|  |  |  |  |
| --- | --- | --- | --- |
|  | **Radiocommunication Study Groups** | |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** | |  | |
|  | |  | |
| Source: Documents 5A/TEMP/70, 99(Rev.1), 123(Rev.1), 132, 133, 135, 136, 137 | | **Annex 3 to Document 5A/298-E** | |
| **23 November 2016** | |
| **English only** | |
| Annex 3 to Working Party 5A Chairman’s Report | | | |
| consolidation of reports from the working groups of working party 5a | | | |
|  | | | |

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[Attachment 1](#att1): Terms Of Reference – Correspondence Group CG-5A-1: Improvement of Working Document towards PDNR ITU-R [RAIL.RSTT]

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[Attachment 4](#att4): Workplan for preliminary draft new Report ITU-R M.[PPDR SPECTRUM] and consequential revision of Report ITU-R M.2377.

[Attachment 5](#att5): Work plan for the development of a new Report ITU-R M.[ITS USAGE] on the usage of intelligent transport systems in ITU-R member states.

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 31](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N31!MSW-E) of Doc. [5A/298](http://www.itu.int/md/R15-WP5A-C-0298/en) to find the final disposition of these documents by Working Party 5A.

List of input contributions (5A/…) carried forward to the next WP 5A meeting:

WG 5A-1: [Annex 16](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N16!MSW-E) to [Doc. 5A/114](http://www.itu.int/md/R15-WP5A-C-0114), [289](http://www.itu.int/md/R15-WP5A-C-0289) (WP 5C)

WG 5A-2: [250](http://www.itu.int/md/R15-WP5A-C-0250) (Japan)

WG 5A-3: [80](http://www.itu.int/md/R15-WP5A-C-0080) (Australia); [233](http://www.itu.int/md/R15-WP5A-C-0233) (Telstra)

WG 5A-4: [136](http://www.itu.int/md/R15-WP5A-C-0136) (WP 1A); [191](http://www.itu.int/md/R15-WP5A-C-0191) (ITU-D SG 2); [247](http://www.itu.int/md/R15-WP5A-C-0247) (UK); [252](http://www.itu.int/md/R15-WP5A-C-0252) (Japan); [286](http://www.itu.int/md/R15-WP5A-C-0286), [287](http://www.itu.int/md/R15-WP5A-C-0287), [288](http://www.itu.int/md/R15-WP5A-C-0288), [290](http://www.itu.int/md/R15-WP5A-C-0290), [291](http://www.itu.int/md/R15-WP5A-C-0291), [292](http://www.itu.int/md/R15-WP5A-C-0292), [293](http://www.itu.int/md/R15-WP5A-C-0293), [294](http://www.itu.int/md/R15-WP5A-C-0294) (WP 5C); [295](http://www.itu.int/md/R15-WP5A-161107-TD-0295) (WP 5B); [296](http://www.itu.int/md/R15-WP5A-C-0296) (WP 5C)

WG 5A-5: [285](http://www.itu.int/md/R15-WP5A-C-0285) (WP 5C)

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

## 1.1 Executive summary

During the November 2016 meeting of Working Party 5A, Working Group 5A-1 undertook the following work:

– Completed revisions to Recommendation [ITU-R M.1732](http://www.itu.int/rec/R-REC-M.1732/en). The revised recommendation is ready for review by WP 5A prior to submission to Study Group 5.

– Generated four liaison statements to other groups.

– Continued work on the sharing and compatibility studies required for WRC-19 agenda item 1.1.

– Updated the WP 5A Webpage information document “[Guide to the use of ITU-R texts relating to the amateur and amateur-satellite services](http://www.itu.int/oth/R0A06000067)”

– Update the work plan of WG 5A-1 to reflect the current status of work.

See table 1 for an itemized list of output documents.

## 1.2 Details of work undertaken by WG 5A-1 during the November 2016 meeting of WP 5A

WG 5A-1 met fifteen times during this block of meetings and was assigned the following input contributions:

|  |  |
| --- | --- |
| **Working Group 1: Amateur Services (Chairman:** [**Dale Hughes**](mailto:dalevk1dsh@gmail.com?subject=WP5A-meeting)**, Australia)** | |
| **AI 1.1 (**[**Res. 658**](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0001PDFE.pdf)**)** | [114](http://www.itu.int/md/R15-WP5A-C-0114/en) [Annex 4](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N04!MSW-E), [Annex 5](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N05!MSW-E), & [Annex 15](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N15!MSW-E) (WP 5A); [259](http://www.itu.int/md/R15-WP5A-C-0259/en) (IARU); [261](http://www.itu.int/md/R15-WP5A-C-0261/en) (IARU); [278](http://www.itu.int/md/R15-WP5A-C-0278/en) (WP 6A) |
| **Amateur texts** | [114](http://www.itu.int/md/R15-WP5A-C-0114/en) [Annex 14](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N14!MSW-E) & [Annex 16](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N16!MSW-E) (WP 5A); [195](http://www.itu.int/md/R15-WP5A-C-0195) (Russian Federation); [220](http://www.itu.int/md/R15-WP5A-C-0220/en) (Canada);  [262](http://www.itu.int/md/R15-WP5A-C-0262/en) (IARU) |
| **Amateur services protection** | *Wireless power transmission:* [137](http://www.itu.int/md/R15-WP5A-C-0137/en), [138](http://www.itu.int/md/R15-WP5A-C-0138/en), [139](http://www.itu.int/md/R15-WP5A-C-0139/en) (WP 1A); [189](http://www.itu.int/md/R15-WP5A-C-0189/en) |

Revisions to Recommendation [ITU-R M.1732](http://www.itu.int/rec/R-REC-M.1732/en), as carried forward from May 2016 in [5A/114](http://www.itu.int/md/R15-WP5A-C-0114/en) ([Annex 14](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N14!MSW-E)), incorporated contributions [5A/22](http://www.itu.int/md/R15-WP5A-C-0220/en) (Canada), [5A/195](http://www.itu.int/md/R15-WP5A-C-0195) (Russian Federation) and [5A/262](http://www.itu.int/md/R15-WP5A-C-0262/en) (IARU). The final document, [5A/TEMP/65](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-161107-TD-0065), contains updated information on characteristics of the amateur service and includes information on recent new amateur service allocations. It is intended that this document will be reviewed and updated as necessary after each World Radiocommunications Conference.

Concerning WRC-19 agenda item 1.1, the document covering spectrum needs of the amateur service and sharing studies with incumbent services in the 50‑54 MHz frequency band was carried forward to this meeting in [5A/114](http://www.itu.int/md/R15-WP5A-C-0114/en) ([Annex 15](https://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N15!MSW-E)). Revisions to this document incorporated elements of documents [5A/259](http://www.itu.int/md/R15-WP5A-C-0259/en) (IARU) and [5A/261](http://www.itu.int/md/R15-WP5A-C-0261/en) (IARU). The document was extensively discussed during WG 5A-1 meetings and the consensus text developed by the meeting will go forward as document [5A/TEMP/128](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-161107-TD-0128) for further work at the May 2017 WP 5A meeting.

Document [5A/278](http://www.itu.int/md/R15-WP5A-C-0278/en) (WP 6A) asked a number of questions relevant to WRC-19 agenda item 1.1 and WG 5A-1 drafted reply liaison statement, Document [5A/TEMP/100](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-161107-TD-0100), which provided the requested information.

To further refine the 50 MHz spectrum needs and sharing study, a liaison statement to WP 5B seeking additional information on wind profiler radars was developed and this document is [5A/TEMP/101](https://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-161107-TD-0101!!MSW-E).

Liaison statements [5A/137](http://www.itu.int/md/R15-WP5A-C-0137/en), [5A/138](http://www.itu.int/md/R15-WP5A-C-0138/en), [5A/139](http://www.itu.int/md/R15-WP5A-C-0139/en) and [5A/189](http://www.itu.int/md/R15-WP5A-C-0189/en) providing information on Wireless Power Transfer were noted. During the meeting WG 5A-1 was notified of Documents [5A/135](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-C-0135), [5A/141](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-C-0141) and [5A/162](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-C-0162); after discussions in WG 5A-1 it was decided that a liaison note should be developed in response to [5A/135](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-C-0135) expressing support for the efforts of WP 1A in dealing with the issue of the increasing level of radio frequency interference and this note became [5A/TEMP/127](https://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-161107-TD-0127!!MSW-E). After reviewing [5A/162](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-C-0162) WG 5A-1 decided to send a reply liaison statement [5A/TEMP/103](https://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-161107-TD-0103!!MSW-E) commenting on the revised Recommendation ITU-T G.9700 (2014). The other liaison statements were noted.

WG 5A-1 updated the WP 5A Webpage information document “[Guide to the use of ITU-R texts relating to the amateur and amateur-satellite services](http://www.itu.int/oth/R0A06000067)”. The revisions reflect changes to the source documents and contact details. The revised guide to text is found in [5A/TEMP/104](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-161107-TD-0104).

The work plan for WRC-19 agenda item 1.1 (5A/114 ([Annex 5](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N05!MSW-E))) was updated and became Document [5A/TEMP/102](https://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-161107-TD-0102!!MSW-E). Work on the agenda item is progressing in accordance with the work plan.

Documents 5A/114 ([Annex 4](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N04!MSW-E)) (draft CPM text) and 5A/114 ([Annex 16](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N16!MSW-E)) (WDPDNR amateur WJST) will be carried forward as no contributions were received to develop them further.

Table 1

Output documents from WG 5A-1

|  |  |
| --- | --- |
| Topic | Temp document |
| Revised M.1732 | [5A/TEMP/65(Rev.1](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-161107-TD-0065)) |
| 50 MHz Spectrum needs and sharing study | [5A/TEMP/128](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-161107-TD-0128) |
| Liaison statement to WP 6A re WRC-19 AI 1.1 | [5A/TEMP/100](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-161107-TD-0100) |
| Liaison statement to WP 1A re radio frequency interference | [5A/TEMP/127](https://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-161107-TD-0127!!MSW-E) |
| Liaison statement to ITU-T SG15 re Recommendation ITU-T G.9700 | [5A/TEMP/103](https://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-161107-TD-0103!!MSW-E) |
| Liaison statement to WP 5B re wind profiler radar | [5A/TEMP/101](https://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-161107-TD-0101!!MSW-E) |
| WP 5A Guide to text update | [5A/TEMP/104](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-161107-TD-0104) |
| WRC-19 AI 1.1 work plan | [5A/TEMP/102](https://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-161107-TD-0102!!MSW-E) |
| WG 5A-1 Chairman's Report | [5A/TEMP/133](https://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-161107-TD-0133!!MSW-E) |

## 1.3 Objectives for the next meeting of Working Group 5A-1

– Continue work on WRC-19 agenda item 1.1 spectrum needs, sharing and compatibility studies.

– Continue work on developing CPM text for WRC-19 agenda item 1.1.

– 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.

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

## 1.4 Conclusion

The WG 5A-1 chair enjoyed working with all the delegates and is grateful for their thoughtful input contributions, expert knowledge and goodwill. The chair also thanks Mr. Roger Bunch, Mr. Philippe Tristant and Mr. Fatih Yurdal for attending the WG 5A-1 meetings to provide guidance, present technical information and answer questions from the meeting participants.

Dale Hughes  
 Chairman Working Group 5A-1,   
 Amateur and Amateur Satellite Services  
 E-mail: [dalevk1dsh@gmail.com](mailto:dalevk1dsh@gmail.com)

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

## 2.1 Executive summary

WG 5A-2 continued the Work on WRC-19 agenda item (AI) 1.11, further developed the new report M.[RSTT] and established a CG to facilitate the work on the report. Work of development of preliminary draft new Report ITU-R M.[DPLMR] was continued. Work on the development of the draft revision of Report [ITU-R M.2014](http://www.itu.int/pub/R-REP-M.2014) “Digital land mobile systems for dispatch traffic” was completed. Work on the development of the draft revision of Recommendation 2003-1” Multiple Gigabit Wireless Systems in frequencies around 60 GHz” and its companion M.2227-1 were initiated. A working document towards a preliminary draft new ITU-R Recommendation “Receiver technical and operational characteristics of systems (excluding IMT) in the mobile service in the frequency range 27.5-29.5 GHz for use in sharing studies” was initiated. A working document towards a draft liaison statement to the CCV with preliminary definitions for consideration for inclusion in the online integrated database of ITU Terms and Definitions was developed and carried forward to next meeting.

## 2.2 Systems and standards

Working Group 5A-2 met five times at the seventeenth meeting of WP 5A in Geneva. Working Group 5A-2 received the 43 documents remanded by the WP 5A Plenary as follows:

|  |  |
| --- | --- |
|  | **Document 5A/…** |
| 2.2.1 AI 1.11 (Railways Res. 236) | [114](http://www.itu.int/md/R15-WP5A-C-0114/en) [Annex 6](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N06!MSW-E), [Annex 7](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N07!MSW-E) & [Annex 19](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N19!MSW-E) (WP 5A); [155](http://www.itu.int/md/R15-WP5A-C-0155/en) (WP 3K); [167](http://www.itu.int/md/R15-WP5A-C-0167/en) (APT); [187](http://www.itu.int/md/R15-WP5A-C-0187/en) (3GPP TSG RAN); [198](http://www.itu.int/md/R15-WP5A-C-0198) (Russian Federation); [227](http://www.itu.int/md/R15-WP5A-C-0227/en) (Korea); [230](http://www.itu.int/md/R15-WP5A-C-0230/en) (China); [239](http://www.itu.int/md/R15-WP5A-C-0239) (China); [237](http://www.itu.int/md/R15-WP5A-C-0237) (Motorola Solutions); [253](http://www.itu.int/md/R15-WP5A-C-0253/en) (Japan); [254](http://www.itu.int/md/R15-WP5A-C-0254/en) (Japan); [255](http://www.itu.int/md/R15-WP5A-C-0255/en) (Japan); [273(Rev.1)](http://www.itu.int/md/R15-WP5A-C-0273/en) ([5-LCCE-60](http://www.itu.int/md/R00-SG05-CIR-0060/en) responses) |
| 2.2.2 Broadband Wireless Access | [123](http://www.itu.int/md/R15-WP5A-C-0123/en) (WP 5C); [128](http://www.itu.int/md/R15-WP5A-C-0128/en) (WP 1B); [173](http://www.itu.int/md/R15-WP5A-C-0173/en) (WP 4C); [184](http://www.itu.int/md/R15-WP5A-C-0184/en) (WP 5D);  [175](http://www.itu.int/md/R15-WP5A-C-0175/en) (ITU-D SG 1); [182](http://www.itu.int/md/R15-WP5A-C-0182/en) (WP 5D); [272](http://www.itu.int/md/R15-WP5A-C-0272/en) (WP 4A);  [223](http://www.itu.int/md/R15-WP5A-C-0223/en) (Canada); [279](http://www.itu.int/md/R15-WP5A-C-0279) (WP 6B); [218](http://www.itu.int/md/R15-WP5A-C-0218/en) (USA) |
| 2.2.3 Land mobile systems | [114](http://www.itu.int/md/R15-WP5A-C-0114/en) [Annex 17](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N17!MSW-E) & [Annex 18](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N18!MSW-E) (WP 5A); [160](http://www.itu.int/md/R15-WP5A-C-0160/en) (WP 5D); [166](http://www.itu.int/md/R15-WP5A-C-0166/en) (APT); [172](http://www.itu.int/md/R15-WP5A-C-0172/en) (3GPP TSG RAN); [188](http://www.itu.int/md/R15-WP5A-C-0188/en) (3GPP TSG RAN); [200](http://www.itu.int/md/R15-WP5A-C-0200) (CEPT/ECC WGFM); [219](http://www.itu.int/md/R15-WP5A-C-0219/en) (Canada); [236](http://www.itu.int/md/R15-WP5A-C-0236) (Motorola Solutions) |
| 2.2.4 ANTs & HNTs | [132](http://www.itu.int/md/R15-WP5A-C-0132/en) (WP 1A); [143](http://www.itu.int/md/R15-WP5A-C-0143/en) (WP 1B); [176](http://www.itu.int/md/R15-WP5A-C-0176/en) (ITU-T SG 15); [178](http://www.itu.int/md/R15-WP5A-C-0178/en) (ITU-T SG 15); [179](http://www.itu.int/md/R15-WP5A-C-0179/en) (ITU-T SG 15); [180](http://www.itu.int/md/R15-WP5A-C-0180/en) (ITU-T SG 15) |
| 2.2.5 MGWS | [215](http://www.itu.int/md/R15-WP5A-C-0215/en) (USA) |
| 2.2.6 Millimetre-wave systems | [212](http://www.itu.int/md/R15-WP5A-C-0212/en) (USA); [250](http://www.itu.int/md/R15-WP5A-C-0250/en) (Japan)  *(support WG 5 on millimetre-wave systems)* |

Working Group 5A-2 set up one sub-working group and two drafting groups to deal with WRC-19 AI 1.11 Railway, PLMSA and M.[MS-RXCHAR-28] respectively:

– SWG 5A2-1 AI 1.11 Railway Mr. Bin Liu

– DG5A2-1 DLMSA Mr. David Tejeda

– DG5A2-2 M.[MS-RXCHAR-28] Ms. Jayne Stancavage

### 2.2.1 WRC-19 agenda item 1.11 (Railways Res. 236)

Sub-Working Group (SWG 5A-2-1 A.I.1.11 Railway) was established to deal with the preparation issues for WRC-19 AI 1.11. SWG 5A-2-1 met ten times, considered all contribution documents and carried out 3 Temp documents to WG 5A-2 for consideration. During the meeting, a Drafting Group (DG) was set up and met 4 times to deal with the responses to Questionnaire contained in 5/LCCE/60. Mr. Takahiko YAMAZAKI (J) chaired the DG. Several informal discussions were organized to find the best approached to improve the document.

The following issues were discussed.

a) Work plan for preparation for WRC-19 agenda item 1.11

Contribution Document: Annex 7 to 5A/114 (Chairman’s Report of WP 5A)

Output: None.

During the discussion, it was agreed that no change to the work plan of SWG 5A-2-1A.I. Railway.

b) Working document towards draft CPM Text for WRC-19 agenda item 1.11

Contribution Document: Annex 6 to 5A/114 (Chairman’s Report of WP 5A)

Output: None.

There is no contribution document on the modification to the Working document towards draft CPM text for WRC-19 agenda item 1.11. The SWG has no output on this issue.

c) Working document towards a preliminary draft new Report ITU-R M.[RAIL.RSTT]

Contribution Document: 5A/198 (Russian Federation), 5A/227 (Korea), 5A/230 (China), 5A/237 (Motorola Solutions), 5A/253 (Japan), 5A/254 (Japan), 5A/255 (Japan)

Output: 5A/TEMP/124.

The SWG improved the Working Document towards a Preliminary Draft New Report ITU-R M.[RAIL.RSTT], including

– 4 main categories were raised to distinguish different purposes/functions of RSTT;

– Technologies, 5 generic deployment scenarios, and the generic architecture of RSTT were raised;

– 26 responses to the ‘questionnaire on the usage of railway radiocommunication systems’ were summarized;

– The usage of RSTT in 4 administrations were added or modified and attached to the Annexes.

d) Summary of response to the Questionnaire on the Usage of Railway Radiocommunication Systems

Contribution Document: 5A/273(Rev.2) (BR)

Output: Annex 2 to 5A/ TEMP/124

Radiocommunication Bureau had received 26 responses by 31 October 2016. All responses to the Questionnaire had been compiled in the Document 5A/273(Rev.2).

The SWG set up a Drafting Group to summarize those responses and prepared an outcome document with embedded EXCEL sheet which could be sorted by administrations or by other items (such as frequency range, system’s name, etc.). It was agreed to attach the outcome document into the Working Document as Annex.

e) Establishment of the Correspondence Group CG-5A-1

Contribution Document: None

Output: 5A/TEMP/123(Rev.1)

The SWG agreed to establish a Correspondence Group to improvement of Working Document towards preliminary draft new Report ITU-R M.[RAIL.RSTT]. This CG aims to improve the working document by reviewing information contained in the existing responses to the questionnaire and to categorize them into correct applications of Chapter 4 by filling the right tables. The CG will prepare a summary Report of the CG activities and a contribution document to next WP 5A meeting, before April 14th, 2017.

f) Draft liaison statement to external Organizations

Contribution Document: WP 5A/167 (APT), WP 5A/187 (3GPP TSG RAN)

Output: 5A/TEMP/122.

Two Liaison Statements of External Organizations were discussed and noted.

The SWG agreed to send a liaison statement to external organizations, inviting the External Organizations to comment on the working document towards a preliminary draft new Report ITU-R M.[Rail.RSTT].

g) Draft liaison statement to WP 3K

Contribution Document: 5A/155(3K), 5A/239(China)

Output: [None.](https://extranet.itu.int/rsg-meetings/sg5/wp5a/Share/5A2-Systems%20and%20standards/Sub-Working%20Group%205A2-1%20RAILWAY/Docs%20to%20be%20Submitted%20%20To%20WG5A2/TEMP05-SWG5A2-1-%20Draft%20LS%20from%20WP%205A%20to%20WP%203K%20(clean%20version).docx?Web=1)

The Liaison Statement from WP 3K was discussed and noted.

The SWG considered the proposal for sending a liaison statement to WP 3K, aiming to ask their advices on the Propagation Models for High Speed Trains working in different scenarios. However, it was not agreed in the SWG. Some administrations are of the view that there is no compatibility study could be anticipated by far, so they do not support sending this LS. Some administrations support to sending this LS, because they think the future work of spectrum harmonization of RSTT may need those propagation models. Due to the time limit, it was agreed to report this issue to WG 5A-2. After the offline discussions during the noon between some concerned administrations, it seems that there is no longer need to send the LS. At the plenary of WG 5A-2 in Nov. 16th, there is no objection for not sending the LS to WP 3K.

### 2.2.2 Broadband Wireless Access

Input documents: [123](http://www.itu.int/md/R15-WP5A-C-0123/en) (WP 5C); [128](http://www.itu.int/md/R15-WP5A-C-0128/en) (WP 1B); [173](http://www.itu.int/md/R15-WP5A-C-0173/en) (WP 4C); [184](http://www.itu.int/md/R15-WP5A-C-0184/en) (WP 5D); [175](http://www.itu.int/md/R15-WP5A-C-0175/en) (ITU-D SG 1); [182](http://www.itu.int/md/R15-WP5A-C-0182/en) (WP 5D); [272](http://www.itu.int/md/R15-WP5A-C-0272/en) (WP 4A);[223](http://www.itu.int/md/R15-WP5A-C-0223/en) (Canada); [279](http://www.itu.int/md/R15-WP5A-C-0279) (WP 6B); [218](http://www.itu.int/md/R15-WP5A-C-0218/en) (USA).

Output document: TEMP/76 (CCV); 77 (regulatory tools); 78 (definition of Broadband); 93 (M.[MS.RXCHAR-28]); 95 (Global Platform); 117 (LS-rxchar-28).

[123](http://www.itu.int/md/R15-WP5A-C-0123/en) from WP 5C is a liaison statement on draft new Report ITU-R F.[FS.IMT/BB]. WG 5A-2 took note of the information provided by WP 5C to WP 4C and did not see the need for further action.

[128](http://www.itu.int/md/R15-WP5A-C-0128/en) (WP 1B), [173](http://www.itu.int/md/R15-WP5A-C-0173/en) (WP 4C) and [184](http://www.itu.int/md/R15-WP5A-C-0184/en) (WP 5D) are liaisons on innovative regulatory tools. WG 5A-2 took note of the information provided by WP 1B, WP 4C and WP 5D on this issue and developed a joint reply liaison statement back to WP 1B together with WP 5C.

[175](http://www.itu.int/md/R15-WP5A-C-0175/en) (ITU-D SG 1), [182](http://www.itu.int/md/R15-WP5A-C-0182/en) (WP 5D) and [272](http://www.itu.int/md/R15-WP5A-C-0272/en) (WP 4A) are liaisons on definition of Broadband. WG 5A-2 took note of the information provided by ITU-D SG 1, WP 5D and WP 4A on this issue and developed a joint reply liaison statement back to ITU-D Study Group 1 together with WP 5C.

Contribution [223](http://www.itu.int/md/R15-WP5A-C-0223/en) from Canada proposed WP 5A to initiate a working document towards a preliminary draft revision of Recommendation ITU-R M.1450-5 and consequentially the working document in [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/en) to be discontinued. The meeting reached agreement to discontinued [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/en), and developed a working document toward a draft LS to CCV which was attached to the WP 5A’s Report ([Annex 20](https://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N20!MSW-E)).

[279](http://www.itu.int/md/R15-WP5A-C-0279) from WP 6B is a liaison on global platform for the broadcasting service. WG 5A-2 took note of the information provided by WP 6B and developed a reply liaison to seek further clarification on the intent of the Report ITU-R [GLOBAL PLATFORM].

[218](http://www.itu.int/md/R15-WP5A-C-0218/en) from USA proposed WP 5A to initiate the work on the development of a PDNR on receiver technical and operational characteristics and protection criteria for mobile service stations in the frequency range 27.5-29.5 GHz for use in sharing studies. WG 5A-2 developed a working document based on 5A/218 and clearly indicated excluding IMT in the title. A draft liaison (5A/TEMP/117) was developed to encourage BWA external organizations to provide characteristics of relevant BWA systems and standards to assist in the development of the working document accordingly. However, it was not reached in consensus whether to send a liaison to external organizations. Some Administrations are of the view that the working document should be handled internally, so they didn’t agree to send the liaison to external organizations. It is agreed to submit 5A/TEMP/117 to WP 5A Plenary meeting for further consideration.

### 2.2.3 Land mobile systems

Input documents: [114](http://www.itu.int/md/R15-WP5A-C-0114/en) [Annex 17](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N17!MSW-E) & [Annex 18](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N18!MSW-E) (WP 5A); [160](http://www.itu.int/md/R15-WP5A-C-0160/en) (WP 5D); [166](http://www.itu.int/md/R15-WP5A-C-0166/en) (APT); [172](http://www.itu.int/md/R15-WP5A-C-0172/en) (3GPP TSG RAN); [188](http://www.itu.int/md/R15-WP5A-C-0188/en) (3GPP TSG RAN); [200](http://www.itu.int/md/R15-WP5A-C-0200) (CEPT/ECC WGFM); [219](http://www.itu.int/md/R15-WP5A-C-0219/en) (Canada); [236](http://www.itu.int/md/R15-WP5A-C-0236) (Motorola Solutions).

Output document: TEMP/96 (LS to EO on PLMR), 98 (WD on PLMR), 99 (Work plan on PLMR).

WG 5A-2 reviewed [114](http://www.itu.int/md/R15-WP5A-C-0114/en) [Annex 17](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N17!MSW-E) (revision of Report ITU-R M.2014-2) which was carried forward from the last meeting. WG 5A-2 agreed to submit it to SG 5 for approval.

[160](http://www.itu.int/md/R15-WP5A-C-0160/en) is a liaison from 5D on the Use of Terrestrial IMT by Other Industry Sectors. WG 5A-2 took note of the information provided by WP 5D to WP 5A and ITU-T SG 17 and did not see the need for further action.

DG DLMSA chaired by Mr. David Tejeda considered the other input contributions under the issue. DG DLMSA narrowed the scope of new Report ITU-R M.[DLMSA] to digital private land mobile radio and discussed the definition of PLMR, moreover,

DG DLMSA further developed the texts of the report based on the input contribution. The work plan of the report was modified accordingly, which was attached to the report as an attachment. A liaison statement was developed to invite external organizations to contribute material for the development of this new Report.

### 2.2.4 ANTs

Input documents: [132](http://www.itu.int/md/R15-WP5A-C-0132/en) (WP 1A); [143](http://www.itu.int/md/R15-WP5A-C-0143/en) (WP 1B); [176](http://www.itu.int/md/R15-WP5A-C-0176/en) (ITU-T SG 15); [178](http://www.itu.int/md/R15-WP5A-C-0178/en) (ITU-T SG 15); [179](http://www.itu.int/md/R15-WP5A-C-0179/en) (ITU‑T SG 15); [180](http://www.itu.int/md/R15-WP5A-C-0180/en) (ITU-T SG 15).

WG 5A-2 reviewed the information provided by WP 1A, WP 1B and ITU-T SG 15 and did not see the need for further action.

### 2.2.5 MGWS

Input documents: [215](http://www.itu.int/md/R15-WP5A-C-0215/en) (USA); [212](http://www.itu.int/md/R15-WP5A-C-0212/en) (USA); [250](http://www.itu.int/md/R15-WP5A-C-0250/en) (Japan).

Output document: TEMP/90(WD on M.2227); 91(WD on M.2003); 94(LS to EO).

[215](http://www.itu.int/md/R15-WP5A-C-0215/en) from USA proposed to initiate the update process for Recommendation ITU-R M.2003 and its companion Report ITU-R M.2227 to reflect the technological advancements included in standardization efforts and other recent relevant developments in MGWS. As a result of the joint WG2 and WG5 meeting, [212](http://www.itu.int/md/R15-WP5A-C-0212/en) (USA); [250](http://www.itu.int/md/R15-WP5A-C-0250/en) (Japan) were considered under MGWS.

Working documents towards the preliminary draft revision of Recommendation ITU-R M.2003 and its companion Report ITU-R M.2227were developed based on the input contributions. A liaison was developed to invite external organizations to consider the working documents and provide update or new material to complete the revision work as well. However, due to time constraints, the input contribution [250](http://www.itu.int/md/R15-WP5A-C-0250/en) was carried forward to next meeting and added a note to the working documents “*The close proximity technologies proposed by the contribution 5A/250 will be incorporated in the working document of a revision of M.2003 and M.2227 at the next meeting”.*

### 2.2.6 Millimetre-wave systems

See section 2.2.5.

### 2.2.7 Review of ITU-R texts

Working Group 5A-2 reviewed the WP 5A texts Section 1 of Annex 1 in Doc. [5A/114](http://www.itu.int/md/R12-WP5A-C-0114), and [Guide to the use of ITU-R texts relating to the land mobile service](http://www.itu.int/oth/R0A06000001/en). Only three tiny updates were proposed for Section 1 of Annex 1 in Doc. [5A/114](http://www.itu.int/md/R12-WP5A-C-0114).

### 2.2.8 Objectives for the next meeting

The objectives for the next meeting are to continue the work on WRC-19 AI 1.11 and WAS Study Questions on the basis of input contributions and, in particular, to continue the work on:

– Studies of WRC-19 A.I. 1.11, , including the development of the working document M.[RAIL.RSTT] on technical and operational characteristics, implementation and spectrum needs of railway radiocommunication systems between train and trackside[[1]](#footnote-1).

– Development of a preliminary draft new Recommendation ITU-R M.[DPLMR]

– Development of a preliminary draft revision Recommendation ITU-R M.2003-1

– Development of a preliminary draft revision of Report ITU-R M.2227-1

– Development of a preliminary draft new Recommendation ITU-R M.[MS-RXCHAR-28]

### 2.2.9 Chairman’s closing remarks

Finally, Chairman of Working Group 5A-2 would like to thank all participants of WG 5A-2 for their contributions and cooperation and particularly thank SWG chair Mr. Liu Bin, DG Chairs Mr. David Tejeda, Ms. Jayne Stancavage and Mr. Yamazaki for their good and efficient work. The WG Chairman would also like to express particular thanks to Ms. Amy Sanders, Ms. Stancavage and Mr. Costa for drafting the LSs and Yoshino-san for co-chairing the joint WG 2&WG 5 meeting.

**Attachments:**

[Attachment 1](#att1): ToR of Correspondence Group CG-5A-1.

[Attachment 2](#att2): Workplan for a preliminary draft new Report ITU-R M.[DPLMR].

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

## 3.1 Executive summary

Working Group 3 met on three occasions and considered 19 input contributions to this meeting, eight carried forward documents, and two Annexes to the previous Working Party 5A Chairman’s Report. The input documents were related to the objectives for this meeting as reflected in section 3 of [Annex 3 of 5A/114](http://www.itu.int/md/R15-WP5A-C-0114!N03!MSW-E):

– further develop the working document toward a preliminary draft revision of Recommendation ITU-R M.2015-1;

– further develop the working document toward a preliminary draft new Report ITU-R M.[PPDR SPECTRUM], “Spectrum calculations and requirements for Public Protection and Disaster Relief (PPDR)”; and

– consider consequential revisions to other ITU-R documents under the purview of WG 3, based on [5A/80](http://www.itu.int/md/R15-WP5A-C-0080).

The work of the group produced two liaison statements for transmittal and two working documents to be included in the Chairman’s Report, as well as two documents to be attached to this Working Group report: one workplan and one proposed structure for frequency arrangements within the annexes of Recommendation ITU-R M.2015.

**3.2 Organization of the work**

All input contributions were introduced at the Working Group level. The Disaster Relief Rapporteur’s Report (Doc. [5A/281](http://www.itu.int/md/R12-WP5A-C-0281/en)) was presented at the WP 5A Plenary and noted in Working Group 3. The Chairman also tasked all WGs to consider the relevant portions of the “Guide to the use of ITU-R texts related to the land mobile service” and of Section 1 of [Annex 1 in 5A/114](http://www.itu.int/md/R12-WP5A-C-0114/en). These items were addressed at the Working Group level.

WG 3 created two drafting groups: one drafting group to further develop the working document toward a preliminary draft revision of Recommendation ITU-R M.2015-1, led by Ms. Christine Hsu of Canada, and a second drafting group to further develop the working document toward a preliminary draft new Report ITU-R M.[PPDR SPECTRUM], “Spectrum calculations and requirements for Public Protection and Disaster Relief (PPDR)”, led by Ms. Amy L. Sanders of the United States.

In addition, the Working Group agreed to address the following topics at the WG level:

– Consider consequential revisions to other ITU-R documents under the purview of WG 3, based on [5A/80](http://www.itu.int/md/R15-WP5A-C-0080);

– Update of Report ITU-R M.2377, “Radiocommunication objectives and requirements for Public Protection and Disaster Relief (PPDR)”, based on 5A/233 (Telstra);

– General PPDR liaisons based on 5A/144 (WP 5D), 5A/145 (WP 5D), 5A/170 (ITU-T SG 17) and 5A/190 (ITU-D SG 2); and

– Revision of WP 5A texts (Section 1 of Annex 1 in [5A/114](http://www.itu.int/md/R12-WP5A-C-0114) and [Guide to the use of ITU-R texts relating to the land mobile service](http://www.itu.int/oth/R0A06000001/en)).

**3.3 Execution of objectives**

Objective 1: Further develop the working document toward a preliminary draft revision of Recommendation ITU-R M.2015-1

Drafting group 5A3-1 was established under the leadership of Ms. Christine Hsu (Canada) to address the further development of the working document toward a preliminary draft revision of Recommendation ITU-R M.2015-1.

Twelve contributions were received at this meeting related to the revision of Recommendation ITU-R M.2015-1 contained in Annex 20 of the Chairman’s Report of the previous meeting. Seven contributions were carried forward from the sixteenth meeting on this topic. The relevant documents are detailed in the table below:

|  |  |
| --- | --- |
| Further development of the Elements for consideration in future discussions on Recommendation ITU-R M.2015 | [5A/736](http://www.itu.int/md/R12-WP5A-C-0736/en) [Annex 6](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0736!N06!MSW-E) (WP 5A); [60](http://www.itu.int/md/R15-WP5A-C-0060) (China); [67](http://www.itu.int/md/R15-WP5A-C-0067) (Mexico); [75](http://www.itu.int/md/R15-WP5A-C-0075) (USA); [80](http://www.itu.int/md/R15-WP5A-C-0080) (Australia); [85](http://www.itu.int/md/R15-WP5A-C-0085) (Germany, France, Luxemburg); [90](http://www.itu.int/md/R15-WP5A-C-0090) (Motorola Solutions);   [114](http://www.itu.int/md/R15-WP5A-C-0114/en) [Annex 20](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N20!MSW-E) (WP 5A); [168](http://www.itu.int/md/R15-WP5A-C-0168/en) (APT); [174](http://www.itu.int/md/R15-WP5A-C-0174) (Germany); [194](http://www.itu.int/md/R15-WP5A-C-0194) (Australia); [199](http://www.itu.int/md/R15-WP5A-C-0199) (New Zealand); [200](http://www.itu.int/md/R15-WP5A-C-0200/en) (CEPT/ECC WGFM); [214](http://www.itu.int/md/R15-WP5A-C-0214/en) (USA); [222](http://www.itu.int/md/R15-WP5A-C-0222/en) (Canada); [238](http://www.itu.int/md/R15-WP5A-C-0238) (Motorola Solutions); [240](http://www.itu.int/md/R15-WP5A-C-0240) (UAE); [242](http://www.itu.int/md/R15-WP5A-C-0242/en) (Qatar); [244](http://www.itu.int/md/R15-WP5A-C-0244) (Colombia); [251](http://www.itu.int/md/R15-WP5A-C-0251/en) (Japan) |

Each of the input contributions was introduced and discussed in WG 3. DG 5A3-1 met three times and engaged in detailed discussions of the proposals in the contributions, as a result, the working document toward a preliminary draft revision of Recommendation ITU-R M.2015-1 was further developed. Based on the conceptual guidance document for the structure of the Annexes (Attachment 2 to the WG Chairman’s Report from the last meeting), the contributions were allocated to the appropriate Annexes, Sections and Sub-sections. It was agreed by the Drafting Group that the detailed numbering scheme included in the conceptual guidance document was not required and that descriptive titles would make the document clearer.

The DG developed a document proposing a uniform structure for presenting the frequency arrangements within the annexes of Recommendation ITU-R M.2015. It is attached to this WG 3 Report as Attachment X. Administrations and regional bodies that have submitted, or will submit, arrangements for consideration for inclusion in the Recommendation are encouraged to use this proposed structure.

In the process of updating the working document, it was noted that some of the frequency arrangements being considered for inclusion in the revision of Recommendation ITU-R M.2015-1 were either duplicative or updates of arrangements in Recommendation ITU-R M.1826. The DG decided to defer any action until the next meeting, when a possible liaison to the relevant regional bodies in Regions 2 and 3 could be developed.

As a result of the work in DG 5A3-1, one document was created:

1) [5A/TEMP/74Rev.1](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-161107-TD-0074) (Working document toward a preliminary draft revision of Recommendation ITU-R M.2015-1) to be attached as an Annex to the WP 5A Chairman’s Report.

Objective 2: Further develop the working document toward a preliminary draft new Report ITU-R M.[PPDR SPECTRUM], “Spectrum calculations and requirements for Public Protection and Disaster Relief (PPDR)”

Drafting Group 5A3-2 on PPDR Spectrum met on three occasions. The DG was assigned two input contributions as well as the relevant Annex from the Chairman’s Report. The documents considered by the meeting, as well as their sources, are shown in the table below:

|  |  |
| --- | --- |
| Further develop the working document toward a preliminary draft new Report ITU-R M.[PPDR SPECTRUM], “Spectrum calculations and requirements for Public Protection and Disaster Relief (PPDR)” | [5A/114](http://www.itu.int/md/R15-WP5A-C-0114/en) [Annex 21](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N21!MSW-E) (WP 5A); [234](http://www.itu.int/md/R15-WP5A-C-0234) (Telstra); [235](http://www.itu.int/md/R15-WP5A-C-0235) (Telstra) |

The DG agreed to add the substance of 5A/235 to the working document as a new Annex (2G). After detailed discussion of the material in 5A/234, the DG added some additional text to the working document to reflect some of the points raised in the input contribution. In addition, the DG developed a liaison statement to ITU-R Working Party 5D, as the expert group on Recommendation ITU-R M.1390, to inquire about some of the points raised in 5A/234 on the applicability of that Recommendation.

As a result of the work of the DG, the working document toward a preliminary draft new Report was further developed to be attached as an annex to the Chairman’s Report. DG 5A3-1 produced three documents:

1) [5A/TEMP/70](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-161107-TD-0070) (Workplan for preliminary draft new Report ITU-R M.[PPDR SPECTRUM] and consequential revision of Report ITU-R M.2377) to be attached to this WG 3 Report;

2) [5A/TEMP/71](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-161107-TD-0071) (Draft liaison statement to WP 5D requesting further information regarding the applicability of Recommendation ITU-R M.1390) to be approved in the WP 5A Plenary;

3) [5A/TEMP/72](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-161107-TD-0072) (Working document toward a preliminary draft new Report ITU-R M.[PPDR SPECTRUM], “Spectrum calculations and requirements for Public Protection and Disaster Relief (PPDR)”) to be attached as an Annex to the WP 5A Chairman’s Report.

Objective 3: Consider consequential revisions to other ITU-R documents under the purview of WG 3, based on [5A/80](http://www.itu.int/md/R15-WP5A-C-0080)

Working Group 3 considered the topic of the consequential revision of other ITU-R documents under its purview, as was raised in 5A/80, a contribution to a previous meeting. Considering its current work on the revision of Recommendation ITU-R M.2015, the development of the new Report on PPDR spectrum, and the possible consequential changes to both Report ITU-R M.2377 and Recommendation ITU-R M.1826, WG 3 determined that it was premature to undertake any further consequential changes until decisions on those documents were reached. WG 3 agreed to carry forward 5A/80 for handling at a future meeting.

## 3.4 Other matters

### 3.4.1 Revision of Report ITU-R M.2377, “Radiocommunication objectives and requirements for Public Protection and Disaster Relief (PPDR)”

WG 3 considered input contribution 5A/233 (Telstra) which proposed restructuring of Report ITU‑R M.2377, “Radiocommunication objectives and requirements for Public Protection and Disaster Relief (PPDR)”. The WG noted that there was earlier agreement that, when the new Report on PPDR spectrum was completed, there would be a consequential revision of M.2377 to reflect the removal of Annexes 6 and 7, as was shown in the Workplan that was Attachment 3 to the WG 3 Report from the previous meeting. The restructuring proposed in 5A/233 would go beyond that earlier agreement. The WG agreed to carry forward 5A/233 for further consideration at a future meeting.

**3.4.2 Liaison statements**

In addition to the above actions based on the objectives for this meeting, WG3 also considered four incoming liaison statement related to PPDR:

– 5A/144 (WP 5D), 5A/145 (WP 5D), 5A/170 (ITU-T SG 17) and 5A/190 (ITU-D SG 2)

The WG considered the substance of Documents 5A/145, 5A/170 and 5A/190 and determined that no reply was required. The documents were noted. A liaison statement was developed in response to Document 5A/144 from Working Party 5D and is contained in [5A/TEMP/73Rev.1](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-161107-TD-0073) to be approved in the WP 5A Plenary.

**3.4.3 Administrative issues**

WG 3 followed the WP 5A Chairman’s instructions to consider the relevant portions of the [Guide to the use of ITU-R texts relating to the land mobile service](http://www.itu.int/oth/R0A06000001/en) and of Section 1 of Annex 1 in [5A/114](http://www.itu.int/md/R12-WP5A-C-0114). The WG Chair provided a single update to the WP 5A Chairman (to reflect the ongoing revision of Recommendation ITU-R M.2015-1) for inclusion in Section 1 of Annex 1 of the WP 5A Chairman’s Report.

**3.4.4 Future work**

With regard to work on public protection and disaster relief at the seventeenth meeting of Working Party 5A, the objectives for Working Group 3 will be to:

– further develop the working document toward a preliminary draft revision of Recommendation ITU-R M.2015-1;

– further develop the working document toward a preliminary draft new Report ITU-R M.[PPDR SPECTRUM], “Spectrum calculations and requirements for Public Protection and Disaster Relief (PPDR)”;

– consider the planned consequential revision of Report ITU-R M.2377 as reflected in the workplan and the proposal to undertake broader revision of the document as reflected in [5A/233](http://www.itu.int/md/R15-WP5A-C-0233);

– consider a possible liaison statement to affected regional groups to determine the frequency arrangements for Regions 2 and 3 that comprise the substance of Recommendation ITU-R M.1826 have been properly incorporated into the revision of Recommendation ITU-R M.2015-1 and seeking their views on the possible consequential suppression of Recommendation ITU-R M.1826; and

– consider consequential revisions to other ITU-R documents under the purview of WG 3, based on [5A/80](http://www.itu.int/md/R15-WP5A-C-0080).

## 3.5 Conclusion

As noted above, contributions are particularly encouraged to the next meeting of Working Party 5A that would provide frequency arrangements for incorporation in the current working document on the revision of Recommendation ITU-R M.2015-1 using the proposed uniform structure provided in [Attachment 3](#att3).

The WG Chairman would like to express sincere thanks to Ms. Hsu for her able leadership of the drafting group and to all the participants of Working Group 3 for their contributions to the work at this meeting.

**Attachments:**

[Attachment 3](#att3): Proposed uniform structure for presenting the frequency arrangements within the annexes of Recommendation ITU-R M.2015. This document is provided as guidance for future contributions.

[Attachment 4](#att4): Workplan for preliminary draft new Report ITU-R M.[PPDR SPECTRUM] and consequential revision of Report ITU-R M.2377.

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

## 4.0 Executive Summary

WG 5A-4 continued to develop the various working documents on WRC-19 agenda item 1.16 and related draft CPM text and liaison statements. WG 5A-4 furthermore developed liaison statements to other Working Parties regarding a number of WRC-19 agenda items. WG 5A-4 also continues its work on sharing schemes in the land mobile service as well as WRC-19 agenda item 9.1, issue 9.1.5.

## 4.1 Introduction

Working Group 5A-4 met six times during the November 2016 meeting of Working Party 5A and considered 69 input contributions and developed 24 output documents.

## 4.2 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/6.

### 4.2.1 Information on SAB/SAP as utilized in broadcasting

Input document: 5A/277 (WP 6A)

WG 5A-4 took note of the information provided in Document 5A/277 and did not see the need for further action at this point in time.

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

Input document: 5A/185 (ATDI)

WG 5A-4 took note of the work regarding the revision of this Recommendation which WP 5C leads as this revision is focused on the fixed service part of the Recommendation. Interested participants of WP 5A were encouraged to participate in the related discussions in WP 5C.

### 4.2.3 Propagation data for compatibility studies above 50 GHz

Input document: 5A/158 (WPs 3K & 3M)

WG 5A-4 took note of the information provided by WPs 3K and 3M and did not see the need for further action.

### 4.2.4 Characteristics of RLS, AMS and RAS for IMT coexistence

Input documents: 5A/118 (WP 5B); 5A/267 (WP 7D)

WG 5A-4 took note of the liaison statements between WP 5B and WP 7D and did not see the need for further action.

### 4.2.5 Assessment of the impact of other emissions to radio services

Input documents: 5A/135 (WP 1A); 5A/153 (WP 3L)

WG 5A-4 took note of the information provided by WPs 1A and 3L and did not see the need for further action at this point in time within WG 5A-4 but suggested that WG 5A-1 might want to look at document 5A/135.

### 4.2.6 Revision of Recommendation ITU-R SM.851

Input document: 5A/141 (WP 1A)

WG 5A-4 took note of the information provided by WP 1A and did not see the need for further action at this point in time within WG 5A-4 but suggested that WG 5A-1 might want to look at document 5A/141.

### 4.2.7 Revision of Recommendation ITU-R SM.1448

Input documents: 5A/134 (WP 1A); 5A/152 (WP 3J); 5A/275 (WP 4A)

WG 5A-4 took note of the information provided by WPs 1A, 3J and 4A on this topic and did not see the need for further action at this point in time.

### 4.2.8 Propagation Recommendations used by WP 5B

Input documents: 5A/119 (WP 5B); 5A/154 (WPs 3K & 3M)

WG 5A-4 took note of the liaison statements between WPs 3K, 3M and 5B on this topic and did not see the need for further action.

### 4.2.9 Wireless power transmission

Input document: 5A/136 (WP 1A)

WG 5A-4 was only able to very briefly consider this issue at this WP 5A meeting due to other activities and decided to carry Document 5A/136 forward to the next WP 5A meeting for more detailed discussion.

### 4.2.10 Sharing schemes in the land mobile service

Input documents: 5A/140 (WP 1A); 5A/142 (WP 1B); 224 (Canada)

Output documents: 5A/TEMP/106 (LS to WPs 1A & 1B); 5A/TEMP/111 (Working doc.)

WG 5A-4 updated to working document as contained in the Chairman’s Report from the previous meeting based on the input contributions received and also developed a reply liaison statement to WPs 1A and 1B.

### 4.2.11 Working document ITU-R S.[INTERF.AREA]

Input documents: 5A/117 (WP 5C); 5A/148 (WP 5D); 5A/274 (WP 4A)

Output document: 5A/TEMP/85 (LS to WP 4A)

WG 5A-4 took note of the information provided by WPs 5C and 5D to WP 4A and developed a reply liaison statement to WP 4A.

### 4.2.12 Non-ionizing radiation

Input documents: 5A/130 (SG 1); 5A/186 (ITU-T SG5); 5A/191 (ITU-D SG2)

WG 5A-4 took note of the information provided by SG1 and ITU-T SG5 and decided to carry forward Document 5A/191 to the next WP 5A meeting for more detailed discussion.

### 4.2.13 WRC-19 agenda item 1.3

Input documents: 5A/147 (WP 5D); 5A/266 (WP 7B); 5A/269 (WP 7B)

Output document: 5A/TEMP/118 (LS to WP 7B)

WG 5A-4 took note of the information provided in Documents 5A/147 and 5A/269 and develop a reply liaison statement to WP 7B in response to the request as contained Document 5A/266.

### 4.2.14 WRC-19 agenda item 1.5

Input documents: 5A/73 (WP 4A); 5A/217 (USA)

Output document: 5A/TEMP/112 (LS to WP 4A)

Based on Document 5A/217, WG 5A-4 developed a reply liaison statement to WP 4A to address their request as contained document 5A/73.

### 4.2.15 WRC-19 agenda item 1.6

Input document: 5A/270 (WP 7D)

WG 5A-4 took note of the information provided by WP 7D on this topic and did not see the need for further action.

### 4.2.16 WRC-19 agenda item 1.7

Input documents: 5A/115 (WP 5B); 5A/121 (WP 5C); 5A/271 (WP 7B)

WG 5A-4 took note of this liaison activity between WPs 5B, 5C and 7B and did not see the need for further action at this point in time.

### 4.2.17 WRC-19 agenda item 1.9.2

Input documents: 5A/120 (WP 5B); 5A/229 (China)

Output document: 5A/TEMP/113 (LS to WP 5B)

Based on Document 5A/229, WG 5A-4 developed a reply liaison statement in response to the request from WP 5B as contained in Document 5A/120.

### 4.2.18 WRC-19 agenda item 1.13

Input documents: 5A/124 (TG 5/1); 5A/125 (Chairmen, SG 3, WP 3J, WP 3K & WP 3M); 5A/177 (WP 4A); 5A/183 (WP 5D); 5A/211 (USA); 5A/226 (IEEE); 5A/265 (Intel)

Output document: 5A/TEMP/116 (LS to TG 5/1)

WG 5A-4 took note of the information contained in Documents 5A/125, 5A/ 177, 5A/183 and 5A/211 and did not see the need for further action. Based on Documents 5A/226 and 5A/265, WG 5A-4 developed a reply liaison statement to TG 5/1 on this issue in response to the request as contained in document 5A/124.

### 4.2.19 WRC-19 agenda item 1.14

Input documents: 5A/116 (WP 5C); 5A/157 (WP 3M); 5A/213 (USA)

Output document: 5A/TEMP/82 (LS to 5C)

WG 5A-4 took note of the information contained in Document 5A/157 and did not see the need for further action. Based on Document 5A/213, WG 5A-4 developed a reply liaison statement to WP 5C on this issue in response to the request as contained in Document 5A/116.

### 4.2.20 EESS 45 MHz (Res. 656)

Input documents: 5A/207 (USA); 5A/263 (IARU)

Output document: 5A/TEMP/114 (LS to WP 7C)

Based on documents 5A/207 and 5A/263, WG 5A-4 developed a liaison statement to WP 7C on this issue.

### 4.2.21 WRC-19 agenda item 9.1, issue 9.1.3

Input documents: 5A/74 (WP 4A); 5A/206 (USA); 5A/258 (Germany)

Output document: 5A/TEMP/115 (LS to 4A)

Based on Documents 5A/206 and 5A/258, WG 5A-4 developed a reply liaison statement to WP 4A on this issue in response to the request as contained in Document 5A/74. It was also decided to revise Report ITU-R M.2116 to bring it up-to-date with the latest technical characteristics as used in recent sharing studies which were provided to WP 4A in the reply liaison statement. Input contributions to the next WP 5A meeting are encourage to progress this revision.

### 4.2.22 WRC-19 agenda item 9.1, Issue 9.1.9

Input documents: 5A/72 (WP 4A); 5A/146 (WP 5D)

Output documents: 5A/TEMP/129 (LS to EOs); 5A/TEMP/130 (LS to WP 4A)

WG 5A-4 took note of the information provided in Document 5A/146 and developed a reply liaison statement to WP 4A on this issue in response to the request as contained in Document 5A/72. Furthermore, a liaison statement to BWA External Organizations was developed to solicit further information that may be relevant for the work on this issue.

### 4.2.23 ITU-T interference

Input document: 5A/162 (ITU-T SG15)

WG 5A-4 took note of the information provided by ITU-T SG15 and did not see the need for further action at this point in time within WG 5A-4 but suggested that WG 5A-1 might want to look at Document 5A/162.

### 4.2.24 WRC-19 agenda item 9.1, issue 9.1.5

Input documents: 5A/197 (Russian Federation); 5A/209 (USA)

Output documents: 5A/TEMP/84 (Workplan); 5A/TEMP/86 (LS to WP 5B); 5A/TEMP/105 (Draft CPM text)

WG 5A-4 updated the draft CPM text for this issue based on Documents 5A/197 and 5A/209 and also developed a liaison statement to WP 5B to request further information for the work on this issue.

### 4.2.25 WRC-19 agenda item 1.16

Input documents: 5A/181 (WP 4A); 5A/196 (Russian Federation); 5A/202 (Switzerland); 5A/203 (Switzerland); 5A/204 (WP 7C); 5A/210 (USA); 5A/231 (China); 5A/241 (France); 5A/243 (Ericsson); 5A/245, 5A/246 and 5A/247 (UK); 5A/252 (Japan); 5A/260 (IARU) and 5A/264 (Luxemburg)

Output documents:

5A/TEMP/121 (draft CPM text)

5A/TEMP/83 (workplan)

5A/TEMP/108 (RLAN compilation document)

5A/TEMP/109 (Working document towards a PDN Report ITU-R M.[RLAN MITIGATION])

5A/TEMP/88 (Working document on RLAN airborne measurements)

5A/TEMP/110 (Working document on RLAN characteristics)

5A/TEMP/120 (Working document on RLAN sharing studies)

5A/TEMP/107 (LS to WPs 3K & 3M)

5A/TEMP/119 (LS to WP 4A)

Based on the above input contributions, WG 5A-4 updated the draft CPM text and the working documents as contained in the Chairman’s Report from the previous meeting. It was also decided to carry forward Documents 5A/247 and 5A/252 to the next WP 5A meeting for further consideration. Furthermore, a liaison statement to WPs 3K and WP 3M was developed to seek advice on propagation models. Additionally, a reply liaison statement to WP 4A was developed to seek additional information relevant for the work on this issue.

## 4.3 Revision of WP 5A texts

WG 5A-4 reviewed Section 1 of Annex 1 to Document 5A/114 and the Guide to the use of ITU-R texts relating to the land mobile service and did not see the need for any changes or updates besides adding a comment in the table in section 1.2 of Annex 1 to Document 5A/114 to indicate that Report ITU-R M.2116 is being revised by WP 5A.

## 4.4 Objectives for the next WP 5A meeting

The objectives for the next meeting related to “Interference and Sharing” are:

– Continue to the work under WRC-19 agenda item 1.16 and the related work on the RLAN mitigation techniques.

– Consider the proposal to revise Recommendation ITU-R M.1652 or to develop a new Recommendation in this regard.

– Create a working document for the revision of Report ITU-R M.2116.

– Review Document 5A/136 on Wireless Power Transmission and provide comments to WP 1A as appropriate.

– Review Document 5A/191 on non-ionizing radiation and provide comments to ITU-D SG2 as appropriate.

– Continue work on the working document on sharing schemes in the land mobile service.

– Provide technical characteristics to WP 4A for the work on WRC-19 agenda item 9.1, issue 9.1.9.

## 4.5 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 all the efforts put into offline drafting activities to advance the various working documents. In particular, I would like to thank Hector Marin for taking on the role as SWG Chair for WRC-19 agenda item 1.16.

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

Working Group 5A-5 (WG 5A-5) met nine times during the 17th meeting of ITU-R WP 5A from 7th to 17th November, 2016. Around 100 delegates from Australia, Germany, Canada, China, France, Ghana, Italy, Japan, Korea, Luxemburg, The Netherlands, Russian Federation, Singapore, Sweden, Thailand, United Arab Emirates, United Kingdom, USA, Ericsson, Intel, Microsoft, Qualcomm and Robert Bosch participated in the meetings. The tasks assigned to WG 5A-5 address new technologies.

Thirty-six input contributions were attributed to WG 5A-5, which were:

|  |  |
| --- | --- |
| – AI 1.12 (ITS, Res. 237) | Documents 5A/ [114](http://www.itu.int/md/R15-WP5A-C-0114/en) [Annex 8](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N08!MSW-E) & [Annex 9](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N09!MSW-E) (WP 5A); [208](http://www.itu.int/md/R15-WP5A-C-0208/en) (USA) |
| – Intelligent transport system (ITS) (Q. 205-5/5) | Documents 5A/[114](http://www.itu.int/md/R15-WP5A-C-0114/en) [Annex 29](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N29!MSW-E) (WP 5A); [165](http://www.itu.int/md/R15-WP5A-C-0165/en) (APT); [216](http://www.itu.int/md/R15-WP5A-C-0216/en) (USA); [221](http://www.itu.int/md/R15-WP5A-C-0221/en) (Canada); [228](http://www.itu.int/md/R15-WP5A-C-0228/en) (Korea); [232](http://www.itu.int/md/R15-WP5A-C-0232/en) (China); [248](http://www.itu.int/md/R15-WP5A-C-0248/en) (Japan and Singapore); |
| – AI 1.15 (Above 275 GHz, Res. 767) | Documents 5A/ [114](http://www.itu.int/md/R15-WP5A-C-0114/en) [Annex 28](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N28!MSW-E) (WP 5A); [122](http://www.itu.int/md/R15-WP5A-C-0122/en) (WP 5C); [126](http://www.itu.int/md/R15-WP5A-C-0126/en) (WP 1A); [131](http://www.itu.int/md/R15-WP5A-C-0131/en) (WP 1A); [133](http://www.itu.int/md/R15-WP5A-C-0133/en) (WP 1A); [156](http://www.itu.int/md/R15-WP5A-C-0156/en) (WP 3M); [163](http://www.itu.int/md/R15-WP5A-C-0163/en) (WPs 3K & 3M); [201](http://www.itu.int/md/R15-WP5A-C-0201/en) (CEPT CPG PTA); [225](http://www.itu.int/md/R15-WP5A-C-0225/en) (IEEE); [249](http://www.itu.int/md/R15-WP5A-C-0249/en) (Japan); [257](http://www.itu.int/md/R15-WP5A-C-0257/en) (Germany); [268](http://www.itu.int/md/R15-WP5A-C-0268/en) (WP 7C) |
| – Raillink | Documents 5A/ [114 Annex 30](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N30!MSW-E) (WP 5A), [256](http://www.itu.int/md/R15-WP5A-C-0256/en) (Japan) |
| – /9.1.8 (MTC, Res. 958) | Documents 5A/ [151](http://www.itu.int/md/R15-WP5A-C-0151/en) (WP 5D); [161](http://www.itu.int/md/R15-WP5A-C-0161/en) (WP 5D); [164](http://www.itu.int/md/R15-WP5A-C-0164/en) (ITU-T SG 20); [171](http://www.itu.int/md/R15-WP5A-C-0171/en) (ITU-T JCA-IoT & SC&C); [193](http://www.itu.int/md/R15-WP5A-C-0193/en) (WP 5D) |
| – Dynamic Access -Technology | Documents 5A/ [127](http://www.itu.int/md/R15-WP5A-C-0127/en) (WP 1B); [129](http://www.itu.int/md/R15-WP5A-C-0129/en) (WP 1B); [149](http://www.itu.int/md/R15-WP5A-C-0149/en) (WP 5D); [205](http://www.itu.int/md/R15-WP5A-C-0205/en) (WP 7C) |
| – mmWave systems | Documents 5A/[52](http://www.itu.int/md/R15-WP5A-C-0052) (Japan); [212](http://www.itu.int/md/R15-WP5A-C-0212/en) (USA); [250](http://www.itu.int/md/R15-WP5A-C-0250/en) (Japan) |

WG 5A-5 established a Sub-working Group (SWG) and its Drafting Group (DG) to facilitate its work:

|  |  |
| --- | --- |
| **SWG/DG** (**Chairman**) | **Terms of Reference** |
| SWG 5A-5-1 – ITS: Intelligent Transport System  (Mr. Satoshi Oyama, Japan) | – Develop a draft CPM Text outline for WRC-19 AI 1.12  – Update work plan for WRC-19 A.I. 1.12  – Develop a working document toward a draft new Report ITU-R M.[ITS USAGE] on Intelligent transport systems usage report in ITU-R member countries. |
| DG 5A-5-1-1 – ITS Usage  (Ms. Bettina Erdem, CEPT) | – Develop a working document towards a preliminary draft new Report ITU-R M.[ITS USAGE] |

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

SWG 5A-5-1 on ITS and DG 5A-5-1-1 on ITS Usage met six times each, during the 17th meeting of WP 5A.

## 5.1 Executive summary

WG 5A-5 completed its work on the development of a preliminary draft new Report ITU-R M.[RAIL.LINK] of an introduction to railway communication systems in certain countries.

WG 5A-5 continued its work on WRC-19 agenda item 1.12 (ITS, Resolution 237), and working on a draft CPM Text and updated work plan for this agenda item.

WG 5A-5 continued to develop a working document toward a preliminary draft new Report ITU-R M.[ITS USAGE] of Intelligent transport systems usage report in ITU-R member states.

WG 5A-5 continued its work on the development of a preliminary draft new Report ITU-R M.[300GHz\_MS\_CHAR] on technical and operational characteristics of the land mobile service in the frequency range 275-450 GHz

## 5.2 Intelligent transport system (ITS)

WG 5A-5 considered twelve input contributions and developed four output documents:

1 Preliminary draft CPM text for WRC-19 A.I. 1.12 (Document 5A/TEMP/66).

2 Draft work plan for WRC-19 A.I. 1.12 (Document 5A/TEMP/126(Rev.1))

3 A working document toward a preliminary draft new Report M.[ITS USAGE] of Intelligent Transport Systems Usage Report in ITU Member States (Document 5A/TEMP/125); and

4 Liaison Statement to 3GPP: Intelligent Transport Systems (ITS) (Document 5A/TEMP/131(Rev.1)).

Input contributions from administrations and external organizations, were introduced in the meetings. Having considered these input contributions, WG 5A-5 recognised that it is needed to develop some texts from information in these contributions in order to include these useful information in Report ITU-R M.[ITS USAGE] and a draft CPM text on WRC-19 agenda item 1.12.

Regarding Document [5A/228](http://www.itu.int/md/R15-WP5A-C-0228/en) (KOR), it was agreed to include the contents of this contribution to M.[ITS USAGE] rather than Land Mobile Handbook Vol. 4 – ITS.

The Document [5A/232](http://www.itu.int/md/R15-WP5A-C-0232/en) (CHN) included the information on LTE-V2X standardization activities in China and 3GPP. WG 5A-5 developed a draft liaison statement to 3GPP, requesting more information from 3GPP for developing preliminary draft new Report ITU-R M.[ITS USAGE]. In the development of the draft, SWG 5A5-1 (ITS) considered several questions listed in the liaison statement. Finally, the draft liaison statement to 3GPP was agreed in SWG 5A5-1 (ITS) (Document 5A/TEMP/131).

Regarding the revision of the handbook volume 4 "Intelligent Transport Systems" of the Land Mobile Handbook (LMH), several Region 3 administrations will provide a draft contents by the next WP 5A meeting in May 2017.

Therefore, further contributions; particularly from those administrations and external organizations, i.e. contributors of the Documents: [5A/165](http://www.itu.int/md/R15-WP5A-C-0165/en) (APT); [208](http://www.itu.int/md/R15-WP5A-C-0208/en) (USA); [216](http://www.itu.int/md/R15-WP5A-C-0216/en) (USA); [221](http://www.itu.int/md/R15-WP5A-C-0221/en) (Canada); [232](http://www.itu.int/md/R15-WP5A-C-0232/en) (China); [248](http://www.itu.int/md/R15-WP5A-C-0248/en) (Japan and Singapore) and [228](http://www.itu.int/md/R15-WP5A-C-0228/en) (Korea) are invited to the 18th meeting of WP 5A.

## 5.3 Report ITU-R M.[RAIL.LINK]

WG 5A-5 editorially updated and finalised a preliminary draft new Report ITU-R M.[RAIL.LINK] during the 17th meeting of WP 5A. In the mid-plenary of WP 5A on 11 November 2016, the Report was approved to be sent to SG 5, with modification of the title of the Report from “*Introduction to specific railway communication systems in the millimetric wave frequency range specific*” to “*Introduction to railway communication systems in certain countries*” so that the title can more clearly show the contents of the Report (Document 5A/TEMP/64(Rev.1)).

## 5.4 Technical and operational characteristics of the land mobile service in the frequency range 275-450 GHz (WRC-19 agenda item 1.15)

WG 5A-5 continued its work on technical and operational characteristics of the land mobile service in the frequency range 275-450 GHz. Based on input contributions, WG 5A-5 updated the working document towards a preliminary draft new Report ITU-R M.[300GHz\_MS\_CHAR] on technical and operational characteristics of the land mobile service in the frequency range 275-450 GHz (Document 5A/TEMP/67(Rev.1)).

WG 5A-5 also developed a liaison statement to External Organisation of ITU to further invite contributions so that the report can fully address the issues pertinent to technical and operational characteristics of land mobile systems associated with work on WRC-19 agenda item 1.15 (Document 5A/TEMP/68(Rev.1)).

WP 5A-5 further developed a reply liaison statement to WP 1A to provide information on the development of this Report (Document 5A/TEMP/69(Rev.1)).

WP 5A-5 drafted a liaison statement to WP 3M on candidate frequency bands for use by systems in the land mobile service in the range 275-450 GHz based on an input contribution (Document [5A/257](http://www.itu.int/md/R15-WP5A-C-0257/en)). WG 5A-5, however, did not send it to WP 5A Plenary because the liaison statement to WP 1A (Document 5A/TEMP/69(Rev.1)) was to be copied for information to WP 3M and it was recognized that no additional information may not be required to WP 3M beyond that of the liaison statement to WP 1A.

## 5.5 Millimetric-wave system

WGs 5A-2 and 5A-5 jointly considered two input contributions (Documents [5A/212](http://www.itu.int/md/R15-WP5A-C-0212/en) and [5A/250](http://www.itu.int/md/R15-WP5A-C-0250/en)) at their joint meetings. WGs 5A-2 and 5A-5 concluded that “*Close Proximity Point-to-Point Radiocommunication Systems Operating in the Millimeter-Wave Bands* above *60 GH*z” were to be considered under the revision of Recommendation ITU-R M.2003-1 and Report ITU-R M.2227-1 in WG 5A-2. These contributions were sent to WG 5A-2 for further consideration.

## 5.6 WRC-19 agenda item 9.1, issue 9.1.8 (MTC, Res. 958)

WP 5A received a liaison statement from WP 5D on WRC-19 agenda item 9.1, issue 9.1.8, on “Studies on the technical and operational aspects of radio networks and systems, as well as spectrum needed, including possible harmonized use of spectrum to support the implementation of narrowband and broadband machine-type communication infrastructures, in order to develop Recommendations, Reports and/or Handbooks, as appropriate, and to take appropriate actions within the ITU Radiocommunication Sector (ITU-R) scope of work”. WG 5A-5 developed a reply liaison statement to WP 5D which provided information regarding activities under WP 5A’s purview related to Internet of Things (IoT): Recommendation [ITU-R M.2002](http://www.itu.int/rec/R-REC-M.2002/en) and Report [ITU-R M.2224](http://www.itu.int/pub/R-REP-M.2224) (Document 5A/TEMP/81).

During the discussion of Machine Type Communications (MTC), WP 5A discussed its possible future work on the development of a new Report on Machine Type Communications by systems under the purview of WP 5A from its May 2017 meeting, taking into account the information provided at the floor of the WG 5A-5 meetings from an external organization of ITU, e.g. wireless industry applications. WG 5A-5 recognised that the work of the development of the possible new Report depends on formal input contributions to the next WP 5A meeting in May 2017. WG 5A-5 concluded that the work plan was, therefore, not developed at the 17th meeting of WP 5A. WG 5A-5 decided to invite contributions to the next WP 5A meeting from External Organizations on Machine Type Communications by land mobile systems, excluding IMT. For this purpose, a liaison statement to External Organization was developed (Document 5A/TEMP/79(Rev.1)).

WP 5A received a liaison statement from ITU-T SG20 on “New ITU-T SG20” pertinent to its activities on Internet of Things (IoT). WP 5A also received a liaison statement from ITU-T Joint Coordination Activity on Internet Of Things (JCA-IOT) and Smart Cities and Communities (SC&C). WG 5A-5 developed two liaison statements beck to ITU-T SG 20 and JCA-IOT and SC&C, providing WP 5A’s activities on IoT (Recommendation ITU-R M.2002 and Report ITU-R M.2224) (Documents 5A/TEMP/87 and 5A/TEMP/89(Rev.1)).

## 5.7 Cognitive Radio System (CRS) and Dynamic Spectrum Access (DSA)

WP 5A received a liaison statement from WP 1B seeking WP 5A’s comment on WP 1B’s working document towards a preliminary draft new Report ITU-R SM.[CRS SPECTRUM MANAGEMENT CHALLENGES]. WP 5A-5 reviewed the WP 1B’s working document and developed a reply liaison statement conveying that WP 5A has no comment at this time (Document 5A/TEMP/80).

## 5.8 Review of ITU-R texts

WG 5A-5 reviewed ITU-R texts pertinent to WG 5A-5 in Annex 1 to Doc. [5A/114](http://www.itu.int/md/R15-WP5A-C-0114/en) (WP 5A).

There were no views on suppression or revision with regard to the existing ITU-R Recommendations, Reports and Handbooks relating to WG 5A-5. The meeting agreed to retain all the ITU-R Recommendations, Reports and Handbooks relating to WG 5A-5. WG 5A-5 also reviewed the Guide to the use of ITU-R texts related to the land mobile service. There was no comment on the Guide.

## 5.9 Future work

WG 5A-5 continues the development of a working document towards a preliminary draft new Report ITU-R M.[ITS USAGE].

WG 5A-5 continues the update of the handbook volume 4 "Intelligent Transport Systems" of the Land Mobile Handbook (LMH).

WG 5A-5 continues its work on the development of a working document towards a preliminary draft new Report ITU-R M.[300GHz\_MS\_CHAR] on technical and operational characteristics of the land mobile service in the frequency range 275- 450 GHz.

WG 5A-5 may initiate its work on developing a working document on Machine Type Communications within the purview of WP 5A, upon a possible receipt of input contributions to the next WP 5A meeting in May 2017.

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

Hitoshi Yoshino,  
 Chairman, WG 5A-5

**Attachment:**

[Attachment 5](#att5): Work plan for the development of a new Report ITU-R M.[ITS USAGE] on the usage of intelligent transport systems in ITU-R member states.

Attachment 1 to Annex 3

terms of reference – correspondence group CG-5A-1

Improvement of Working Document towards PDNR ITU-R M.[RAIL.RSTT]

(Source: Document 5A/TEMP/123(Rev.1))

This Correspondence Group (CG) is going to work from the closure of 17th meeting (November 2016) of WP 5A to 18th meeting (May 2017) of WP 5A. This CG aims to improve the Working Document towards preliminary draft new Report ITU-R M.[RAIL.RSTT] by reviewing information contained in the existing responses to the questionnaire and to categorize them into correct applications of Chapter 4 to the PDNR by filling the right tables.

The CG will work in accordance with § A1.3.2.9 and § A1.3.2.10 of Resolution ITU-R 1-7[[2]](#footnote-2), and will prepare a summary Report of the CG activities and a contribution document to next WP 5A meeting, before April 14th, 2017.

**Correspondence Group Convenor:** Ms. Ying XU (CHN) (e-mail: [xuying@srrc.org.cn](mailto:xuying@srrc.org.cn))

**Editor:** Mr. Kawasaki (J) (e-mail: [kawasaki.kunihiro.29@rtri.or.jp](mailto:kawasaki.kunihiro.29@rtri.or.jp))

**CG SharePoint:** <https://extranet.itu.int/rsg-meetings/sg5/wp5a/Share/Forms/Column%20view.aspx>

**Participants:** Representatives of Member States, Sector Members, Associates and Academia and other interested parties.

Attachment 2 to Annex 3

Workplan for a preliminary draft new Report ITU-R M.[DPLMR]

(Source: Document 5A/TEMP/99(Rev.1))

|  |  |
| --- | --- |
| **Title** | Workplan for a preliminary draft new Report “Digital Private Land Mobile Radios” |
| **Identifier** | DPLMR |
| **WP 5A Lead Group** | Working Group 2: Systems and standards |
| **DG Chair** | Mr. David Tejeda, Mexico **E-mail:** [david.tejeda@ift.org.mx](mailto:david.tejeda@ift.org.mx) |
| **Focus for scope and work1** | This Report deals with the technical and operational characteristics of digital private land mobile radios systems that provide capabilities required for specific user groups/applications, such as governmental, mining, health, hospitality, transportations, disaster relief , industrial, manufacturing, etc.  Issues relating to PPDR are covered in Report ITU-R M.2009, Report ITU-R M.2377 and Recommendation ITU-R M.2015.  Issues relating to PLMR for dispatch applications are covered in Report ITU-R M.2014. |
| **Related documents** | Question ITU-R 37-6/5  Report ITU-R M.2014  [Others] |
| **Milestones** | **16th Meeting of WP 5A (May, 2016)**  1. Discuss and develop details of scope of work and work plan  2. Outline the structure of working document  3. Develop liaison statements as appropriate  **17th Meeting of WP 5A (November, 2016)**  1. Consider the received input contributions  2. Continue to develop the working document  3. Review the work plan if needed  4. If necessary, develop liaison statements as appropriate  **18th Meeting of WP 5A (May, 2017)**  1. Consider the received input contributions  2. Review and discuss received contributions  3. Continue to develop a working document  4. Review the work plan if needed  5. Consider the potential need for a questionnaire and approve if agreed  6. If necessary, develop liaison statements as appropriate  **19th Meeting of WP 5A (November, 2017)**  1. Consider the received input contributions  2. Review and discuss received contributions  3. Stabilize the contents of working document  4. Elevate the working document to a PDNR  **20th Meeting of WP 5A (May, 2018)**  1. Consider the received input contributions  2. Finalize the Report and submit to SG 5 for approval |

Attachment 3 to Annex 3

Proposed uniform structure for presenting the frequency arrangements within the annexes of Recommendation ITU-R M.2015

(Source: Document 5A/TEMP/132)

Issue

There is currently no common approach to presenting the frequency arrangements within the annexes of Recommendation ITU-R M.2015. A more standardised approach may provide greater clarity and facilitate understanding. Administrations and regional bodies that have submitted or will submit arrangements for consideration for inclusion in the Recommendation are encouraged to use this proposed structure.

Proposed Structure

– Title of the arrangement

**Example:** Only the underlined and italicized text below would change

Annex *1* Subsection *1:* Harmonized frequency arrangements within the frequency range *698 to 791 MHz* in accordance with the *CEPT* harmonization measures[[3]](#footnote-3) for *broadband* PPDR

Or

Annex *XX* Subsection *YY*: Examples of frequency arrangements within the frequency range *aa to bb MHz* in some countries of Region *X* for *narrowband* PPDR

– Table describing the arrangement(s)

**Example:** Using the same example above, the table could be shown as follows:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Frequency arrangement | Paired arrangements | | | | Notes |
| Mobile station TX (MHz) | Centre gap (MHz) | Base station TX (MHz) | Duplex separation (MHz) |
| a) | 698-703 | 50 | 753-758 | 55 | LRTC specified in Annex 1 of ECC/DEC/(16)02 |
| b) | 703-733 | 25 | 758-763 | 55 | LRTC specified in ECC/DEC/(15)01 |
| c) | 733-736 | 52 | 788-791 | 55 | LRTC specified in Annex 1 of ECC/DEC/(16)02 |

– Diagram describing the arrangement

**Example:** Using the same example above, the diagram could be shown as follows:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 698-703 | 703-708 | 708-713 | 713-718 | 718-723 | 723-728 | 728-733 | 733-736 | 736-752 | 753-758 | 758-763 | 763-768 | 768-773 | 773-778 | 778-783 | 783-788 | 788-791 |
| PPDR  a)  up-link | PPDR  b)  uplink  (MFCN) | | | | | | PPDR  c)  up-link | … | PPDR  a)  down-link | PPDR  b)  downlink  (MFCN) | | | | | | PPDR  c)  down-link |
| 5 MHz | 30 MHz (6 blocks of 5 MHz) | | | | | | 3 MHz |  | 5 MHz | 30 MHz (6 blocks of 5 MHz) | | | | | | 3 MHz |

– Table describing the channelling arrangements or channel plan

**Example:** Using the same example above, the table could be shown as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Channel number | Mobile station transmit Channel centre frequency (MHz) | Base station transmit Channel centre frequency (MHz) | Channel bandwidth (MHz) |
| *N = 1 to 6* | *fN = 703 - 2.5 + N x 5* | *fN = 758 - 2.5 + N x 5* | *5* |

**– Further explanatory text for the arrangement**

**Example:** *Administrations requiring 2x10 MHz for BB-PPDR, as calculated in Report ITU-R M.2377-0 and ECC Report 199, and authorizing the full 2x30 MHz in option b) for commercial MFCN can no longer identify 2x10 MHz for dedicated BB-PPDR networks within the 700 MHz band. These administrations may therefore need to use the remaining part as shown in option a) and c) and additionally use the 400 MHz range (see frequency arrangement R1-1-2).*

*For further information on BB-PPDR in CEPT please see ECC/DEC/(16)02 and the relevant reports mentioned therein.*

Attachment 4 to Annex 3

Workplan for preliminary draft new Report ITU-R M.[PPDR SPECTRUM] and consequential revision of Report ITU-R M.2377

(Source: Document 5A/TEMP/70)

1) 16th meeting of WP 5A May 2016

a) initiate development of a working document towards a preliminary draft new (PDN) Report ITU-R M.[PPDR SPECTRUM];

b) develop a workplan;

c) liaise the workplan to relevant groups and external organizations, as appropriate.

2) 17th meeting of WP 5A November 2016

a) further develop working document towards a PDN Report ITU-R M.[PPDR SPECTRUM];

b) liaise with relevant groups and external organization, as appropriate.

3) 18th meeting of WP 5A May 2017

a) further develop and elevate to PDN Report ITU-R M.[PPDR SPECTRUM] for WP 5A agreement;

b) initiate consequential changes to Report ITU-R M.2377;

c) liaise with relevant groups, as appropriate.

4) 19th meeting of WP 5A November 2017

a) finalize draft revision of Report ITU-R M.2377 and submit for SG 5 approval;

b) submit draft Report ITU-R M.[PPDR SPECTRUM] for SG 5 approval;

c) liaise with relevant groups, as appropriate.

Attachment 5 to Annex 3

Work plan for the development of a new Report ITU-R M.[ITS USAGE] on the usage of intelligent transport systems in ITU-R Member States

(Source: Document 5A/TEMP/136)

|  |  |
| --- | --- |
| **Title** | Workplan for the development of a new Report ITU-R M.[ITS USAGE] on the usage of intelligent transport systems in ITU-R Member States |
| **Document type** | Report |
| **WP 5A Lead Group** | WG 5 New Technologies |
| **SWG Chairman** | Mr. Satoshi (Sam) Oyama; **E-mail:** [s-oyama@arib.or.jp](mailto:s-oyama@arib.or.jp) |
| **Editor** | Ms. Bettina Erdem; **E-mail:** [bettina.erdem@continental-corporation.com](mailto:bettina.erdem@continental-corporation.com) |
| **Focus for scope and work** | This report addresses the usages of ITS radiocommunication applications, such as vehicle to infrastructure, vehicle to vehicle, vehicle to pedestrian communications for road safety applications and vehicular radars for collision avoidance in ITU Member states. |
| **Related Documents** |  |
| **Milestones** | **13th meeting (May 2014)**  – Develop and adopt work plan  – Carry forward the framework of working document toward a PDN Report  **14th meeting (November 2014)**  – Develop working document toward a PDN Report  – Liaise as needed with concerned and interested organizations on development of the PDN Report  – Update work plan as needed.  **15th meeting (July 2015)**  – Continue developing working document toward a PDN Report  – Liaise as needed with concerned and interested organizations on development of the PDN Report  – Update work plan as needed  **16th meeting (May 2016)**  – Continue developing working document toward a PDN Report  – Liaise as needed with concerned and interested organizations on development of the PDN Report  – Update work plan as needed  **17th meeting (November 2016)**  – Continue developing working document toward a PDN Report  – Liaise as needed with concerned and interested organizations on development of the PDN Report  – Update work plan as needed  **18th meeting (May 2017)**  – Developing a PDN Report  – Liaise as needed with concerned and interested organizations on development of the PDN Report  – Update work plan as needed  **19th meeting (November 2017)**  – Finalize Report and submit to SG 5 meeting for approval |

1. Administrations are encouraged to:

   – carefully review their information of RSTT contained in the existing responses to the questionnaire and to categorize them into correct applications by filling them into the right tables within Chapter 4 to the Working Document ([Annex 16](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N16!MSW-E) to Doc.5A/298);

   – contribute actively to the next WP 5A meeting, further providing their technical and operational information on RSTT and filling them into proper tables within Chapter 4, and also providing brief introductions and spectrum requirements of their systems of RSTT ([Annex 16](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N16!MSW-E) to Doc.5A/298). [↑](#footnote-ref-1)
2. A1.3.2.9 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.

   A1.3.2.10 Participation in the work of the Rapporteur Groups, Joint Rapporteur Groups 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 the case may be, making the submission. [↑](#footnote-ref-2)
3. Reference to specific document. [↑](#footnote-ref-3)