the specific requests for comments were mainly addressed to WP 7B.

WG 5A-4 agreed with the proposal in Document 5A/373 to initiate a revision of Recommendation ITU-R M.1824 on system characteristics of television outside broadcast, electronic news gathering and electronic field production in the mobile service for use in sharing studies and developed a working document towards a revised Recommendation to be attached to the Chairman’s Report for further work at the next WP 5A meeting.

Furthermore, a liaison statement was developed to WPs 5C, 5D and 6A to inform them, that a revision of this Recommendation is now under development in WP 5A and to request input as appropriate to the next meeting of WP 5A.

Finally, WG 5A-4 took note of the information provided by the Chairman of WP 5C in Document 5A/413 regarding the discussions within WP 5C on the format for an ENG database and did not see the need for further action on this item at this WP 5A meeting but encouraged interested members of WP 5A to follow the discussions in WP 5C on this matter.

## 4.3.6 PLT interference and related liaison activity with ITU-T

Input documents: [5A/314](http://www.itu.int/md/R12-WP5A-C-0314/en); [5A/315](http://www.itu.int/md/R12-WP5A-C-0315/en); [5A/316](http://www.itu.int/md/R12-WP5A-C-0316/en) and [5A/317](http://www.itu.int/md/R12-WP5A-C-0317/en) (WP 1A); [5A/324](http://www.itu.int/md/R12-WP5A-C-0324/en) (WP 5D); [5A/328](http://www.itu.int/md/R12-WP5A-C-0328/en) (ITU‑T SG15); [5A/351](http://www.itu.int/md/R12-WP5A-C-0351/en) (ITU-T SG9); [5A/414](http://www.itu.int/md/R12-WP5A-C-0414/en) and [5A/415](http://www.itu.int/md/R12-WP5A-C-0315/en) (WP 6A)

Output documents: 5A/TEMP/186(Rev.1) (LS to ITU-T SG15); 5A/TEMP/187(Rev.1) (LS to ITU‑T SG9)

WG 5A-4 took note of the information provided by WP 1A to ITU-T in Documents 5A/314, 5A/316 and 5A/317 and did not see a need to comment on this.

Regarding the request from WP 1A in Document 5A/315 to name a contact point for the Working Party 1A Rapporteur Group on *Coexistence of wired telecommunication with radiocommunication systems* it had been decided in the joint WP 5A / WP 5C session to nominate a joint contact and that a liaison statement back to WP 1A would be developed in WP 5C.

WG 5A-4 took note of the information provided by WP 5D to ITU-T SG13 in Document 5A/324 and did not see a need to comment on this.

As agreed at the joint WP 5A / WP 5C session, joint reply liaisons were developed to ITU-T SG15 (in response to Document 5A/328) and to ITU-T SG9 (in response to Document 5A/351) also incorporating comments as provided by WG 5A-1 on the amateur and amateur-satellite service.

WG 5A-4 took also note of the reply liaisons from WP 6A to WP 1A and ITU-T SG9 as in Document 5A/414 and to WP 1A and ITU-T SG15 as in Document 5A/415.

## 4.3.7 WRC-15 agenda item 1.1

Input documents: [5A/312](http://www.itu.int/md/R12-WP5A-C-0312/en) (WP 5B); [5A/323](http://www.itu.int/md/R12-WP5A-C-0323/en) (WP 5D); [5A/331](http://www.itu.int/md/R12-WP5A-C-0331/en) (IMO); [5D/348](http://www.itu.int/md/R12-WP5A-C-0348/en) (WP 5D); [5A/349](http://www.itu.int/md/R12-WP5A-C-0349/en) (JTG 4-5-6-7); [5A/374](http://www.itu.int/md/R12-WP5A-C-0374/en) (Cisco and Motorola Mobility); [5A/398](http://www.itu.int/md/R12-WP5A-C-0398/en) (Intel)

Output document: 5A/TEMP/169(Rev.1) (LS to JTG 4-5-6-7)

WG 5A-4 took note of the information contained in the various inputs from Working Parties 5B, 5D and the IMO and did not see a need to comment on these.

A reply liaison statement to JTG 4-5-6-7 was developed in a Drafting Group chaired by Laboni Patnaik (USA) based on the input contributions received, to provide information on mitigation techniques for RLAN as requested in Document 5A/349.

## 4.3.8 WRC-15 agenda item 1.6

Input documents: [5A/308](http://www.itu.int/md/R12-WP5A-C-0308/en) (WP 5C); [5A/343](http://www.itu.int/md/R12-WP5A-C-0343/en) (WP 4A); [5A/363](http://www.itu.int/md/R12-WP5A-C-0363/en) (USA)

Output documents: 5A/TEMP/170 (PDNR); 5A/TEMP/171 (LS to WP 4A)

WG 5A-4 took note of the information provided by WP 5C to WP 7B on the revision of Recommendation ITU-R SA.1626 as in Document 5A/308 and did not see a need to comment on this.

Based on Document 5A/363, WG 5A-4 further progressed the development of the preliminary draft new [Report/Recommendation] ITU-R M.[MS 14.5-15.35 CHAR] as contained in Annex 23 of the Chairman’s Report of the last WP 5A meeting in a Drafting Group chaired by Brandon Mitchell (USA) and agreed to further work on this as a preliminary draft new Recommendation. The PDNR is attached to the Chairman’s Report for further work at the next WP 5A meeting.

Related to the preliminary draft new Recommendation ITU-R M.[MS 14.5-15.35 CHAR] the following statements were submitted:

Statement from Luxemburg:

*“Some administrations are of the view that further studies are required on the appropriateness of the protection criteria, i.e. I/N= -6 dB to protect the systems, taking into account interference from systems operating under Appendix 30A.”*

Statement from the Russian Federation:

*“During the consideration of document on characteristics of and protection criteria for systems operating in the mobile service in the frequency range 14.5-15.35 GHz one administration has noted their concern on protection criteria for Mobile service. It was remarked that information about protection criteria are presented in general form in this Recommendation. But interference signal calculations between terrestrial (ground) stations usually take into account path losses which are not constant in time domain. This recommendation doesn't consider more detailed the aspect of possible type of interference (short-term or long-term).*

*Usage of this criteria should takes into account these type of interference and propagation conditions. For example, typically such criteria uses for long-term interference for protection of MS and Recommendation ITU-R P.452-14 is used for propagation issues in such frequency band.*

*It was noted that issue of sharing calculations and criteria's applying more likely is the responsibility of other WP that request these parameters and criteria.”*

Additionally, a reply liaison statement to Working Party 4A was developed, to provide feedback on a number of questions that WP 4A had raised in Document 5A/343.

## 4.3.9 WRC-15 agenda items 1.9.1 and 1.9.2

Input documents: [5A/313](http://www.itu.int/md/R12-WP5A-C-0313/en) (WP 5C); [5A/344](http://www.itu.int/md/R12-WP5A-C-0344/en) (WP 4A)

WG 5A-4 took note of the information contained in these two documents and did not see the need for comments at this point in time.

## 4.3.10 WRC-15 agenda item 1.12

Input document: [5A/335](http://www.itu.int/md/R12-WP5A-C-0335/en) (WP 7C)

Output document: 5A/TEMP/175(Rev.1) (LS to WP 7C)

WG 5A-4 developed a liaison to WP 7C in response to Document 5A/335 and also incorporated comments provided by WG 5A-1 on this topic.

## 4.3.11 WRC-15 agenda item 1.16

Input documents: [5A/302](http://www.itu.int/md/R12-WP5A-C-0302/en) (WP 5B); [5A/340](http://www.itu.int/md/R12-WP5A-C-0340/en) (WP 4C)

Output document: 5A/TEMP/176(Rev.1) (LS to WP 5B)

WG 5A-4 developed a liaison statement to WP 5B in reply to Document 5A/302, which had been received at the last day of the previous WP 5A meeting without sufficient time to reply at that meeting.

WG 5A-4 took note of the information provided by WP 4A to WP 5B in Document 5A/340 and did not see the need for comments at this point in time.

## 4.3.12 WRC-15 agenda item 1.17

Input document: [5A/416](http://www.itu.int/md/R12-WP5A-C-0416/en) (WP 5B)

Output document: 5A/TEMP/178(Rev.1) (LS to WP 5B)

WG 5A-4 developed a liaison statement to WP 5B in reply to Document 5A/416 to provide feedback on the ongoing work in WP 5B on this issue.

## 4.3.13 WRC-15 agenda item 9.1.x

Input documents: [5A/336](http://www.itu.int/md/R12-WP5A-C-0336/en) (WP 7B); [5A/353](http://www.itu.int/md/R12-WP5A-C-0353/en) (IMO)

Output document: 5A/TEMP/177(Rev.1) (LS to IMO)

WG 5A-4 took note of the information provided by WP 7B to WP 4A as in Document 5A/336 and did not see the need for comments at this point in time.

WG 5A-4 developed a liaison statement to the IMO in response to Document 5A/353 to clarify the status of the band 380-470 MHz in the work under WRC-15 agenda item 1.3 and in particular to point out that this band had already been included in Resolution 646 when it was originally approved at WRC-03.

## 4.3.14 Protection of radiocommunication services in the frequency band 8.3-9 kHz

Input document: [5A/417](http://www.itu.int/md/R12-WP5A-C-0417/en) (WP 5B)

WG 5A-4 took note of the information provided by WP 5B to the International Special Committee on Radio Interference (CISPR) as in Document 5A/417 and did not see the need for comments at this point in time.

# 4.4 Revision of WP 5A texts

WG 5A-4 reviewed the WP 5A texts and identified 2 items (a revision of Recommendation ITU-R M.1824 has been initiated and the revision of Report ITU-R M.2116 has been completed), that should be updated in Annex 1 of the Chairman’s Report of the 12th meeting of WP 5A.

# 4.5 Objectives for the next WP 5A meeting

**The objectives for the 13th WP 5A meeting related to the WG 5A-4 activities are:**

* Continue the revision of Recommendation ITU-R M.1824 on system characteristics of television outside broadcast, electronic news gathering and electronic field production in the mobile service for use in sharing studies.
* Further progress the development of the preliminary draft new 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.
* Consider the new approach for base station antenna modelling for land mobile systems based on the proposal transferred from WP 5C (see section 14 of Document 5C/155).

# 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 Laboni Patnaik (USA), Brandon Mitchell (USA) and José Costa (Canada) 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 12th meeting of ITU-R WP 5A from November 18th to 28th, 2013. Around 50 delegates from Algeria, Australia, Germany, Canada, Cameroon, China, Finland, France, Ghana, India, Italy, Japan, Kenya, Korea, Lebanon, Malaysia, New Zealand, Nigeria, The Netherlands, Oman, Russian Federation, Saudi Arabia, Sweden, Switzerland, Thailand, United Kingdom, USA, Vietnam, Alcatel-Lucent, Cisco, COST-TERRA, EADS, Ericsson, IARU, Intel, IUCAF, Microsoft, Motorola, Nokia Solutions and Networks, Orange, Robert Bosch, Telecom Italia and Wireless Innovation Forum participated in the meetings. The tasks assigned to WG 5A-5 address new technologies.

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

|  |  |
| --- | --- |
| – Cognitive radio systems (CRS)(Q.241-2/5) | Documents [5A/251](http://www.itu.int/md/R12-WP5A-C-0251/en) (USA); 5A/[247](http://www.itu.int/md/R12-WP5A-C-0247/en) (USA); 5A/[306](http://www.itu.int/md/R12-WP5A-C-0306/en) [Annex 26](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N26!MSW-E) and [Annex 27](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N27!MSW-E) (WP 5A); 5A/[319](http://www.itu.int/md/R12-WP5A-C-0319/en), 5A/[320](http://www.itu.int/md/R12-WP5A-C-0320/en) (WP 1B); 5A/[333](http://www.itu.int/md/R12-WP5A-C-0333/en) (APT); 5A/[342](http://www.itu.int/md/R12-WP5A-C-0342/en) (WP 5D); 5A/[358](http://www.itu.int/md/R12-WP5A-C-0358), 5A/[361](http://www.itu.int/md/R12-WP5A-C-0361), 5A/[362](http://www.itu.int/md/R12-WP5A-C-0362) (USA); 5A/[374](http://www.itu.int/md/R12-WP5A-C-0374/en)-CRS aspects (Cisco and Motorola Mobility); 5A/[379](http://www.itu.int/md/R12-WP5A-C-0379/en) (Japan); 5A/[388](http://www.itu.int/md/R12-WP5A-C-0388/en) (China); 5A/[392](http://www.itu.int/md/R12-WP5A-C-0392/en) (Finland); 5A/[395](http://www.itu.int/md/R12-WP5A-C-0395/en) (Orange, Telecom Italia); 5A/[397](http://www.itu.int/md/R12-WP5A-C-0397/en) (Nokia Solutions and Networks Oy); 5A/[406](http://www.itu.int/md/R12-WP5A-C-0406/en) (Wireless Innovation Forum); 5A/[407](http://www.itu.int/md/R12-WP5A-C-0407/en) (COST-”TERRA”) |
| – Intelligent transport system (ITS)(Q. 205-5/5) | Documents 5A/[198](http://www.itu.int/md/R12-WP5A-C-0198) [Annex 20](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0198!N20!MSW-E) (WP 5A); 5A/[306](http://www.itu.int/md/R12-WP5A-C-0306/en) [Annex 25](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N25!MSW-E) (WP 5A); 5A/[341](http://www.itu.int/md/R12-WP5A-C-0341/en) (ETSI); 5A/[381](http://www.itu.int/md/R12-WP5A-C-0381/en) (Japan); 5A/[405](http://www.itu.int/md/R12-WP5A-C-0405/en) (Korea) |
| – Agenda item 1.18 (WRC-15) | Documents 5A/[306](http://www.itu.int/md/R12-WP5A-C-0306/en) [Annex 8](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N08!MSW-E), [Annex 9](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N09!MSW-E) (WP 5A) and [Annex 24](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0306!N24!MSW-E); 5A/[309](http://www.itu.int/md/R12-WP5A-C-0309/en) (WP 5C); 5A/[371](http://www.itu.int/md/R12-WP5A-C-0371/en) (Germany); 5A/[380](http://www.itu.int/md/R12-WP5A-C-0380/en), (Japan); 5A/[390](http://www.itu.int/md/R12-WP5A-C-0390/en) (France) |

WG 5A-5 established 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 WP1B on development of a draft new report ITU-R SM.[WHITE-SPACE]
* Maintain the workplan for further studies on CRS
 |
| SWG 5A-5-2 – ITS: Intelligent Transport System(Mr. Satoshi Oyama, Japan) | * Develop working document towards a preliminary draft new Recommendation ITU-R M.[V2X] on radio interface standards of vehicle-to-vehicle and vehicle-to-infrastructure communication for intelligent transport systems (ITS) applications
* Develop working document towards a preliminary draft revision of Report ITU-R M.2228 on advanced ITS radiocommunications
* Develop draft new Recommendation ITU-R M.[AUTO] on systems characteristics of automotive radars operating in the frequency band 76-81 GHz for ITS applications
* Maintain the work plan on WRC-15 agenda item 1.18
 |

SWG 5A-5-1 on CRS and SWG 5A-5-2 on ITS met twenty-one and four times, respectively, during the 12th meeting of WP 5A.

# 5.1 Executive summary

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. The working document was elevated to be a preliminary draft new Report M.[LMS.CRS2]. WG 5A-5 also developed a liaison statement to WP 1B on development of a draft new Report ITU-R SM.[WHITE-SPACE].

WG 5A-5 worked on three documents on ITS; (1) a working document towards a preliminary draft new Recommendation ITU-R M.[V2X], (2) a working document towards a preliminary draft revision of Report ITU-R M.2228 on advanced ITS radiocommunications and (3) a draft new Recommendation ITU-R M.[AUTO] on systems characteristics of automotive radars operating in the frequency band 76-81 GHz for ITS applications. A draft new Recommendation ITU-R M.[AUTO] was approved at this WP 5A meeting.

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

Working Group 5A-5 considered 15 input contributions and two carried forward documents from the previous meeting in the scope of CRS. Two input contributions from external organizations have also been considered.

WG 5A-5 reviewed and updated its work plan for future studies on CRS (see [Attachment 3](#app3)). WG 5A-5 decided based on a received proposal to focus its effort on the development of one comprehensive report M.[LMS.CRS2] on CRS in the LMS instead of splitting the work into two separate reports. WG 5A-5 further developed the working document towards a preliminary draft new Report (PDNR) M.[LMS.CRS2] based on the received input contributions and indicated their intention to elevate the status of the document at the end of this WP 5A meeting. After this consideration a general editor’s note has been added to the cover page of the text showing the work progress on the sections, while individual editor’s notes were added into the relevant sections to indicate topics that need further consideration. Contributions are invited to address these items. WG 5A-5 decided to elevate the current working document towards a preliminary draft new Report (PDNR) M.[LMS.CRS2] to a preliminary draft new Report M.[LMS.CRS2] (Document 5A/TEMP/192R1). WG 5A-5 plans to finalize the PDNR M.[LMS.CRS2] at its 13th meeting in May 2014. The work plan was updated accordingly.

In addition, WG 5A-5 received three liaison statements (Documents 5A/319, 5A/320 and 5A/342) on the CRSs studies. WG 5A-5 noted the liaison statements. WG 5A-5 prepared a liaison statement to ITU-R WP 1B to respond to its request for clarification on white spaces (Document 5A/TEMP/181R1). WG 5A-5 also reviewed the carried forward Document 5A/251 on potential response liaison statement to ITU-R WP 6A but concluded that there is no need to prepare the liaison statement.

# 5.3 Intelligent transport system (ITS)

WG 5A-5 considered 12 input contributions and developed two output documents; one for ITS and the other for WRC-15 A.I. 1.18.

Regarding ITS general, a working document towards a preliminary draft new Recommendation ITU-R M.[V2X] (Document 5A/TEMP/174R1) on radio interface standards of vehicle-to-vehicle and vehicle-to-infrastructure communication for ITS applications was developed. This working document has been carried forward to the next WP 5A meeting in May 2014. WG 5A-5 also reviewed and decided to keep the schedule in the work plan on the development of the above working document (see [Attachment 4](#app4)).

Regarding the working document towards a preliminary draft revision of Report ITU-R M.2228 on advanced ITS radiocommunications (Document 5A/198 (Annex 20)), WG 5A-5 decided to carry forward this document to the next WP 5A meeting, taking into account that there was no contributions to this meeting and there is a potential duplication of texts with a preliminary draft new Recommendation ITU-R M.[V2X].

Regarding WRC-15 agenda item 1.18, WG 5A-5 held a co-located meeting with relevant SWG of WP 5B on WRC-15 A.I. 1.18 (SWG 5B1-1.18) as it did at the previous WP 5A/WP 5B meetings.

WG 5A-5 developed 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 related to WRC-15 A.I. 1.18. WP 5A approved this draft and submit it to SG 5.

The meeting decided to maintain the draft CPM text for WRC-15 A.I. 1.18 developed by WP 5B and the work plan for WRC-15 A.I. 1.18 (Documents 5A/TEMP/198 and 199).

# 5.4 Review of ITU-R texts

WG 5A-5 reviewed ITU-R texts pertinent to WG 5A-5 in Annex 1 to Document 5A/306 (WP 5A). There was a view that Question ITU-R 230-3/5 “Software-defined radio” should be modified or supressed. There was also a view that Report ITU-R M.904 “Automatic determination of location and guidance in the land mobile service” and Recommendation ITU-R M.1307 “Automatic determination of location and guidance in the land mobile services” should be supressed or revised. WG 5A-5 invites contributions on these issues at its 13th meeting in May 2014. The meeting agreed to retain all other ITU-R texts relating to WG 5A-5.

# 5.5 Future work

At the next meeting of WP 5A, WG 5A-5 plans to further develop 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,with an aim to finalize it in its 13th meeting in May 2014.

Working Group 5A-5 also continues the development of working document towards a preliminary draft new Recommendation ITU-R M.[V2X], and working document towards a preliminary draft revision of Report ITU-R M.2228 on advanced ITS radiocommunications.

With respect to WRC-15 agenda item 1.18, WG 5A-5 will continue work with WP 5B SWG 1-18 on systems characteristics of automotive radars operating in the frequency band 76-81 GHz for ITS applications.

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.

**Attachments:** [Attachment 3](#app3): Work plan for further studies on cognitive radios systems (CRS)

 [Attachment 4](#app4): Work plan for the development of a new Recommendation ITU-R M.[V2X] on Vehicle to vehicle and vehicle to infrastructure communication

Attachment 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/193)

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**](http://www.itu.int/pub/R-REP-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.

3) Decision taken to develop a new Report on narrowband, wideband, and broadband PPDR with a view to suppress Report ITU-R M.2033 upon completion of the new Report.

**Priority 1bis: Recommendations and Reports already under revision**

**Recommendation** [**ITU-R M.2009**](http://www.itu.int/rec/R-REC-M.2009/en): “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**](http://www.itu.int/rec/R-REC-M.2015/en): “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**](http://www.itu.int/pub/R-REP-M.2014): “Digital land mobile systems for dispatch traffic” (2012)

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

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

3) Completed.

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

**Recommendation** [**ITU-R M.1637**](http://www.itu.int/rec/R-REC-M.1637/en): “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 (Rev.WRC-12)**; therefore relevant to WRC-15 agenda item 1.3.

**Recommendation** [**ITU-R M.1826**:](http://www.itu.int/rec/R-REC-M.1826/en) “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**](http://www.itu.int/rec/R-REC-F.1105/en): “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.

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

**Priority 3: Recommendations and Reports proposed for suppression**

**Recommendation** [**ITU-R M.1222**](http://www.itu.int/rec/R-REC-M.1222/en): “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**](http://www.itu.int/pub/R-REP-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.

**Handbooks**

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

TBD

Attachment 2 to Annex 3

**Terms of Reference**

**Correspondence Group on N+W parts of the Report ITU-R M.[PPDR]**

(Source: Document 5A/TEMP/184(Rev.1))

The Correspondence Group (CG) should consider the information in Report ITU-R M.2033 that may be relevant to progress the work associated with the development of the narrowband and wideband section of the working document towards a preliminary draft new Report ITU-R M.[PPDR]. Discussions within the CG should lead to appropriate actions to be considered within WP 5A and specifically by DG 5A-3-1.

The CG will work in accordance with § 2.16 and § 2.17 of Resolution ITU-R 1-6[[1]](#footnote-1), and perform the following items:

1. Review and update of the narrowband and wide-band PPDR sections of the working document towards a preliminary draft new Report ITU-R M.[PPDR]. In particular, Part 3 is to be developed by the CG based on the relevant content extracted from Report ITU-R M.2033 and taking into account relevant input contributions considered at the 12th meeting of WP 5A.
2. Provide a CG report to WP 5A on the activities of the CG, which may include proposals on the relevant sections of the working document towards a preliminary draft new Report ITU-R M.[PPDR]. This report should be submitted at least 21 days prior to the official WP 5A deadline for contributions.
3. The status of the Correspondence Group will be reviewed at the 13th meeting of WP 5A.

Correspondence Group Dates: 29 November 2013 (end of 12th meeting of WP 5A) –
14 April 2014 (21 days prior to contribution deadline for the 13th meeting of WP 5A)

Correspondence Group Convenor: Mr. Karsten Buckwitz
(E-Mail: Karsten Buckwitz karsten.buckwitz@ties.itu.int)

Correspondence Group Sharepoint site: [CG-PPDR-Report-N-W](https://extranet.itu.int/rsg-meetings/sg5/wp5a/cg-ppdr-report-n-w/)

**Participants:** Interested parties are encouraged to join Correspondence Group activity on the Working Party [5A Sharepoint site](https://extranet.itu.int/rsg-meetings/sg5/wp5a/cg-ppdr-report-n-w/) using their TIES account.

Attachment 3 to Annex 3

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

(Source: Doc. 5A/TEMP/180)

|  |  |
| --- | --- |
| **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](http://www.itu.int/pub/R-REP-M.2225), ITU-R [M.2242](http://www.itu.int/pub/R-REP-M.2242), ITU-R [SM.2152](http://www.itu.int/pub/R-REP-SM.2152) |
| **Milestones** | **Meeting No. 9 (May 2012)**1. Review Question ITU-R 241-2/5 and Resolution ITU-R 58 and identify items to be studied
2. Develop a work plan 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. 10 (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 work plan as necessary
4. Prepare liaisons to relevant ITU-R Groups and other appropriate external organisations, as necessary

**Meeting No. 11  (May 2013)**1. Consider the received input contributions related to the scope of work
2. Review and revise work plan as necessary. Prepare liaisons to relevant ITU-R Groups and other appropriate external organisations, as necessary (e.g. on review of the working document towards [LMS.CRS2])

**Meeting No. 12 (November 2013)**1. Consider the received input contributions related to the scope of work
2. Review and revise work plan as necessary
3. Consider the responses to the liaison statement for further revision and completion of the working document towards [LMS.CRS2]
4. Prepare liaisons to relevant ITU-R Groups and other appropriate external organisations, as necessary
5. Elevate the status of the working document to a PDNR [LMS.CRS2]

**Meeting No. 13 (May 2014)**1. Consider the received input contributions related to the scope of work
2. Review and revise the PDN Report [LMS.CRS2] aiming for completion and finalize the related work
3. Prepare liaisons to relevant ITU-R Groups and other appropriate external organisations, as necessary

**Meeting No. 14 (November 2014)**1. Complete/adjust the PDN Report [LMS.CRS2] as necessary
 |

Attachment 4 to Annex 3

**Work plan for the development of a new Recommendation ITU-R M.[V2X] on Vehicle to vehicle and vehicle to infrastructure communication**

(Source: Document 5A/TEMP/200)

|  |  |
| --- | --- |
| **Title** | Work plan for the development of a new Recommendation on V2X communication |
| **Document type** | Recommendation |
| **WP 5A Lead Group** | WG New Technologies  |
| **SWG Chairman** | Satoshi (Sam) Oyama; E-mail: s-oyama@arib.or.jp |
| **Editor** | Takeshi Yamamoto |
| **Focus for scope and work** | Intelligent transport systems (ITS) are applied to services such as electric toll collection by using dedicated short-range communications (DSRC) and deployed in many countries. Regarding DSRC, Recommendation ITU-R M.1453 “DSRC at 5.8 GHz”.To extend the existing ITS applications and to achieve traffic safety and reduction of environmental burden in transportation sector, R&D and standardization works on advanced ITS radiocommunications have been conducted. Such works include not only vehicle to infrastructure but also vehicle to vehicle (V2X) communications.The scope of this work is to identify specific radio interface standards of V2X communication for ITS applications. |
| **Related Documents** | Recommendations ITU-R [M.1453](http://www.itu.int/rec/R-REC-M.1453/en), ITU-R [M.1890](http://www.itu.int/rec/R-REC-F.1890/en) |
| **Milestones** | **11th meeting (May 2013)**1. Develop and adopt work plan
2. Carry forward the working document toward a PDN Recommendation
3. Liaise as needed with concerned and interested groups on development of the PDN Recommendation

**12th meeting (November 2013)**1. Continue developing the PDN Recommendation
2. Liaise as needed with concerned and interested groups on development of the PDN Recommendation
3. Update work plan as needed.

**13th meeting (May 2014)**1. Continue developing the PDN Recommendation
2. Liaise as needed with concerned and interested groups on development of the PDN Recommendation
3. Update work plan as needed

**14th meeting (November 2014)**1. Complete draft Recommendation to be finally considered at the 15th meeting in May 2015

**15th meeting (May 2015)**1. Finalize Recommendation and submit to SG 5 meeting for approval |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. 2.16 Correspondence Groups may also be established under the leadership of an appointed Correspondence Group Chairman. The Correspondence Group differs from the Rapporteur Group in that the Correspondence Group performs its work only via electronic correspondence and no meetings are required. A Correspondence Group must have clearly defined Terms of Reference and may be established and its Chairman appointed by a Working Party, a Task Group, a Study Group, CCV, or RAG.

 2.17 Participation in the work of the Rapporteur and Correspondence Groups of the Study Groups is open to representatives of Member States, Sector Members, Associates and Academia. Any views expressed and documentation submitted to these groups should indicate the Member State, Sector Member, Associate or Academia, as appropriate, making the submission. [↑](#footnote-ref-1)