|  |  |  |
| --- | --- | --- |
|  | **Radiocommunication Study Groups** |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** |  |
|  |  |
| Source: Documents 5A/TEMP/17, 32, 43, 60, 61, 62, 63 | **Annex 3 toDocument 5A/114-E** |
| **30 May 2016** |
| **English only** |
| Annex 3 to Working Party 5A Chairman’s Report |
| consolidation of reports from the working groupsof working party 5a |
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[Attachment 1](#att1): Workplan for a preliminary draft new Report ITU-R M.[DLMSA].

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[Attachment 3](#att3): Workplan for preliminary draft new Report ITU-R M.[PPDR SPECTRUM] and possible consequential revision of Report ITU-R M.2377.

[Attachment 4](#att4): Work plan for the development of a new Report ITU-R M.[RAIL.LINK] of introduction to specific railway communication systems in the millimetric wave frequency range.

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-0114!N31!MSW-E) of Doc. [5A/114](http://www.itu.int/md/R15-WP5A-C-0114/en) to find the final disposition of these documents by Working Party 5A.

LIST OF INPUT CONTRIBUTIONS CARRIED FORWARD TO THE NEXT WP 5A MEETING:

WG 5A-2 / WG 5A-5: Document [5A/52](http://www.itu.int/md/R15-WP5A-C-0052) (Japan).

WG 5A-3: Documents 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, UK); [90](http://www.itu.int/md/R15-WP5A-C-0090) (Motorola Solutions); [102](http://www.itu.int/md/R15-WP5A-C-0102) (UAE, Bahrain, Kuwait, Palestine).

WG 5A-4: Documents 5A/[700](http://www.itu.int/md/R12-WP5A-C-0700/en), [703](http://www.itu.int/md/R12-WP5A-C-0703/en) (Canada); [38](http://www.itu.int/md/R15-WP5A-C-0038) (WP 7C); [49](http://www.itu.int/md/R15-WP5A-C-0049) (Russian Federation); [57](http://www.itu.int/md/R15-WP5A-C-0057) (Switzerland);
[64](http://www.itu.int/md/R15-WP5A-C-0064) (France); [72](http://www.itu.int/md/R15-WP5A-C-0072), [73](http://www.itu.int/md/R15-WP5A-C-0073), [74](http://www.itu.int/md/R15-WP5A-C-0074) (WP 4A); [81](http://www.itu.int/md/R15-WP5A-C-0081) (Australia); [88](http://www.itu.int/md/R15-WP5A-C-0088) (Luxemburg); [92](http://www.itu.int/md/R15-WP5A-C-0092) (UK); [96](http://www.itu.int/md/R15-WP5A-C-0096) (ESA); [97](http://www.itu.int/md/R15-WP5A-C-0097) (EUMETSAT); [98](http://www.itu.int/md/R15-WP5A-C-0098) (China).

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

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

|  |  |
| --- | --- |
| **AI 1.1 (Res. 658)** | [9](http://www.itu.int/md/R15-WP5A-C-0009) (WP 6A); [50](http://www.itu.int/md/R15-WP5A-C-0050) (Russian Federation); [79](http://www.itu.int/md/R15-WP5A-C-0079) (Australia); [86](http://www.itu.int/md/R15-WP5A-C-0086), [87](http://www.itu.int/md/R15-WP5A-C-0087) (IARU); |
| **Amateur texts (M.1732)** | [736](http://www.itu.int/md/R12-WP5A-C-0736/en) [Annex 4](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0736!N04!MSW-E) (WP 5A); [43](http://www.itu.int/md/R15-WP5A-C-0043) (Canada); [78](http://www.itu.int/md/R15-WP5A-C-0078) (Brazil); [101](http://www.itu.int/md/R15-WP5A-C-0101) (IARU) |
| **Misc** | [738](http://www.itu.int/md/R12-WP5A-C-0738) (for comment via WG5A-4); [76](http://www.itu.int/md/R15-WP5A-C-0076) (USA); |

During this block of meetings WG 5A-1 did the following work:

1 Responded to liaison statement in Document [5A/9](http://www.itu.int/md/R15-WP5A-C-0009) (WP 6A). The response liaison statement 5A/TEMP/7 provided information requested by WP 6A and asked further questions relevant to WRC-19 agenda item 1.1

2 Generated a liaison statement (5A/TEMP/6) to WP 1A on Wireless Power Transfer in response to Document [5A/738](http://www.itu.int/md/R12-WP5A-C-0738). The liaison statement provided relevant information to WP 1A on band usage in the 100 to 300 kHz frequency band and requested that WP 1A keep WP 5A informed of its work on Wireless Power Transfer.

3 Developed a working document towards a Preliminary New Draft Report ITU-R M.[AMATEUR 50 MHz] from input contributions [5A/50](http://www.itu.int/md/R15-WP5A-C-0050) (Russian Federation) and [5A/87](http://www.itu.int/md/R15-WP5A-C-0087) (IARU). This document will go forward as Document 5A/TEMP/35. NOTE: Administrations are requested to check the validity of data contained in table 1 of this the draft Report so that the most up-to-date information is available for ongoing studies under WRC-19 agenda item 1.1.

4 A working document towards draft CPM text for WRC-19 agenda item 1.1 was developed from input contribution [5A/86](http://www.itu.int/md/R15-WP5A-C-0086) (IARU) and this document will go forward as Annex 4 of the WP 5A Chairman’s Report.

5 A work plan covering work on WRC-19 agenda item 1.1 was developed from input contributions [5A/50](http://www.itu.int/md/R15-WP5A-C-0050) (Russian Federation) and [5A/79](http://www.itu.int/md/R15-WP5A-C-0079) (Australia). The work plan will go forward as Annex 5 of the WP 5A Chairman’s Report and will be updated as work progresses on WRC-19 agenda item 1.1 in future WP 5A meetings.

6 Revisions to Report ITU-R M.1732 have progressed very well. Input contributions [5A/736](http://www.itu.int/md/R12-WP5A-C-0736/en) [Annex 4](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0736!N04!MSW-E) (WP 5A); [5A/43](http://www.itu.int/md/R15-WP5A-C-0043) (Canada); [5A/78](http://www.itu.int/md/R15-WP5A-C-0078) (Brazil) and [5A/101](http://www.itu.int/md/R15-WP5A-C-0101) (IARU) were included or addressed in the draft revised Report. The revised Report will go forward as Document 5A/TEMP/29. It is expected that the revisions will be complete by the end of the November 2016 WP 5A meeting and the revised Recommendation ITU-R M.1732 will be ready for submission to SG 5 following the November 2016 WP 5A meeting.

7 A working document towards a preliminary draft new Report or Recommendation ITU‑R M.[AMATEUR WJST] was created from input contribution [5A/76](http://www.itu.int/md/R15-WP5A-C-0076) (USA). Working Document 5A/TEMP/34 provides information on innovative developments in communications techniques used by the amateur service when using radio channels with very low signal-to-noise ratios. Further work will be done on this document in coming WP5A meetings.

8 A draft letter (5A/TEMP/31) to be sent by BR was developed to request Administrations to update entries in the MIFR covering the frequency band 50‑54 MHz as this is important for studies required for WRC-19 agenda item 1.1. (Note: Doc. 5A/TEMP/31 was edited at the closing plenary of WP 5A; cf. [Annex 2](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N02!MSW-E)).

The WG 5A-1 chair enjoyed working with all the delegates and is grateful for their thoughtful input contributions and general goodwill.

Dale Hughes

Chairman Working Group 5A-1, Amateur and Amateur Satellite Services.

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

## 2.1 Executive summary

Work on WRC-19 agenda item (AI) 1.11 was initiated. A Work of development of preliminary draft new Report ITU-R M.[DLMSA] was initiated. Work continued 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”.

## 2.2 Systems and standards

Working Group 5A-2 met five times at the sixteenth meeting of WP 5A in Geneva with approximately 40 delegates in attendance. Working Group 5A-2 received the 22 documents remanded by the WP 5A Plenary as follows:

|  |  |
| --- | --- |
|  | Document 5A/… |
| 2.2.1 AI 1.11 (Railways Res. 236) | [13](http://www.itu.int/md/R15-WP5A-C-0013) (APT); [48](http://www.itu.int/md/R15-WP5A-C-0048) (Russian Federation); [51](http://www.itu.int/md/R15-WP5A-C-0051) (Japan); [61](http://www.itu.int/md/R15-WP5A-C-0061), [62](http://www.itu.int/md/R15-WP5A-C-0062), [63](http://www.itu.int/md/R15-WP5A-C-0063) (China) |
| 2.2.2 Broadband Wireless Access | [743](http://www.itu.int/md/R12-WP5A-C-0743) (WP 5C); [10](http://www.itu.int/md/R15-WP5A-C-0010) (WP 6B); [24](http://www.itu.int/md/R15-WP5A-C-0024) (WP 5D); [83](http://www.itu.int/md/R15-WP5A-C-0083) (Indonesia) |
| 2.2.3 Hearing aids and related | [3](http://www.itu.int/md/R15-WP5A-C-0003) (ITU-T SG 16); [11](http://www.itu.int/md/R15-WP5A-C-0011) (JCA-AHF); [21](http://www.itu.int/md/R15-WP5A-C-0021) (WP 5D) |
| 2.2.4 Land mobile systems | [736](http://www.itu.int/md/R12-WP5A-C-0736/en) [Annex 5](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0736!N05!MSW-E) (WP 5A); [59](http://www.itu.int/md/R15-WP5A-C-0059) (China); [69](http://www.itu.int/md/R15-WP5A-C-0069) (Mexico) |
| 2.2.5 ANTs & HNTs | [17](http://www.itu.int/md/R15-WP5A-C-0017), [18](http://www.itu.int/md/R15-WP5A-C-0018), [19](http://www.itu.int/md/R15-WP5A-C-0019) (ITU-T SG 15)  |
| 2.2.6 Out-of-band emissions | [25](http://www.itu.int/md/R15-WP5A-C-0025) (WP 5D) |
| 2.2.7 Vocabulary | [29](http://www.itu.int/md/R15-WP5A-C-0029) (CCV & SCV) |
| 2.2.8 Millimetre-wave systems | [52](http://www.itu.int/md/R15-WP5A-C-0052) (Japan) (Joint meeting with WG 5A-5) |

Working Group 5A-2 set up one sub-working group and two drafting groups to deal with WRC-19 AI 1.11 Railway, Hearing Aids and PLMR respectively:

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

– DG 5A2-1 Hearing Aids Mr. Brian Copsey

– DG 5A2-2 PLMR Mr. David Tejeda

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

Sub-Working Group (SWG 5A-2-1 A.I. Railway) was established to deal with the preparation issues for WRC-19 AI 1.11. SWG 5A-2-1 met seven times, considered all six contribution documents and carried out 6 documents to WG 5A-2 for consideration.

The following issues were discussed.

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

– Contribution Document: [5A/63](http://www.itu.int/md/R15-WP5A-C-0063) (China)

– Output: Doc. 5A/TEMP/42

During the discussion, it was agreed to start a survey study on Railway Radiocommunication Systems, however it was not reached in consensus whether to establish a Report ITU-R [Rail.Usage] based on the survey result. Some Administrations are of the view that, “to consider or otherwise to draft the Working document towards a PDN Report ITU-R [Rail.Usage]” could be written into the work plan on as a placeholder. It was agreed not to add this sentence in the workplan at this meeting and it will be further discussed in the next WP 5A meeting when reviewing and revising the work plan.

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

– Contribution Document: None

– Output: Doc. 5A/TEMP/38

It was agreed to first have the outline of the working document towards draft CPM Text for WRC‑19 AI 1.11 and to improve this document in the next WP 5A meeting.

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

– Contribution Document: [5A/51](http://www.itu.int/md/R15-WP5A-C-0051) (Japan)

– Output: Doc. 5A/TEMP/49

In regard to the Working Document, whether to have a Chapter on “*overview of global and regional regulatory information for the RSTT within exiting mobile service allocations”* was not reached in consensus. It was also agreed that this issue to be mentioned in this Chairman’s Report and will be further discussed in the next WP 5A meeting.

d) Draft liaison statement to external organizations

– Contribution Document: None

– Output: Doc. 5A/TEMP/45(Rev.1)

A draft liaison statement to external organizations was agreed to submit to WG 5A-2, seeking information limited to railway traffic control, passenger safety and security for train operations, as well as the implemented international and regional standards.

e) Draft liaison statement to WP 3K

– Contribution Document: [5A/48](http://www.itu.int/md/R15-WP5A-C-0048) (Russian Federation)

– Output: Doc. 5A/TEMP/46(Rev.1)

A draft liaison statement to WP 3K was agreed to submit to WG 5A-2, requesting WP 3K to provide relevant advices on the Doppler Effect in railway radiocommunication systems between high-speed trains and tracksides.

f) Draft Circular Letter on survey on the usage of Railway Radiocommunication Systems

– Contribution Document: [5A/62](http://www.itu.int/md/R15-WP5A-C-0062) (China)

– Output: Doc. 5A/TEMP/47(Rev.1)

A draft circular letter was agreed to submit to WG 5A-2, initiating a survey on the usage of Railway Radiocommunication Systems. The questionnaire is also provided as annex to this Circular Letter.

g) Other business

– Contribution Document: [5A/13](http://www.itu.int/md/R15-WP5A-C-0013) (APT), [5A/61](http://www.itu.int/md/R15-WP5A-C-0061) (China)

– Output: None

Document [5A/13](http://www.itu.int/md/R15-WP5A-C-0013) (APT) is a Liaison Statement from APT, indicating their establishment of Task Group on railway radiocommunication issue. SWG 5A-2-1 noted this document.

Document [5A/61](http://www.itu.int/md/R15-WP5A-C-0061) (China) proposes the Terms of Reference (ToR) of this SWG. It was agreed that it is not necessary to draft a TOR for this SWG.

In the last meeting of SWG 5A-2-1, the Chairman of this SWG thanked all participants for their supports, efforts and cooperation upon the preparation for WRC-19 AI 1.11, and closed the meeting.

### 2.2.2 Broadband Wireless Access

The meeting considered 4 documents: [5A/743](http://www.itu.int/md/R12-WP5A-C-0743) (WP 5C); [5A/10](http://www.itu.int/md/R15-WP5A-C-0010) (WP 6B); [5A/24](http://www.itu.int/md/R15-WP5A-C-0024) (WP 5D); [5A/83](http://www.itu.int/md/R15-WP5A-C-0083) (Indonesia).

A Liaison statement ([5A/743](http://www.itu.int/md/R12-WP5A-C-0743)) of WP 5C is a reply liaison statement to ITU-T Study Group 15 and ITU-R WP 5D on work on draft new Report ITU-R F.[FS.IMT/BB]. The liaison is just information for WP 5A, the meeting did not consider any replies.

A Liaison statement ([5A/10](http://www.itu.int/md/R15-WP5A-C-0010)) from WP 6B informed that WP 6B developed a preliminary draft new ITU-R Report on initial usage scenarios and requirements of a global platform for the broadcasting service. A reply liaison statement (5A/TEMP/40) was developed to seek clarification on whether the intent of preliminary draft new Report ITU-R [GLOBAL PLATFORM] is to determine which measures may be taken from a packaging/content creation perspective that would enable the delivery of audiovisual content over other networks beyond terrestrial broadcasting (e.g. Wireless Access Systems/RLANS).

A Liaison statement ([5A/24](http://www.itu.int/md/R15-WP5A-C-0024)) from WP 5D is a reply liaison to WP 1B on ITU-R SM.[INNOVATIVE REGULATORY TOOLS]. It is information for WP 5A and took note of it.

Contribution [5A/83](http://www.itu.int/md/R15-WP5A-C-0083) from Indonesia provided the information of the Rural Broadband Integrated program running by the Indonesian government. The meeting encouraged WP 5A experts to provide their efforts and experience to the program.

### 2.2.3 Hearing aids and related

Draft Group (DG 5A2-1 Hearing aids) was established to deal with hearing aids issues. Three contributions were considered, which are [5A/3](http://www.itu.int/md/R15-WP5A-C-0003) (ITU-T SG 16); [5A/11](http://www.itu.int/md/R15-WP5A-C-0011) (JCA-AHF); [5A/21](http://www.itu.int/md/R15-WP5A-C-0021) (WP 5D). Considerable discussion took place on the implications of the resolution and its possible application on the status of ALDs within Question [ITU-R 254/5](http://www.itu.int/pub/R-QUE-SG05.254). Members sympathize with the issues of interruptions and interference to those with hearing loss’s and using ALDs to provide a better quality of life, The recent WSIS Forum noted that some 43 million people between 12 and 35 have hearing loss (source WHO). However there is a conflict with the status of ALDs as Short Range Devices within the RR and the objectives of Res. ITU-R 67.

It was agreed that members would consider the issues raised during the meeting and also seek to identify suitable spectrum for Question ITU-R 254/5 providing input for the drafting group at the next WP 5A meeting

It was also agreed to send a liaison statement (Doc. 5A/TEMP/08) to the JCA-AHF stating that work in Resolution ITU-R 67 had started in WP 5A.

### 2.2.4 Land mobile systems

Three input contributions were considered, which are [5A/736](http://www.itu.int/md/R12-WP5A-C-0736/en) [Annex 5](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0736!N05!MSW-E) (WP 5A); [5A/59](http://www.itu.int/md/R15-WP5A-C-0059) (China); [5A/69](http://www.itu.int/md/R15-WP5A-C-0069) (Mexico). It was agreed that WG 5A-2 will handle revision work of Report ITU-R M.2014 and the development of new Report ITU-R M.[DLMSA] in parallel.

Contribution [5A/59](http://www.itu.int/md/R15-WP5A-C-0059) proposed to include the B-TrunC system in the revision of Report ITU-R M.2014-2. As a result of the discussion, the working document towards the revision of Report ITU‑R M.2014-2 (5A/TEMP/45) was further developed based on the proposal of [5A/59](http://www.itu.int/md/R15-WP5A-C-0059).

A Draft Group (DG5A2-2 PLMR) was established to deal with M.[DLMSA] issue. The drafting group is responsible for the development of preliminary draft new Report ITU-R M.[DLMSA], elaboration of work plan and respective liaison letters.

A working document towards a preliminary draft new Report ITU-R M.[DLMSA] – Digital land mobile systems for specific applications (5A/TEMP/44) and work plan (5A/TEMP/43) were developed. A liaison statement (5A/TEMP/39) was developed to invite external organizations to contribute material for development of this new Report.

### 2.2.5 ANTs

Three liaison statements ([5A/17](http://www.itu.int/md/R15-WP5A-C-0017), [5A/18](http://www.itu.int/md/R15-WP5A-C-0018), [5A/19](http://www.itu.int/md/R15-WP5A-C-0019)) from ITU-T SG15 were considered. WG 5A-2 reviewed the latest versions of the Access Network Transport (ANT), Smart Grid, and Home Network Transport (HNT) standards overviews and work plans and developed a reply liaison statement which is Document 5A/TEMP/56.

### 2.2.6 Out-of-band emissions

A liaison ([5A/25](http://www.itu.int/md/R15-WP5A-C-0025)) from WP 5D provided the reply information to WP 1A on characteristics of the unwanted emissions in the out-of-band and spurious domains for digital modulation technology used in broadband communication systems. It copied to WP 5A for information, took note of it and did not see the need for further action at this point in time.

### 2.2.7 Vocabulary

A liaison ([5A/29](http://www.itu.int/md/R15-WP5A-C-0029)) from CCV mentioned that the term “Peer-to-peer” already exists in the ITU terminology database and thus WP 5A could verify its definition. It was suggested to delete the term “Wireless peer-to-peer network”. WG 5A-2 developed a liaison statement which is Document 5A/TEMP/41 to respond.

### 2.2.8 Millimetre-wave systems

Document [5A/52](http://www.itu.int/md/R15-WP5A-C-0052) was considered at the joint meeting of WGs 5A-2 and 5A-5. The joint meeting attempted to develop a working document towards a preliminary draft new Question for the study on close proximity point-to-point radiocommunication systems, but the joint meeting could not reach an agreement. The joint meeting decided to carry forward Document [5A/52](http://www.itu.int/md/R15-WP5A-C-0052) to the 17th meeting of WP 5A for further consideration.

### 2.2.9 Review of ITU-R texts

Working Group 5A-2 reviewed the WP 5A texts Section 1 of Annex 1 in Doc. [5A/45](http://www.itu.int/md/R15-WP5A-C-0045/en), [Guide to the use of ITU-R texts relating to the land mobile service](http://www.itu.int/oth/R0A06000001/en) and Doc. [5A/42](http://www.itu.int/md/R15-WP5A-C-0042/en). Only a minor update was proposed.

### 2.2.10 LMH

Dr. Gabrielle Owen have gone through the Land Mobile Handbook (LMH) vol. 3 on “Dispatch and Advanced Messaging Systems” and have indicated the possible sources of the text in the different sections, e.g. ARIB, ETSI, TIA, Motorola, etc. She also indicated that the systems are also covered in Report ITU-R M.2014. Since M.2014 is currently under revision, we need to coordinate the update of M.2014 and this volume of the LMH. Perhaps it would be convenient for the contributors to review their section of the LMH when they are reviewing the text of M.2014.

### 2.2.11 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

– Development of a preliminary draft revision of Report ITU-R M.2014

– Development of a preliminary draft new Report ITU-R M.[DLMSA]

### 2.2.12 Chairman’s closing remarks

Finally, Chairman of Working Group 5A-2 wishes to thank all participants of WG 5A-2 for their contributions and cooperation and particularly thank SWG chair Mr. Liu Bin, DG Chair Mr. Brian Copsey and Mr. David Tejeda for their good and efficient work.

**Attachments:**

[Attachment 1](#att1): Workplan for a preliminary draft new Report ITU-R M.[DLMSA].

# 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 17 input contributions to this meeting, two carried forward documents, and one Annex to the previous Working Party 5A Chairman’s Report. The input documents were related to the objectives for this meeting as outlined in section 3 of [Annex 3 of 5A/736](http://www.itu.int/md/R12-WP5A-C-0736%21N03%21MSW-E):

– the possible development of a Recommendation or Report on spectrum requirements for public protection and disaster relief, and

– the further development of the “Elements for consideration in future discussions on Recommendation ITU-R M.2015”.

The work of the group produced three liaison statements, one workplan, and two working documents to be included in the Chairman’s Report.

## 3.2 Organization of the work

All input contributions were introduced at the Working Group level. The Disaster Relief Rapporteur’s Report (Doc. [5A/105](http://www.itu.int/md/R12-WP5A-C-0105/en)) was presented at the WP 5A Plenary. 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/45](http://www.itu.int/md/R12-WP5A-C-0045/en). These items were addressed at the Working Group level.

WG 3 created a single drafting group to address the possible development of a Recommendation or Report on spectrum requirements for public protection and disaster relief, which was led by Ms. Christine Hsu of Canada.

The task of the further development of the “Elements for consideration in future discussions on Recommendation ITU-R M.2015” was addressed at the WG 3 level, as no drafting group chair was available.

## 3.3 Execution of objectives

**Objective 1: The possible development of a Recommendation or Report on spectrum requirements for public protection and disaster relief**

A drafting group was established under the leadership of Ms. Christine Hsu (Canada) to address the possible development of a Recommendation or Report on spectrum requirements for public protection and disaster relief.

Drafting Group 5A-3 PPDR.Spectrum met on two occasions. The DG was assigned four input contributions. The documents considered by the meeting, as well as their sources, are shown in the table below:

|  |  |
| --- | --- |
| **Possible development of a Recommendation or Report on spectrum requirements for PPDR** | [66](http://www.itu.int/md/R15-WP5A-C-0066) (Mexico); [82](http://www.itu.int/md/R15-WP5A-C-0082) (Australia); [89](http://www.itu.int/md/R15-WP5A-C-0089) (Motorola Solutions); [94](http://www.itu.int/md/R15-WP5A-C-0094) (Canada) |

Based on in discussions in previous meetings and the input contributions it was agreed that Annexes 6 and 7 of Report ITU-R M.2377 could serve as the basis for the development of a working document toward a preliminary draft new Report ITU-R M.[PPDR Spectrum] on “Spectrum calculations and requirements for Public Protection and Disaster Relief (PPDR)”.

The meeting agreed to continue its liaison activity with WP 5D and inform them of the workplan to develop the new Report on spectrum requirements for PPDR.

As a result of the diligent efforts of all participants, the DG was able to produce a working document toward a preliminary draft new Report for consideration in WG3 to be carried forward to the next meeting for further development.

As a result of the work in the drafting group, three documents were created:

1. 5A/TEMP/14 (Reply LS to WP 5D)
2. 5A/TEMP/17 (Workplan for new Report on PPDR spectrum requirements)
3. 5A/TEMP/18 (Working doc toward a preliminary draft new Report ITU-R M.[PPDR Spectrum]) – to be carried forward as an Annex to the Chairman’s Report.

**Objective 2: The further development of the “Elements for consideration in future discussions on Recommendation ITU-R M.2015”**

Following the completion of Recommendation ITU-R M.2015-1, WP 5A previously created an annex to the Chairman’s Report on “Elements for consideration in future discussions on Recommendation ITU-R M.2015”, which was revised at the fifteenth meeting. At this sixteenth meeting, seven contributions were received related to the possible future 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)**”, as detailed in the table below:

|  |  |
| --- | --- |
| **Further development of the Elements for consideration in future discussions on Recommendation ITU-R M.2015** | Res. **646 (Rev.WRC-15)**; [697](http://www.itu.int/md/R12-WP5A-C-0697/en), [698](http://www.itu.int/md/R12-WP5A-C-0698/en) (Australia); [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); [14R1](http://www.itu.int/md/R15-WP5A-C-0014) (APT); [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, UK); [90](http://www.itu.int/md/R15-WP5A-C-0090) (Motorola Solutions); [102](http://www.itu.int/md/R15-WP5A-C-0102) (UAE, Bahrain, Kuwait, Palestine) |

Each of the input contributions was introduced and discussed in WG 3. As the result of detailed discussions of the proposals in the contributions, a working document toward a preliminary draft revision of Recommendation ITU-R M.2015-1. The meeting agreed on a general structure for the Annexes, with one Annexes with three sections aligning with the *resolves* 2 and 3 of Resolution **646 (Rev.WRC-15)** and second Annex aligning with *resolves* 4 of the Resolution, as reflected in the working document.

However, due to time constraints, the WG was unable to undertake rearrangement of the Annexes in line with this agreement and to fully consider the proposed additions and revisions to the Annexes from the input contributions. Therefore, the proposals for revisions/additions to the substance of the Annexes as reflected in the following inputs are carried forward to the next meeting: [5A/60](http://www.itu.int/md/R15-WP5A-C-0060/en), [5A/67](http://www.itu.int/md/R15-WP5A-C-0067/en), [5A/75](http://www.itu.int/md/R15-WP5A-C-0075/en), [5A/80](http://www.itu.int/md/R15-WP5A-C-0080/en), [5A/85](http://www.itu.int/md/R15-WP5A-C-0085/en), [5A/90](http://www.itu.int/md/R15-WP5A-C-0090/en), [5A/102](http://www.itu.int/md/R15-WP5A-C-0102/en), as well as Annex 6 of Document [5A/736](http://www.itu.int/md/R12-WP5A-C-0736/en).

In addition, a document containing conceptual guidance document for the structure of the Annexes is attached to this WG Chairman’s Report that could provide guidance for future contributions on the organization of the Annexes.

As a result of this work, one document was created:

1 Doc. 5A/TEMP/57 (Working document toward a preliminary draft revision of Recommendation ITU-R M.2015-1) – to be carried forward as an Annex to the Chairman’s Report.

## 3.4 Other matters

### 3.4.1 Liaison statements

In addition to the above actions based on the objectives for this meeting, WG3 also replied to a liaison statement from the Coordination Committee for Vocabulary (CCV) and Standardization Committee for Vocabulary (SCV) on PPDR vocabulary and from ITU-T Study Group 17 on network security for PPDR systems, as reflected in the following documents:

1 Doc. 5A/TEMP/15 (Reply LS to CCV\_SCV)

2 Doc. 5A/TEMP/20 (Reply LS to ITU-T\_SG17).

### 3.4.2 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 related to the land mobile service” and of Section 1 of Annex 1 in Document [5A/45](http://www.itu.int/md/R15-WP5A-C-0045/en). The WG Chair provided a few updates to the WP 5A Chairman for inclusion in the texts.

### 3.4.3 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 new Report ITU-R M.[PPDR SPECTRUM], “Spectrum calculations and requirements for Public Protection and Disaster Relief (PPDR)”;

– further develop the working document toward a preliminary draft revision of Recommendation ITU-R M.2015-1; 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 WG Chairman would like to express particular 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 2](#att2): Conceptual Guidance on the Structure of the Annexes of M.2015
NOTE: The content of the tables was not agreed and needs discussion. This document is for discussion purposes to guide future contributions.

[Attachment 3](#att3): Workplan for preliminary draft new Report ITU-R M.[PPDR SPECTRUM] and possible consequential revision of Report ITU-R M.2377.

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

## 4.1 Executive Summary

WG 5A-4 developed a structure for the work under WRC-19 agenda item 1.16 and agree to continue the work on the working document towards a PDN Report ITU-R M.[RLAN MITIGATION] describing possible additional mitigation techniques to facilitate sharing between RLAN systems and incumbent services. WG 5A-4 furthermore developed liaison statements to other Working Parties regarding a number of WRC-19 agenda items. WG 5A-4 also developed joint liaison statements together with WP 5B and WP 5C regarding human exposure to RF fields and the liaison with CENELEC on PLT, EMI and WPT.

## 4.2 Introduction

Working Group 5A-4 met nine times during the May 2016 meeting of Working Party 5A and considered 48 input contributions and developed 18 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/2(Rev.3).

### 4.3.1 Revision of Recommendation ITU-R P.619

Input document: [5A/666](http://www.itu.int/md/R12-WP5A-C-0666/en) (WP 3M)

WG 5A-4 reviewed the information provided in Document 5A/666 as carried forward from the last meeting and did not see the need for further action at this point in time.

### 4.3.2 Working document towards a preliminary draft new Recommendation ITU-R SF.[INTERF.AREA]

Input documents: [5A/23](http://www.itu.int/md/R15-WP5A-C-0023/en) (WP 5D); [5A/71](http://www.itu.int/md/R15-WP5A-C-0071/en), [5A/728](http://www.itu.int/md/R12-WP5A-C-0728/en) (WP 4A)

Output document: 5A/TEMP/16(Rev.2) (Liaison Statement to WP 4A)

The liaison statement carried forward from the previous meeting (Document 5A/728) was superseded by Document 5A/71 and WG 5A-4 developed a reply liaison statement to WP 4A as contained in Document 5A/TEMP/16(Rev.2). WG 5A-4 also took note of the information that WP 5D provided to WP 4A on this issue.

### 4.3.3 WRC-15 agenda item 1.10

Input document: [5A/737](http://www.itu.int/md/R12-WP5A-C-0737/en) (WP 5C)

WG 5A-4 took note of the information provided by WP 5C to WP 4C and did not see the need for further action.

### 4.3.4 Radio Frequency Ranges for Wireless Power Transmission

Input document: [5A/738](http://www.itu.int/md/R12-WP5A-C-0738/en) (WP 5B)

WG 5A-4 took note of the information provided by WP 5B to WP 1A and did not see the need for further action.

### 4.3.5 Revision of Recommendation ITU-R F.758

Input document: [5A/741](http://www.itu.int/md/R12-WP5A-C-0741/en) (WP 5C)

WG 5A-4 took note of the information provided by WP 5C WP 1A and did not see the need for further action at this point in time.

### 4.3.6 PDNR ITU-R S.[GUIDELINES\_14.5-14.8]

Input document: [5A/70](http://www.itu.int/md/R15-WP5A-C-0070/en) (WP 4A)

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

### 4.3.7 Preliminary Draft New Report ITU-R M.[SHARE]

Input document: [5A/95](http://www.itu.int/md/R15-WP5A-C-0095/en) (Canada)

Output documents: 5A/TEMP/09(Rev.1) (Liaison Statement to WP 1A, WP 1B, WP 4A, WP 5C and WP 5D); 5A/TEMP/13 (Working document)

Based on the proposal in Document 5A/95, WG 5A-4 agreed to start the development of a new report on sharing schemes in the land mobile service on the basis of geographical use, frequencies, services, new technologies and applications in response to Question ITU-R 238-2/5. Furthermore, a liaison statement to to WP 1A, WP 1B, WP 4A, WP 5C and WP 5D was developed to inform them about this new activity.

### 4.3.8 Human exposure to RF fields

Input documents: [5A/2](http://www.itu.int/md/R15-WP5A-C-0002/en), [5A/4](http://www.itu.int/md/R15-WP5A-C-0004/en), [5A/5](http://www.itu.int/md/R15-WP5A-C-0005/en) and [5A/111](http://www.itu.int/md/R15-WP5A-C-0111/en) (ITU-T SG 5); [5A/8(Rev.1)](http://www.itu.int/md/R15-WP5A-C-0008/en) (ATDI); [5A/22](http://www.itu.int/md/R15-WP5A-C-0022/en) (WP 5D); [5A/739](http://www.itu.int/md/R12-WP5A-C-0739/en) (WP 6A)

Output document: 5A/TEMP/37 (Joint liaison statement with WP 5B and 5C to ITU-T SG 5)

WG 5A-4 took note of the information provided by ITU-T SG 5, ATDI, WP 5D and WP 6A on this issue and developed a joint reply liaison statement back to ITU-T SG 5 together with WP 5B and WP 5C.

### 4.3.9 Interference from wired telecommunications systems and liaison with ITU-T

Input document: [5A/107](http://www.itu.int/md/R15-WP5A-C-0107/en) (WP 1A Rapporteur on this issue, through WP 5A Chairman)

Output document: 5A/TEMP/5 (Joint liaison statement with WP 5B and 5C to WP 1A)

WG 5A-4 took note of the information provided by Rapporteur for the WP 1A Rapporteur Group on the coexistence of wired telecommunication with radiocommunication systems and developed joint liaison statement to WP 1A on this issue together with WP 5B and WP 5C.

### 4.3.10 WRC-19 agenda item 1.16

Input documents: [5A/38](http://www.itu.int/md/R15-WP5A-C-0038/en) (WP 7A); [5A/49](http://www.itu.int/md/R15-WP5A-C-0049/en) (Russian Federation); [5A/57](http://www.itu.int/md/R15-WP5A-C-0057/en) (Switzerland); [5A/64](http://www.itu.int/md/R15-WP5A-C-0064/en) (France); [5A/68](http://www.itu.int/md/R15-WP5A-C-0068/en) (Mexico); [5A/81](http://www.itu.int/md/R15-WP5A-C-0081/en) (Australia); [5A/88](http://www.itu.int/md/R15-WP5A-C-0088/en) (Luxemburg); [5A/91](http://www.itu.int/md/R15-WP5A-C-0091/en) and [5A/92](http://www.itu.int/md/R15-WP5A-C-0092/en) (UK); [5A/96](http://www.itu.int/md/R15-WP5A-C-0096/en) (ESA); [5A/97](http://www.itu.int/md/R15-WP5A-C-0097/en) (EUMETSAT); [5A/98](http://www.itu.int/md/R15-WP5A-C-0098/en) (China) and [5A/100](http://www.itu.int/md/R15-WP5A-C-0100/en) (EU)

Output documents: 5A/TEMP/12 (draft CPM text); 5A/TEMP/50 (LS to WP 7C); 5A/TEMP/51 (RLAN compilation document); 5A/TEMP/52 (Working document towards a PDN Report ITU-R M.[RLAN MITIGATION]); 5A/TEMP/53 (Workplan for AI 1.16); 5A/TEMP/54 (Working document on RLAN airborne measurements); 5A/TEMP/55/(Rev.1) (LS to concerned groups); 5A/TEMP/58 (Working document on RLAN characteristics); 5A/TEMP/59(Rev.1) (Working document on RLAN sharing studies)

Based on the above input contributions, WG 5A-4 had extensive discussions on the organization of the work for agenda item 1.16 and also how to best carry the mitigation work forward from the last study cycle.

A workplan and an initial version of the draft CPM text were developed. Furthermore, it was agreed to start working on 3 new Reports on the RLAN characteristics, RLAN airborne measurements and the RLAN sharing studies. For the latter document it was also agreed that the structure of the document should be seen as a guidance for input contributions to the next meeting of WP 5A but it may evolve depending on input contributions, and the document could possibly be split appropriately.

During the discussion a number of issues were raised for discussion at future meetings as required. These included:

− How to consider other radio services such as FS, MS (non-RLAN)?

− How to address the possible link between AI 1.16 and AI 1.12?

− To take account of the fact that to operate in the ISM band 5 725-5 875 MHz you must be able to deal with increased level of interference. For example will WAS/RLAN use in these bands be any worse an interferer to incumbents than potential ISM device emissions in the band?

− Different views were expressed on whether or not LTE type WAS/RLAN systems are within the scope of WRC-19 agenda item 1.16 and Resolution **239 (WRC-15)** as it was not clear whether LTE type WAS/RLAN systems are currently covered by Recommendation ITU-R M.1450.

The above mentioned working documents will be further developed at the next WP 5A meeting based on the relevant input contributions received at this WP 5A meeting and therefore, these input contributions were embedded into the working documents for ease of reference. As such, all these inputs are carried forward to the next WP 5A meeting.

WG 5A-4 also agreed to carry forward the current RLAN compilation and RLAN mitigation working documents for further discussion at the next WP 5A meeting together with the relevant input contributions [5A/700](http://www.itu.int/md/R12-WP5A-C-0700/en) and [5A/703](http://www.itu.int/md/R12-WP5A-C-0703/en), which were also embedded into the working documents for ease of reference.

### 4.3.11 WRC-19 agenda item 9.1 – Issue 9.1.5

WG 5A-4 very briefly discussed this issue and since there were no input contributions decided that a placeholder for a workplan and draft CPM text would be developed based on those for WRC-19 agenda item 1.16.

### 4.3.12 WRC-19 agenda item 1.2

Input document: [5A/30](http://www.itu.int/md/R15-WP5A-C-0030/en) (WP 7B)

WG 5A-4 took note of the information provided by WP 7B on this issue and did not see a need for further action at this point in time.

### 4.3.13 WRC-19 agenda item 1.3

Input documents: [5A/32](http://www.itu.int/md/R15-WP5A-C-0032/en) (WP 7B); [5A/65](http://www.itu.int/md/R15-WP5A-C-0065/en) (France)

Output document: 5A/TEMP/10(Rev.1) (Liaison statement to WP 7B)

WG 5A-4 took note of the information provided by WP 7B and developed a reply based on Document 5A/65 to provide the required information to WP 7B.

### 4.3.14 WRC-19 agenda item 1.5

Input documents: [5A/37](http://www.itu.int/md/R15-WP5A-C-0037/en) (WP 7C); [5A/73](http://www.itu.int/md/R15-WP5A-C-0073/en) (WP 4A)

WG 5A-4 took note of the information provided by WP 7C to WP 4A on this issue. WG 5A-4 considered the request from WP 4A, requesting mobile service characteristics and criteria for use by WP 4A in studies under agenda item 1.5 for WRC-19 (dealing with the use of earth stations in motion communicating with geostationary fixed-satellite service space stations in the bands 27.5‑29.5 GHz (Earth-to-space) and 17.7-19.7 GHz (space-to-Earth)). As WP 4A specified that a response from WP 5A would not be needed until the November 2016 meeting of WP 5A (i.e., before the first 2017 meeting of WP 4A), WG 5A-4 decided not to develop a liaison response at its April 2016 meeting.  Instead, WG 5A-4 expressly invites interested administrations to review Document 5A/73, and bring materials for a responsive liaison statement to the November 2016 meeting of WP 5A.

Therefore, Document 5A/73 is carried forward to the next WP 5A meeting.

### 4.3.15 WRC-19 agenda item 1.6

Input document: [5A/37](http://www.itu.int/md/R15-WP5A-C-0037/en) (WP 7C)

WG 5A-4 took note of the information provided by WP 7C to WP 4A on this issue and did not see a need for further action at this point in time.

### 4.3.16 WRC-19 agenda item 1.7

Input document: [5A/31](http://www.itu.int/md/R15-WP5A-C-0031/en) (WP 7B)

Output document: 5A/TEMP/11(Rev.1) (Liaison statement to WP 7B)

WG 5A-4 took note of the information provided by WP 7B and developed a reply liaison statement.

### 4.3.17 WRC-19 agenda item 1.13

Input document: [5A/33](http://www.itu.int/md/R15-WP5A-C-0033/en) (WP 7D)

WG 5A-4 took note of the information provided by WP 7D to WP 3K and WP 3M on this issue and did not see a need for further action at this point in time.

### 4.3.18 WRC-19 agenda item 1.14

Input documents: [5A/35](http://www.itu.int/md/R15-WP5A-C-0035/en) (WP 7C); [5A/39](http://www.itu.int/md/R15-WP5A-C-0039/en) (WP 7B)

WG 5A-4 took note of the information provided by WP 7B and WP 7C to WP 5C on this issue and did not see a need for further action at this point in time.

### 4.3.19 EESS in the 40-50 MHz frequency band

Input document: [5A/34](http://www.itu.int/md/R15-WP5A-C-0034/en) (WP 7C)

Output document: 5A/TEMP/4 (Liaison statement to WP 7C)

WG 5A-4 took note of the information requested by WP 7C and developed a reply liaison statement which was also copied to WP 5C to get them involved in this discussion.

### 4.3.20 WRC-19 agenda item 9.1 – Issue 9.1.3

Input document: [5A/74](http://www.itu.int/md/R15-WP5A-C-0074/en) (WP 4A)

WG 5A-4 considered the request from WP 4A, requesting technical characteristics and protection criteria for fixed and mobile services in support of studies under WRC‑19 agenda item 9.1 – Issue 9.1.3. As WP 4A specified that a response from WP 5A would not be needed until the November 2016 meeting of WP 5A (i.e., before the first 2017 meeting of WP 4A), WG 5A-4 decided not to develop a liaison response at its April 2016 meeting.  Instead, WG 5A-4 expressly invites interested administrations to review Document 5A/73, and bring materials for a responsive liaison statement to the November 2016 meeting of WP 5A.

Therefore, Document 5A/74 is carried forward to the next WP 5A meeting.

### 4.3.21 WRC-19 agenda item 9.1 – Issue 9.1.9

Input document: [5A/36](http://www.itu.int/md/R15-WP5A-C-0036/en) (WP 7C); [5A/72](http://www.itu.int/md/R15-WP5A-C-0072/en) (WP 4A)

WG 5A-4 took note of the information provided by WP 7C to WP 4A on this issue. WG 5A-4 considered the request from WP 4A, requesting the system characteristics and protection requirements of the mobile service. As WP 4A specified that a response from WP 5A would not be needed until the November 2016 meeting of WP 5A (i.e., before the first 2017 meeting of WP 4A), WG 5A-4 decided not to develop a liaison response at its April 2016 meeting. Instead, WG 5A-4 expressly invites interested administrations to review Document 5A/73, and bring materials for a responsive liaison statement to the November 2016 meeting of WP 5A.

Therefore, Document 5A/72 is carried forward to the next WP 5A meeting.

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

Input document: [5A/41](http://www.itu.int/md/R15-WP5A-C-0041/en) (ATDI)

WG 5A-4 took note of the work regarding the revision of this Recommendation which will be carried out jointly between WP 5A and WP 5C, with WP 5C taking the lead 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.

The current working document for the revision of this Recommendation can be found in [Annex 2](https://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5C-C-0057!N02!MSW-E) to Doc. [5C/57](http://www.itu.int/md/R15-WP5C-C-0057/en); the Chairman’s Report from the 16th meeting of WP 5C.

## 4.4 Objectives for the next WP 5A meeting

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

– Provide comments to WP 4A in response to Documents [5A/72](http://www.itu.int/md/R15-WP5A-C-0072/en) (Issue 9.1.9), [5A/73](http://www.itu.int/md/R15-WP5A-C-0073/en) (agenda item 1.5) and [5A/74](http://www.itu.int/md/R15-WP5A-C-0074/en) (Issue 9.1.3);

– Review the ongoing work in WP 4A on the working document towards a Preliminary Draft New Recommendation ITU‑R SF.[INTERF.AREA] (see Document [5A/71](http://www.itu.int/md/R15-WP5A-C-0071/en)) and provide comments to WP 4A as appropriate;

– 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.

## 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.

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

Working Group 5A-5 (WG 5A-5) met five times during the 16th meeting of ITU-R WP 5A from 10th to 19th May, 2016. Around 70 delegates from Australia, Germany, Canada, China, Czech Republic, France, Italy, India, Japan, Korea, Luxemburg, The Netherlands, Nigeria, Russian Federation, Singapore, Slovakia, Sweden, Thailand, United Kingdom, USA, Ericsson, Intel, Microsoft, Motorola solutions and Robert Bosch participated in the meetings. The tasks assigned to WG 5A-5 address new technologies.

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

|  |  |
| --- | --- |
| – AI 1.12 (ITS Res.237) | Documents [5A/40](http://www.itu.int/md/R15-WP5A-C-0040) (CITS), [5A/54](http://www.itu.int/md/R15-WP5A-C-0054), [5A/56](http://www.itu.int/md/R15-WP5A-C-0056) (Japan); [5A/84](http://www.itu.int/md/R15-WP5A-C-0084) (Germany, France, Luxemburg); [5A/99](http://www.itu.int/md/R15-WP5A-C-0099) (China) |
| – Intelligent transport system (ITS)(Q. 205-5/5) | Documents [5A/736](http://www.itu.int/md/R12-WP5A-C-0736/en) [Annex 9](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0736!N09!MSW-E) and [Annex 10](http://www.itu.int/md/dologin_md.asp?lang=en&id=R12-WP5A-C-0736!N10!MSW-E) (WP 5A); [5A/742](http://www.itu.int/md/R12-WP5A-C-0742) (WP 5C); [5A/16](http://www.itu.int/md/R15-WP5A-C-0016) (ETSI); [5A/47R1](http://www.itu.int/md/R15-WP5A-C-0047) (3GPP TSG RAN); [5A/55](http://www.itu.int/md/R15-WP5A-C-0055), [5A/58](http://www.itu.int/md/R15-WP5A-C-0058) (Japan); [5A/77](http://www.itu.int/md/R15-WP5A-C-0077) (Korea); [5A/93](http://www.itu.int/md/R15-WP5A-C-0093) (China) |
| – AI 1.15 (Above 275 GHz Res. 767) | Documents [5A/740](http://www.itu.int/md/R12-WP5A-C-0740) (WP 5C); [5A/15R1](http://www.itu.int/md/R15-WP5A-C-0015) (APT); [5A/26](http://www.itu.int/md/R15-WP5A-C-0026) (IEEE); [5A/33](http://www.itu.int/md/R15-WP5A-C-0033) (WP 7D); [5A/53](http://www.itu.int/md/R15-WP5A-C-0053) (Japan) |
| – Close Proximity Mobile System (CPMS) | Document [5A/52](http://www.itu.int/md/R15-WP5A-C-0052/en) (Japan) |
| – Cognitive Radio System (CRS)/ Dynamic Access | Documents [5A/744](http://www.itu.int/md/R12-WP5A-C-0744) (ITU-D SG 1, ITU-D Co-Chairman for the Joint Group for Resolution 9); [5A/46](http://www.itu.int/md/R15-WP5A-C-0046) (ITU-R/ITU-D Joint Group on WTDC Resolution 9) |
| – /9.1.8 (MTC Res.958) | Document [5A/6](http://www.itu.int/md/R15-WP5A-C-0006/en) (ITU-T SG20) |

WG 5A-5 established a Sub-working Group (SWG) and a 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 workplan for A.I. 1.12– Review existing ITU-R Reports and Recommendations relevant to A.I. 1.12– Develop initial draft CPM text for 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.– Develop a draft liaison statement back to Collaboratioon on ITS Communication Standards (CITS) |
| DG 5A-5-1-1 – Rail.Link(Dr. Hitoshi Yoshino, Japan) | – Develop a working document towards a preliminary draft new Report ITU-R M.[RAIL.LINK] |

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

SWG 5A-5-1 on ITS and DG 5A-5-1-5 on Rail Link met six times each, during the 16th meeting of WP 5A.

## 5.1 Executive summary

WG 5A-5 initiated its work on WRC-19 agenda item 1.12 (ITS, Resolution 237) and developed a draft work plan and elements of draft CPM text for this agenda item. WG 5A-5 developed a preliminary draft new Report ITU‑R M.[RAIL.LNK] of introduction to specific railway communication systems in the millimetric wave frequency range. WG 5A-5 initiated its work on technical and operational characteristics and applications of the point-to-point land mobile service applications operating in the frequency range 275-450 GHz and created a working document towards a preliminary draft new Report ITU-R M.[300GHz\_MS\_CHAR] on this topic.

## 5.2 Intelligent transport system (ITS)

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

1 A draft work plan for WRC-19 A.I. 1.12 (Document 5A/TEMP/21R1)

2 Elements of draft CPM text for WRC-19 A.I. 1.12 (Document 5A/TEMP/23R1).

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/24R1); and

4 A preliminary draft new Report ITU-R M.[RAIL.LINK] of introduction to specific railway communication systems in the millimetric wave frequency range
(Document 5A/TEMP/36).

Input contributions from administrations and external organizations, including status report of LTE‑V2X standardization activities in 3GPP, were introduced in the meetings. Having considered these input contributions, WG 5A-5 recognised that it is needed to develop some texts from these information in order to include these useful information in Report ITU-R M.[ITS USAGE] and a draft CPM text.

Therefore, further contributions; particularly from those administrations and external organizations, i.e. contributors of the Documents [5A/16](http://www.itu.int/md/R15-WP5A-C-0016/en), [5A/40](http://www.itu.int/md/R15-WP5A-C-0040/en), [5A/47R1](http://www.itu.int/md/R15-WP5A-C-0047/en), [5A/84](http://www.itu.int/md/R15-WP5A-C-0084/en), [5A/93](http://www.itu.int/md/R15-WP5A-C-0093/en) and [5A/99](http://www.itu.int/md/R15-WP5A-C-0099/en), are invited to the 17th meeting of WP 5A.

WG 5A-5 agreed to elevate the status of a working document towards a preliminary draft new Report ITU-R M.[RAIL.LINK] to a preliminary draft new Report ITU-R M.[RAIL.LINK]. Now WG 5A‑5 considers that the content of a preliminary draft new Report ITU-R M.[RAIL.LINK] is stable and may only need editorial modifications. Editorial modifications are invited through input contributions to the 17th meeting of WP 5A so that WG 5A-5 can complete its work on the Report and send it for approval at SG 5. Accordingly, WG 5A-5 reviewed and updated the schedule in its work plan on a preliminary draft new Report ITU-R M.[RAIL.LINK] (Appendix 1).

Regarding a liaison statement from Collaboration on ITS Communication Standards (CITS) on requesting a copy of the WRC-19 agenda item 1.12 and confirming the list of consolidated spread sheet summarizing ITS related work items within ITU, WG 5A-5 created a reply liaison statement to CITS (Document 5A/TEMP/25R1).

## 5.3 Agenda item 1.15 on the applications above 275 GHz and Res. 767

WG 5A-5 received a reply liaison statement from WP 5C to WP 1B on the fixed service in the frequency range 275-1 000 GHz copy for information to WP 5A. WP 5A noted the liaison statement. WG 5A-5 received a liaison statement from APT on APT Wireless Group’s studies on short range radiocommunication systems and application scenarios operating in the band 275‑1 000 GHz. WP 5A-5 noted the liaison statement. WP 5A-5 noted the liaison statement from IEEE copying for information to WP 5A on technology trends of active services in the band above 275 GHz. WP 5A-5 also noted a liaison statement from WP 7D to WPs 3K and 3M copying for information to WP 5A on a propagation model above 50 GHz.

WG 5A-5 initiated its work on technical and operational characteristics and applications of the point-to-point land mobile service applications operating in the frequency band 275-450 GHz. WG 5A-5 developed a working document towards a preliminary draft new Report ITU-R M.[300GHz\_MS\_CHAR] on technical and operational characteristics and applications of the land mobile service operating in the frequency band 275-450 GHz (Document 5A/TEMP/2R1).

WG 5A-5 also developed a liaison statement to the external organisations on technical and operational characteristics of the land mobile service applications and their spectrum needs associated with work on WRC-19 agenda item 1.15, in order to invite the external organizations to submit input contributions to the 17th meeting of WP 5A (Document 5A/TEMP/1R1).

## 5.4 Close Proximity Point-to-Point mobile systems

Document [5A/52](http://www.itu.int/md/R15-WP5A-C-0052/en) was considered at the joint meeting of WGs 5A-2 and 5A-5. The joint meeting attempted to develop a working document towards a preliminary draft new Question for the study on close proximity point-to-point radiocommunication systems, but the joint meeting could not reach an agreement. The joint meeting decided to carry forward Document 5A/52 to the 17th meeting of WP 5A for further consideration.

## 5.5 Dynamic Spectrum Access

WG 5A-5 noted two liaison statements from the joint ITU-D/ITU-R group on WTDC Resolution 9 to ITU-R WP 1B and WP 5A on spectrum management trends.

## 5.6 IoT applications

WG 5A-5 received a liaison statement from ITU-T SG 20 on new SG 20 which deals with IoT and its applications including smart cities and communities (SC&C). WG 5A-5 developed a reply liaison statement to ITU-T SG 20 in order to provide information regarding WP 5A’s activities related to IoT; Wide-area sensor and/or actuator network (WASN) systems support machine-to-machine communications to a large number of sensors and/or actuators (Recommendation ITU-R M.2002 and Report ITU-R M.2224) (Document 5A/TEMP/19).

## 5.7 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 will editorially update a preliminary draft new Report ITU-R M.[RAIL.LINK] of introduction to specific railway communication systems in the millimetric wave frequency range, with an aim to submit for approval to SG5 at its November 2016 meeting.

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

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

WG 5A-5, jointly with WG 5A-2 will discuss close proximity point-to-point mobile systems based on a carried forward document (Document [5A/52](http://www.itu.int/md/R15-WP5A-C-0052/en)) and new input contributions to the WP 5A 17th meeting.

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

 Hitoshi Yoshino,
 Chairman, WG 5A-5

**Attachments:**

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

Attachment 1 to Annex 3

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

(Source: Document 5A/TEMP/43)

|  |  |
| --- | --- |
| **Title** | Workplan for a preliminary draft new Report “Digital land mobile systems for specific applications” |
| **Identifier** | DLMSA |
| **WP 5A Lead Group** | Working Group 2: Systems and standards |
| **DG Chair** | Mr. David Tejeda, Mexico **E-mail:** david.tejeda@ift.org.mx  |
| **Focus for scope and work**[[1]](#footnote-1) | This Report deals with the technical and operational characteristics of digital systems that may provide capabilities required by specific user groups/applications, such as private mobile radio, public access mobile radio, utilities, e-Health, public protection and disaster relief, machine-to-machine communications, etc. These also include specialized vertical markets such as governmental, mining, health, hospitality, manufacturing, etc. |
| **Related documents** | Question ITU-R 37-6/5Report ITU-R M.2014[Others] |
| **Milestones** | **16th Meeting of WP 5A (May, 2016)**1. Discuss and develop details of scope of work and work plan2. Outline the structure of working document3. Develop liaison statements as appropriate **17th Meeting of WP 5A (November, 2016)**1. Consider the received input contributions2. Continue to develop the working document 3. Review the work plan if needed4. If necessary, develop liaison statements as appropriate**18th Meeting of WP 5A (May, 2017)**1. Consider the received input contributions2. Review and discuss received contributions 3. Continue to develop a working document4. Review the work plan if needed5. If necessary, develop liaison statements as appropriate**19th Meeting of WP 5A (November, 2017)**1. Consider the received input contributions2. Review and discuss received contributions3. Stabilize the contents of working document4. Promote the working document to a PDNR **20th Meeting of WP 5A (May, 2018)**1. Consider the received input contributions2. Finalize the Report and submit to SG 5 for approval |

Attachment 2 to Annex 3

Conceptual Guidance on the Structure of the Annexes of M.2015

(Source: Document 5A/TEMP/61)

NOTE: The content of the tables was not agreed and needs discussion. This document is for discussion purposes to guide future contributions



Attachment 3 to Annex 3

Workplan for a Preliminary Draft New Report ITU-R M.[PPDR SPECTRUM] and consequential revision of Report ITU-R M.2377

(Source: Document 5A/TEMP/17)

**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 4 to Annex 3

Work plan for the development of a new Report ITU-R M.[RAIL.LINK]
of introduction to specific railway communication systems
in the millimetric wave frequency range

|  |  |
| --- | --- |
| **Title** | Workplan for the development of a new Report ITU-R M.[RAIL.LINK] of introduction to specific railway communication systems in the millimetric wave frequency range |
| **Document type** | Report |
| **WP 5A Lead Group** | WG 5 New Technologies  |
| **SWG Chairman** | Satoshi (Sam) Oyama |
| **Editor** | Hiroyuki Tsuji |
| **Focus for scope and work** | This Report focuses on a case study of measurement results of radio communication characteristics between train and ground stations in the millimetric wave frequency ranges for some railway deployment scenarios, in order to assess, among others, the impacts of 1) future broad band transmission and 2) high mobility of more than 300 km/h in millimetric wave frequency ranges, on current and future railway radiocommunication systems. |
| **Related Documents** |  |
| **Milestones** | **14th meeting (November 2014)**– Develop and adopt work plan– Carry forward the framework of working document toward a PDN Report**15th meeting (July 2015)**– Continue developing working document toward a PDN Report– Update work plan as needed.**16th meeting (May 2016)**– Develop a PDN Report – Update work plan as needed**17th meeting (November 2016)**– Editorially update the PDN Report– Finalize Draft Report and submit to SG 5 meeting for approval  |

1. *Editor notes for the scope:*

*– Keep in mind to make appropriate references to other specific docs related to PPDR and Machine to Machine communications.*

*– It should be discussed further where the frequency bands and channel arrangements would be included, either in this PDNR or in a separate report.*

*– Make clear in the body of this PDNR that IMT is covered in other documents.* [↑](#footnote-ref-1)