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| --- | --- |
| **Radiocommunication Study Groups** |  |
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| Source: Docs. 5A/TEMP/246, 257R1, 265, 266, 267, 272 | **Annex 3 to  Document 5A/650-E** |
| **27 November 2017** |
| **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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(Chairman: Ms. Amy Sanders, USA)

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**Attachments**: 5

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 34](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0650!N34!MSW-E) of [Doc. 5A/650](http://www.itu.int/md/R15-WP5A-C-0650/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:

WG5A-2: [304](http://www.itu.int/md/R15-WP5A-C-0304) (ETSI TC ERM); [559](http://www.itu.int/md/R15-WP5A-C-0559) (Telstra, Nokia); [598](http://www.itu.int/md/R15-WP5A-C-0598) (Saudi Arabia)

WG5A-4: [Annex 25](https://www.itu.int/dms_pub/itu-r/md/15/wp5a/c/R15-WP5A-C-0469!N25!MSW-E.docx) & [Annex 26](https://www.itu.int/dms_pub/itu-r/md/15/wp5a/c/R15-WP5A-C-0469!N26!MSW-E.docx) to [Doc. 5A/469](https://www.itu.int/md/R15-WP5A-C-0469/en); [473](http://www.itu.int/md/R15-WP5A-C-0473/en) (WP 5B); [547](http://www.itu.int/md/R15-WP5A-C-0547) (USA); [584](http://www.itu.int/md/R15-WP5A-C-0584) (Japan);   
[585](http://www.itu.int/md/R15-WP5A-C-0585) (Japan); [647](http://www.itu.int/md/R15-WP5A-C-0647) (WP 5B)

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

1.1 Summary

During the November 2017 meeting of Working Party 5A, Working Group 5A-1 met 17 times and undertook the following work:

* Agreed on Preliminary Draft CPM text. While a number of details and numerical values are yet to be determined, the basic structure and textual content is agreed.
* Continued work on the sharing and compatibility studies required for WRC-19 agenda item 1.1. After some setbacks good progress was made and agreement was reached on key parameters and methods to be used for sharing studies and spectrum needs calculations.
* Generated two liaison statements to other groups.
* Reviewed the work plan of WG 5A-1 to reflect the current status of work. The work plan was then converted to a work report.

Documents assigned to WG5A-1 are shown in table 1 and output documents from WG 5A-1 are shown in Table 2.

Table 1

Documents assigned to WG 5A-1

|  |  |
| --- | --- |
| **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)**)** | *Draft CPM text:* [469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 4](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N04!MSW-E) & [Annex 5](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N05!MSW-E) (WP 5A); [540](http://www.itu.int/md/R15-WP5A-C-0540) (Russian Federation); [601](http://www.itu.int/md/R15-WP5A-C-0601) (IARU)  *M.[AMATEUR\_50\_MHZ]:* [469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 14](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N14!MSW-E) (WP 5A); [494](http://www.itu.int/md/R15-WP5A-C-0494) (Australia); [514](http://www.itu.int/md/R15-WP5A-C-0514/en) (Canada);  [538](http://www.itu.int/md/R15-WP5A-C-0538) (CEPT ECC PTD); [539](http://www.itu.int/md/R15-WP5A-C-0539) (Russian Federation); [549](http://www.itu.int/md/R15-WP5A-C-0549) (WMO); [595](http://www.itu.int/md/R15-WP5A-C-0595) (Switzerland);  [597](http://www.itu.int/md/R15-WP5A-C-0597) (France); [599](http://www.itu.int/md/R15-WP5A-C-0599) (IARU); [600](http://www.itu.int/md/R15-WP5A-C-0600) (IARU) |
| **Amateur texts** | [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) (WP 5A) |
| **Amateur satellite service** | [511](http://www.itu.int/md/R15-WP5A-C-0511) (WP 5C); [636](http://www.itu.int/md/R15-WP5A-C-0636) (WP 4A) [642](http://www.itu.int/md/R15-WP5A-C-0642) (WP 4A); [643](http://www.itu.int/md/R15-WP5A-C-0643) (WP 4A) |
| **Amateur services protection** | *Wireless power transmission:* [472](http://www.itu.int/md/R15-WP5A-C-0472/en) (WP 5B) |

Concerning WRC-19 agenda item 1.1, the working 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/469/Annex 14](https://www.itu.int/dms_pub/itu-r/md/15/wp5a/c/R15-WP5A-C-0469!N14!MSW-E.docx). Revisions to this document incorporated elements of documents [494](http://www.itu.int/md/R15-WP5A-C-0494) (Australia); [538](http://www.itu.int/md/R15-WP5A-C-0538) (CEPT ECC PTD); [549](http://www.itu.int/md/R15-WP5A-C-0549) (WMO); [595](http://www.itu.int/md/R15-WP5A-C-0595) (Switzerland); [597](http://www.itu.int/md/R15-WP5A-C-0597) (France) & [600](http://www.itu.int/md/R15-WP5A-C-0600) (IARU). Document [599](http://www.itu.int/md/R15-WP5A-C-0599) (IARU) was considered and noted for further work. Documents [514](http://www.itu.int/md/R15-WP5A-C-0514/en) (Canada) and [539](http://www.itu.int/md/R15-WP5A-C-0539) (Russian Federation) were considered and noted. The study going forward is 5A/650 Annex 14.

Draft CPM text for WRC-19 agenda item 1.1 was carried forward in Document 5A/469 Annex 5 and contributions [540](http://www.itu.int/md/R15-WP5A-C-0540) (Russian Federation) & [601](http://www.itu.int/md/R15-WP5A-C-0601) (IARU) were incorporated into the draft CPM text. The consensus draft CPM text for agenda item 1.1 is contained in Doc. 5A/TEMP/227.

Relevant to the amateur-satellite service, liaison statements [511](http://www.itu.int/md/R15-WP5A-C-0511) (WP 5C); [636](http://www.itu.int/md/R15-WP5A-C-0636) (WP 4A) [642](http://www.itu.int/md/R15-WP5A-C-0642) (WP 4A) and [643](http://www.itu.int/md/R15-WP5A-C-0643) (WP 4A) generated some discussions within WG5A-1 and the decision was made to draft a liaison statements in response to [636](http://www.itu.int/md/R15-WP5A-C-0636) and the reply liaison statement is 5A/TEMP/226r1 Contributions [511](http://www.itu.int/md/R15-WP5A-C-0511) (WP 5C); [642](http://www.itu.int/md/R15-WP5A-C-0642) (WP 4A) ; [643](http://www.itu.int/md/R15-WP5A-C-0643) (WP 4A) were noted.

Liaison statement [472](http://www.itu.int/md/R15-WP5A-C-0472/en) (WP 5B) on the issue of Wireless Power Transmission was noted.

The work plan for WRC-19 agenda item 1.1 ([5A/469 Annex 5](https://www.itu.int/dms_pub/itu-r/md/15/wp5a/c/R15-WP5A-C-0469!N05!MSW-E.docx)) was updated and became Document 5A/TEMP/244. Work on the agenda item is progressing more-or-less in accordance with the work plan.

WP 5A can cease carrying forward Document [5A/114 Annex 16](http://www.itu.int/md/R15-WP5A-C-0114) (WDPDNR amateur WSJT) as no work will be undertaken on the topic until some time in the future.

Table 2

Output documents from WG 5A-1

|  |  |  |
| --- | --- | --- |
| Topic | WP 5A Action | Temp document |
| Liaison statement to WP 4A re satellite issues | Approve | 5A/TEMP/226r1 |
| Liaison statement to WP 5B, 5C, 6A, 3K and 3M re progress on AI 1.1 | Approve | 5A/TEMP/243 |
| 50 MHz Spectrum needs and sharing study | Carry forward | 5A/TEMP/245 |
| Preliminary Draft CPM text AI 1.1 | Carry forward | 5A/TEMP/227 |
| WRC-19 AI 1.1 work report | Attach to WP 5A report | 5A/TEMP/244 |
| WG5A-1 Chairmans report | Attach to WP 5A report | 5A/TEMP/246 |

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

* Complete work on WRC-19 agenda item 1.1 spectrum needs, sharing and compatibility studies.
* Review and revise draft CPM text for WRC-19 agenda item 1.1.
* Respond to liaison notes from other groups as appropriate.
* Continue to review and, update as necessary, ITU-R Recommendations, Reports and Handbooks relevant to the amateur and amateur-satellite services.
* Any other work relevant to the amateur and amateur-satellite service that is bought to the meeting.

Conclusion

Despite some significant setbacks the view of WG5A1 is that good progress was made on work towards WRC19 agenda item 1.1. The WG 5A-1 chair enjoyed working with all the delegates and is grateful for their thoughtful input contributions, diligent work, expert knowledge and goodwill.

Dale Hughes

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

Email: [dalevk1dsh@gmail.com](mailto:dalevk1dsh@gmail.com)

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

## 2.1 Executive summary

Work continued on WRC-19 agenda item (AI) 1.11, completed the PDN Report ITU-R M.[RSTT.DESCRIPTION] on description of Railway Radiocommunication Systems between Train and Trackside (RSTT) and further developed the working document towards a PDN Recommendation ITU-R M.[RSTT.FRQ] on harmonization of frequencies and related frequency arrangements for railway radiocommunication systems between train and trackside and the working document toward a PDN Report ITU-R M.[RSTT.USAGE] on current and future usage of railway radiocommunication systems between train and trackside (RSTT).

Work completed on the development of the revision of Recommendation ITU-R M.2003 "Multiple Gigabit Wireless Systems in frequencies around 60 GHz" and its companion Report ITU-R M.2227.

Work continued on the development of working document towards a preliminary draft new Report ITU-R M.[CDLMR] on conventional digital land mobile radios.

Work continued on the development of working document towards a preliminary draft new Recommendation ITU-R M.[MS-RXCHAR-28] on Receiver characteristics and protection criteria for systems (excluding IMT) in the mobile service in the frequency range 27.5-29.5 GHz for use in sharing and compatibility studies with earth stations in motion operating in geostationary FSS networks and with applications under the fixed service and elevated to a PDNR.

## 2.2 Systems and standards

Working Group 5A-2 met four times at the nineteenth meeting of WP 5A in Geneva. Working Group 5A-2 received the 49 documents assigned by the WP 5A Plenary as follows:

|  |  |
| --- | --- |
|  | **Document 5A/…** |
| 2.2.1 AI 1.11 (Railways Res. 236) | *Draft CPM text:* [469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 6](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N06!MSW-E) & [Annex 7](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N07!MSW-E) (WP 5A); [548](http://www.itu.int/md/R15-WP5A-C-0548) (Canada); [573](http://www.itu.int/md/R15-WP5A-C-0573) (China); [622](http://www.itu.int/md/R15-WP5A-C-0622) (Germany, Finland, France, Portugal, Slovenia, Sweden, Switzerland)  *RSTT.DESCRIPTION:* [469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 16](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N16!MSW-E) (WP 5A); [501](http://www.itu.int/md/R15-WP5A-C-0501)(Germany); [571](http://www.itu.int/md/R15-WP5A-C-0571) (China)  *RSTT.USAGE:* [469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 17](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N17!MSW-E) (WP 5A); [502](http://www.itu.int/md/R15-WP5A-C-0502) (Germany); [507](http://www.itu.int/md/R15-WP5A-C-0507) (APT); [572](http://www.itu.int/md/R15-WP5A-C-0572) (China); [560](http://www.itu.int/md/R15-WP5A-C-0560) (Viet Nam); [567](http://www.itu.int/md/R15-WP5A-C-0567) (Korea); [588](http://www.itu.int/md/R15-WP5A-C-0588) (Japan); [589](http://www.itu.int/md/R15-WP5A-C-0589) (Japan); [607](http://www.itu.int/md/R15-WP5A-C-0607) (France);  [624](http://www.itu.int/md/R15-WP5A-C-0624) (The Netherlands)  *RSTT Frequencies:* [469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 18](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N18!MSW-E) (WP 5A); [513](http://www.itu.int/md/R15-WP5A-C-0513/en) (Canada); [524](http://www.itu.int/md/R15-WP5A-C-0524) (USA); [541](http://www.itu.int/md/R15-WP5A-C-0541) (Russian Federation); [568](http://www.itu.int/md/R15-WP5A-C-0568) (Korea);  [590](http://www.itu.int/md/R15-WP5A-C-0590) (Japan); [612](http://www.itu.int/md/R15-WP5A-C-0612) (Africa region countries);  [620](http://www.itu.int/md/R15-WP5A-C-0620) (Germany, Austria, Portugal, Slovenia, Switzerland) |
| 2.2.2 Broadband Wireless Access | *M.[MS-RXCHAR-28]:* [469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 21](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N21!MSW-E) (WP 5A); [523](http://www.itu.int/md/R15-WP5A-C-0523) (USA); [613](http://www.itu.int/md/R15-WP5A-C-0613) (Intel, Samsung); [580](http://www.itu.int/md/R15-WP5A-C-0580) (Japan)  *Regulatory tools / Infrastructure sharing:* [489](http://www.itu.int/md/R15-WP5A-C-0489/en) (WP 1B)  *ENG:* [503](http://www.itu.int/md/R15-WP5A-C-0503) (WP 6C); [529](http://www.itu.int/md/R15-WP5A-C-0529/) (WP 6A); [530](http://www.itu.int/md/R15-WP5A-C-0530/) (WP 6C) |
| 2.2.3 Land mobile systems | *M.[CDLMR]:* [469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 15](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N15!MSW-E) (WP 5A); [555](http://www.itu.int/md/R15-WP5A-C-0555) (New Zealand);  [561](http://www.itu.int/md/R15-WP5A-C-0561) (Viet Nam); [562](http://www.itu.int/md/R15-WP5A-C-0562) (Mexico); [563](http://www.itu.int/md/R15-WP5A-C-0563) (Motorola Solutions)  *M.2014:* [304](http://www.itu.int/md/R15-WP5A-C-0304) (ETSI TC ERM)  *M.478:* [598](http://www.itu.int/md/R15-WP5A-C-0598) (Saudi Arabia)  *Question 254/5:* [625](http://www.itu.int/md/R15-WP5A-C-0625) (ETSI) |
| 2.2.4 MGWS | [469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 19](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N19!MSW-E) & [Annex 20](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N20!MSW-E) (WP 5A); [525](http://www.itu.int/md/R15-WP5A-C-0525) (USA); [592](http://www.itu.int/md/R15-WP5A-C-0592) (Japan); [593](http://www.itu.int/md/R15-WP5A-C-0593) (Japan) |
| 2.2.5 Update of Rep. ITU-R M.2282 | [559](http://www.itu.int/md/R15-WP5A-C-0559) (Telstra, Nokia) |

Working Group 5A-2 set up one sub-working group and one drafting group to deal with WRC-19 AI 1.11 Railway and CDLMR respectively:

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

– DG 5A2-1 CDLMR Mr. David Tejeda

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

Sub-Working Group (SWG 5A-2-1 A.I.1.11 Railway) chaired by Mr. Bin LIU (CHN) was established to deal with the preparation issues for WRC-19 AI 1.11. This SWG met nine times and had considered all assigned contributions. During the meeting, two Drafting Group (DG RSTT.Usage and DG RSTT.Frequency) were established. The two DGs were chaired by Mr. C.Bose (Germany) and Mr. Yamazaki (Japan), having 5 meetings and 6 meetings respectively.

The following issues had been discussed and 6 TEMP documents had been formed.

a) PDN Report ITU-R M. [RSTT.DESCRIPTION] Description of railway radiocommunication systems between train and trackside (RSTT)

Inputs: 469 Annex 16 (WP 5A); 501 (Germany); 571 (China).

Outputs: WP 5A/TEMP 211 Rev1. The improvement to PDNR had been approved by SWG and brought to WP 5A for upgrading to Draft New Report. Then consequently it will be sent to SG 5 for approval.

Status: to be upgraded to DNR

b) WD2PDN Report ITU-R M. [RSTT.USAGE] Current and future usage of railway radiocommunication systems between train and trackside (RSTT)

Inputs: [469](https://www.itu.int/md/R15-WP5A-C-0469/en) Annex 17 (WP 5A); 502 (Germany); 507 (APT); 524 (USA); 572 (China); 560 (Viet Nam); 567 (Korea); 588 (Japan); 589 (Japan); 607 (France); 624 (The Netherlands).

Outputs: WP 5A/TEMP 250. This Working document had been improved and would be carried forward to the next WP 5A meeting.

Status: Working Document, Attached to WP 5A Chairman’s Report

c) WD2PDN RECOMMENDATION ITU-R M.[RSTT\_FRQ] Harmonization of frequencies and related frequency arrangements, for railway radiocommunication systems between train and trackside

Inputs: 469 Annex 18 (WP 5A); 513 (Canada); 541 (Russian Federation); 568 (Korea); 590 (Japan); 612 (Africa region countries); 620 (Germany, Austria, Portugal, Slovenia, Switzerland).

Outputs: WP 5A/TEMP 251. This Working document had been improved and would be carried forward to the next WP 5A meeting

Status: Working Document, Attached to WP 5A Chairman’s Report

d) WD2 DRAFT CPM TEXT FOR WRC-19 AGENDA ITEM 1.11

Inputs: 469 Annex 6 & Annex 7 (WP 5A); 548 (Canada); 573 (China); 622 (Germany, Finland, France, Portugal, Slovenia, Sweden, Switzerland).

Outputs: WP 5A/TEMP 251. This Working document had been improved and would be carried forward to the next WP 5A meeting

Status: Working Document, Attached to WP 5A Chairman’s Report

e) Review the work plan

Inputs: None.

Outputs: Doc. 5A/TEMP/249. The work plan for preparation for WRC-19 agenda item 1.11 had been revised.

Status: Attached to WP 5A Chairman’s Report

f) Reply Liaison statement to APT

Inputs: 507 (APT).

Outputs: Doc. 5A/TEMP/248. This draft reply liaison statement will be sent to APT with respect to study progress on RSTT in WP5A and copy to ATU, ASMG, CEPT, CITEL and RCC for information.

Status: Attached to WP 5A Chairman’s Report.

g) Establishment of an email reflector

This SWG proposed to establish an email reflector, to exchange information of ongoing studies with respect to agenda item 1.11. Administrations could prepare their contributions to the next WP 5A meeting, taking into account the information from the email reflector. The Chairman of this SWG encouraged administrations to re-check related data within the WD2PDN Report ITU-R M.[RSTT.USAGE].

### 2.2.2 Broadband Wireless Access

Input documents: [469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 21](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N21!MSW-E) (WP 5A); [523](http://www.itu.int/md/R15-WP5A-C-0523) (USA); [613](http://www.itu.int/md/R15-WP5A-C-0613) (Intel, Samsung); [580](http://www.itu.int/md/R15-WP5A-C-0580) (Japan);   
[489](http://www.itu.int/md/R15-WP5A-C-0489/en) (WP 1B)*;* [503](http://www.itu.int/md/R15-WP5A-C-0503) (WP 6C); [529](http://www.itu.int/md/R15-WP5A-C-0529/) (WP 6A); [530](http://www.itu.int/md/R15-WP5A-C-0530/) (WP 6C)

Output document: 5A/TEMP/209R1 (M. [MS.RXCHAR-28])

Doc. [489](http://www.itu.int/md/R15-WP5A-C-0489/en) from WP1B is a liaison statement on Report ITU-R SM.[REGULATORY TOOLS] “Regulatory tools to support enhanced shared use of the spectrum”. WG 5A-2 took note of the information provided by WP 1B and did not see the need for further action.

Docs. [503](http://www.itu.int/md/R15-WP5A-C-0503) and [530](http://www.itu.int/md/R15-WP5A-C-0530/) from WP 6C are liaison statements on Report M.2373 “Audio-visual capabilities and applications supported by terrestrial IMT systems”. WG 5A-2 took note of the information provided by WP 6C to WP 5D and did not see the need for further action.

Doc. [529](http://www.itu.int/md/R15-WP5A-C-0529/) from WP 6A is liaison statement on tuning ranges, technical parameters, operational characteristics and deployment scenarios of SAB/SAP as utilized in broadcasting. WG 5A-2 took note of the information provided by WP 6A and did not see the need for further action.

Docs. [523](http://www.itu.int/md/R15-WP5A-C-0523) (USA), [613](http://www.itu.int/md/R15-WP5A-C-0613) (Intel, Samsung) and [580](http://www.itu.int/md/R15-WP5A-C-0580) (Japan) are contributions on the working document towards a preliminary draft new Recommendation M. [MS-RXCHAR-28] on Receiver characteristics and protection criteria for systems (excluding IMT) in the mobile service in the frequency range 27.5-29.5 GHz for use in sharing and compatibility studies with earth stations in motion operating in geostationary FSS networks and with applications under the fixed service. WG 5A-2 further improved the document based on the input contributions and elevated it to PDNR status.

### 2.2.3 Land mobile systems

Input documents: [469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 15](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N15!MSW-E) (WP 5A); [555](http://www.itu.int/md/R15-WP5A-C-0555) (New Zealand); [561](http://www.itu.int/md/R15-WP5A-C-0561) (Viet Nam); [562](http://www.itu.int/md/R15-WP5A-C-0562) (Mexico);   
[563](http://www.itu.int/md/R15-WP5A-C-0563) (Motorola Solutions); [304](http://www.itu.int/md/R15-WP5A-C-0304) (ETSI TC ERM); [598](http://www.itu.int/md/R15-WP5A-C-0598) (Saudi Arabia); [625](http://www.itu.int/md/R15-WP5A-C-0625) (ETSI).

Output documents: TEMP/247(LS-CCV), 253(Report on CDLMR).

Carry forward documents: [304](http://www.itu.int/md/R15-WP5A-C-0304) (ETSI TC ERM); [598](http://www.itu.int/md/R15-WP5A-C-0598) (Saudi Arabia);

Doc. [304](http://www.itu.int/md/R15-WP5A-C-0304) is a liaison from ETSI TC ERM on revision of Report ITU-R M.2014 “Digital land mobile systems for dispatch traffic”. Because of the timing of meetings, the document did not get considered for the 2016 update of Report ITU-R M.2014. An immediate update is not proposed. The document could be kept on-file for the next time Report ITU-R M.2014 is updated. With this regard, WG 5A-2 decided to carry forward this document to the next WP 5A meeting.

Doc. [598](http://www.itu.int/md/R15-WP5A-C-0598) from Saudi Arabia proposes to initiate the revision of Recommendation ITU-R M.478-5 Technical characteristics of equipment and principles governing the allocation of frequency channels between 25 and 3 000 MHz for the FM land mobile service. WG 5A-2 decided to carry forward this document to the next WP 5A meeting for further consideration.

Doc. [625](http://www.itu.int/md/R15-WP5A-C-0625) is a liaison from ETSI on Operation of short-range radiocommunication public access system supporting hearing aid systems. WG 5A-2 took note of the information provided by ETSI and didn’t see any need for further action.

DG CDLMR chaired by Mr. David Tejeda considered the other input contributions under the issue. DG CDLMR further developed the working document towards a preliminary draft new Report ITU‑R M.[CDLMR]”Conventional digital land mobile radio systems” and developed a Liaison statement to the Coordinate Committee for Vocabulary to ask the CCV to confirm the style of the terms in report ITU-R M.[CDLMR] and consider these for inclusion in the online integrated database of [ITU Terms and Definitions](http://www.itu.int/net/ITU-R/index.asp?redirect=true&category=information&link=terminology-database&lang=en&adsearch=&SearchTerminology=&sector=&language=all&part=abbreviationterm&kind=anywhere).

### 2.2.4 MGWS

Input documents: [469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 19](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N19!MSW-E) & [Annex 20](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N20!MSW-E) (WP 5A); [525](http://www.itu.int/md/R15-WP5A-C-0525) (USA); [592](http://www.itu.int/md/R15-WP5A-C-0592) (Japan); [593](http://www.itu.int/md/R15-WP5A-C-0593) (Japan).

Output documents: TEMP/208(PDR on M.2003); 210(PDR on M.2227).

Preliminary draft revision of Recommendation ITU-R M.2003 and its companion Report ITU-R M.2227 were further improved and finalized based on the input contributions. WG 5A-2 agreed to send these two revision documents to WP 5A Plenary, then seek to submission to Study Group 5 for approval at its upcoming meeting in November 2017.

### 2.2.5 Update of Rep. ITU-R M.2282

Input documents: [559](http://www.itu.int/md/R15-WP5A-C-0559) (Telstra, Nokia)

Output documents: None

Carry forward documents: [559](http://www.itu.int/md/R15-WP5A-C-0559) (Telstra, Nokia)

One contribution (5A/559) was received proposing to develop a new report addressing harmonized arrangements for broadband air-to-ground communications links with passenger aircraft. It was suggested that this material might instead be incorporated into the existing [Report ITU-R M.2282-0](http://www.itu.int/pub/R-REP-M.2282) “Systems for public mobile communications with aircraft”.

Following discussion, it was decided to carry this contribution forward to the next meeting of WP 5A (May 2018) for further consideration. Further contributions on this matter are invited for the next meeting of WP 5A.

### 2.2.6 Review of ITU-R texts

Working Group 5A-2 reviewed the WP 5A texts Section 1 of [Annex 1](https://www.itu.int/dms_pub/itu-r/md/15/wp5a/c/R15-WP5A-C-0469!N01!MSW-E.docx) in [Doc. 5A/469](http://www.itu.int/md/R15-WP5A-C-0469), and [Guide to the use of ITU-R texts relating to the land mobile service](http://www.itu.int/oth/R0A06000001/en). Only a few tiny updates were proposed for Section 1 of [Annex 1](https://www.itu.int/dms_pub/itu-r/md/15/wp5a/c/R15-WP5A-C-0469!N01!MSW-E.docx) in [Doc. 5A/469](http://www.itu.int/md/R15-WP5A-C-0469).

### 2.2.7 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 new Recommendation ITU-R M. [CDLMR]

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

– Continue the work on the WAS Study Questions on the basis of input contributions.

### 2.2.8 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 from China, DG Chairs Mr. David Tejeda from Mexico, Mr. C. Bose from Germany and Mr. Yamazaki from Japan for their good and efficient work. The WG Chairman would also like to express particular thanks to Mr. Ogawa from Japan for consolidating the material of M.2003 and M.2227 and Mr. Arefi Reza from Intel for compiling the preliminary draft new Recommendation ITU-R M.[MS-RXCHAR-28].

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

## 3.1 Executive summary

Working Group 3 (WG 3) met on four occasions at the November 2017 meeting of Working Party 5A WG 3 considered thirteen input contributions, one carried forward documents, and three Annexes to the previous Working Party 5A Chairman’s Report. The input documents were related to the objectives for this meeting as indicated in Section 3.4.4 of [Annex 3 of 5A/469](http://www.itu.int/md/R15-WP5A-C-0469!N03!MSW-E):

1 Finalize the preliminary draft new Report ITU-R M.[PPDR Spectrum]

2 Finalize the consequential revision of Report ITU-R M.2377-0

3 Finalize the revision of Recommendation ITU-R M.2015-1

4 Consider possible suppression of Recommendation ITU-R M.1826

5 Carry forward 5A/80 and suspend if there are no relevant inputs to the next meeting.

The work of the group produced two liaison statements for transmittal and three preliminary draft documents to go to Study Group 5 and agreed to suppress the workplan associated with the revision of Report ITU-R M.2377.

## 3.2 Organization of the work

All input contributions were introduced at the Working Group level. The Disaster Relief Rapporteur’s Report (Doc. [5A/546](http://www.itu.int/md/R15-WP5A-C-0546/en)) was presented at the WP 5A Plenary and noted in Working Group 3. The WP 5A Chairman also tasked all WGs 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/dms_pub/itu-r/oth/0a/06/R0A060000010001MSWE.docx)” and of Section 1 in [Annex 1 of Doc. 5A/469](http://www.itu.int/md/R15-WP5A-C-0469!N01!MSW-E). These items were addressed at the Working Group level.

WG 3 created two drafting groups. One drafting group, tasked to further develop the preliminary draft revision of Recommendation ITU-R M.2015-1 and assess the need for consequential revisions to other Recommendations based on the decisions of WRC-15 and the revision of M.2015, was led by Mr. Stuart Shepard of Australia. A second drafting group, tasked to further develop the preliminary draft new Report ITU-R M.[PPDR SPECTRUM] and the consequential revision of Report ITU-R M.2377, was led by Mr. David Kershaw of New Zealand.

## 3.3 Execution of objectives

Objective 1: Finalize the preliminary draft new Report ITU-R M.[PPDR Spectrum], and

Objective 2: Finalize the consequential revision of Report ITU-R M.2377-0

The Drafting Group on PPDR Spectrum was assigned three work items at the Working Group 3 Plenary: the completion of the preliminary draft new Report on PPDR Spectrum, the consequential revision of Report ITU-R M.2377, and the proposed liaison to Working Party 5D, as it related to PPDR requirements in M.2377.

The DG met on one occasion to address the input contributions and relevant elements of the Chairman’s Report assigned to it. The documents considered by the DG, as well as their sources, are shown in the table below:

|  |  |
| --- | --- |
| **PPDR Spectrum** | [469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 23](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N23!MSW-E) (WP 5A);  [Attachment 2 to Annex 3 of 5A/469](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N03!MSW-E#att2) (workplan);  [544](http://www.itu.int/md/R15-WP5A-C-0544) (Tunisia); |
| **IMT-Adv/IMT-2020 for PPDR** | [536](http://www.itu.int/md/R15-WP5A-C-0536) (Australia) |

The DG took into consideration the relevant proposal in the input contribution to further refine the material in the preliminary draft new Report. Given the mature state of the document, and in line with the workplan attached to the previous WG Report, the Drafting Group proposed that the meeting consider elevating the document to Study Group 5.

The DG also finalized the consequential revision of Recommendation ITU-R M.2377-0, as much of the material in the new draft Report was extracted from Annexes 6 and 7 of M.2377-0. The Drafting Group proposed that meeting consider elevating the document to Study Group 5.

The following documents were developed in DG PPDR Spectrum:

1) 5A/TEMP/212Rev.1 - Liaison statement to ITU-R Working Party 5D on IMT-2020 technologies for PPDR

2) 5A/TEMP/213 - Draft new Report ITU-R M.[PPDR SPECTRUM], “Spectrum needs for Public Protection and Disaster Relief (PPDR)”)

3) 5A/TEMP/214Rev.1 - Draft revision of Report ITU-R M.2377-0

As a result of completing the above objectives, the DG recommended that the workplan for the development of Report ITU-R M.[PPDR Spectrum] and the consequential revision of M.2377-0 be suppressed.

Objective 3: Finalize the draft revision of Recommendation ITU-R M.2015

The Drafting Group on M.2015 was established under the leadership of Mr. Stuart Shepard (Australia) to address the further development of the preliminary draft revision of Recommendation ITU-R M.2015-1.

Ten input contributions were received at this meeting related to the revision of Recommendation ITU-R M.2015-1 as contained in Annex 22 of the Chairman’s Report of the previous meeting. The relevant documents are detailed in the table below:

|  |  |
| --- | --- |
| **Update Rec. ITU-R M.2015** | [Res. 646 (Rev.WRC-15)](http://www.itu.int/oth/R0A0600001A/en); [469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 22](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N22!MSW-E) (WP 5A); [495](http://www.itu.int/md/R15-WP5A-C-0495) (CITEL); [508](http://www.itu.int/md/R15-WP5A-C-0508) (APT); [510](http://www.itu.int/md/R15-WP5A-C-0510) (CEPT);  [526](http://www.itu.int/md/R15-WP5A-C-0526) (Malaysia); [535](http://www.itu.int/md/R15-WP5A-C-0535) (UAE); [544](http://www.itu.int/md/R15-WP5A-C-0544) (Tunisia);  [551](http://www.itu.int/md/R15-WP5A-C-0551) (Nigeria); [552](http://www.itu.int/md/R15-WP5A-C-0552) (Qatar); [564](http://www.itu.int/md/R15-WP5A-C-0564) (Motorola Solutions); [565](http://www.itu.int/md/R15-WP5A-C-0565) (ATU) |

Each of the input contributions was introduced and discussed in the Drafting Group. The Drafting Group met three times and engaged in detailed discussions of the proposals in the contributions, as a result, the preliminary draft revision of Recommendation ITU-R M.2015-1 was completed. Material from the contributions was incorporated into the appropriate annexes, sections and sub-sections based on the conceptual guidance document for the structure of the annexes (Attachment 2 to the WG Chairman’s Report from the May 2016 meeting).

The DG further confirmed the proper implementation of the proposed uniform structure for presenting the frequency arrangements within the annexes of Recommendation ITU-R M.2015, which had been attached to the previous WG 3 Report as Attachment 3. The Drafting Group proposed that the meeting consider elevating the document to Study Group 5.

Objective 4: Consider possible suppression of Recommendation ITU-R M.1826

In the process of revising Recommendation ITU-R M.2015, it was previously noted that some of the frequency arrangements now being included in the revision were either duplicative or updates of arrangements in Recommendation ITU-R M.1826. The DG on M.2015, therefore, also addressed the question of the possible suppression of Recommendation ITU-R M.1826.

The DG considered the input received from APT (Doc. [5A/508](http://www.itu.int/md/R15-WP5A-C-0508)) and CITEL (Doc. [5A/495](http://www.itu.int/md/R15-WP5A-C-0495)) on the topic. Based on the input received, the DG recommended that Recommendation ITU-R M.1826 be retained.

Objective 5: Carry forward 5A/80 and suspend if there are no relevant inputs to the next meeting

The DG on M.2015 also considered the proposals in Doc. 5A/80 for consequential revision of other Recommendations under the purview of WG 3, based on the decisions of WRC-15 and the revision of Recommendation ITU-R M.2015. The DG identified three Recommendations that could be considered for updating:

• Recommendation ITU-R M.1637-0 – Global cross-border circulation of radiocommunication equipment in emergency and disaster relief situations

• Recommendation ITU-R M.1826-0 – Harmonized frequency channel plan for broadband public protection and disaster relief operations at 4 940-4 990 MHz in Regions 2 and 3

• Recommendation ITU-R M.2009-1 – Radio interface standards for use by public protection and disaster relief operations in some parts of the UHF band in accordance with Resolution **646 (Rev.WRC-12)**

The DG also developed a liaison statement to the regional bodies thanking them for their contributions to the completion of the revision of Recommendation ITU-R M.2015-1, updating them on all the work related to PPDR that was completed by Working Group 3 at this meeting, and advising them of the possible need to update the three Recommendations listed above.

Having addressed the substantive proposals in Doc. 5A/80, the DG recommended that it no longer needed to be carried forward.

As a result of the work in the Drafting Group on M.2015, the following output documents were created:

1) [5A/TEMP/219Rev.1](https://www.itu.int/md/R15-WP5A-170522-TD-0219/en) - Liaison statement to regional organizations on public protection and disaster relief

2) [5A/TEMP/220Rev.1](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=R15-WP5A-161107-TD-0220) - Draft revision of Recommendation ITU-R M.2015-1.

## 3.4 Other matters

### 3.4.1 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/298](http://www.itu.int/md/R15-WP5A-C-0298!N01!MSW-E). A number of revisions to both documents were agreed in the Working Group to be provided to the WP 5A Chairman for incorporation in the Chairman’s Report.

### 3.4.2 Future work

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

– Consider possible revision of Recommendations ITU-R M.1637, M.1826, and M.2009, based on input contributions.

## 3.5 Conclusion

Contributions are encouraged to the next meeting of Working Party 5A that address the possible revision of Recommendations ITU-R M.1637, ITU-R M.1826, and ITU-R M.2009.

The WG Chairman would like to express sincere thanks to Mr. Shepard and Mr. Kershaw for their able leadership of the drafting groups and to all the participants of Working Group 3 for their contributions to the work at this meeting.

# 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 continued its discussions on WRC-19 agenda item 9.1, Issue 9.1.5.

## 4.1 Introduction

Working Group 5A-4 met six times during the November 2017 meeting of Working Party 5A and considered 68 input and carried-forward contributions and developed 23 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/15.

### 4.2.1 Sharing studies (general)

Input documents: 5A/[490](https://www.itu.int/md/R15-WP5A-C-0490/en) (WP 1A); 5A/[637](https://www.itu.int/md/R15-WP5A-C-0637/en) (WP 7A)

WG 5A-4 took note of the information provided by WP 1A and WP 7A and did not see a need for further action at this point in time.

### 4.2.2 RR Appendix 7 and Rec. ITU-R SM.1448

Input documents: 5A/[493](https://www.itu.int/md/R15-WP5A-C-0493/en) (WP 1A); 5A/[512](https://www.itu.int/md/R15-WP5A-C-0512/en) (WP 4C); 5A/[639](https://www.itu.int/md/R15-WP5A-C-0639/en) (WP 4A)

Output document: 5A/TEMP/218 (joint LS to WP 1A)

WG 5A-4 took note of replies to WP 1A from WP 4A and WP 4C and developed a joint reply liaison statement to WP 1A together with WP 5B and WP 5C to provide the initial views on this topic. It was agreed that a more detailed review and response should be developed at the next WP 5A meeting.

### 4.2.3 Range 40-50 MHz

Input documents: 5A/[528](https://www.itu.int/md/R15-WP5A-C-0528/en) (WP 6A); 5A/[640](https://www.itu.int/md/R15-WP5A-C-0640/en) (WP 7C)

Output document: 5A/TEMP/242(Rev.1) (LS to WP 7C)

WG 5A-4 took note of the information from WP 6A and developed a reply liaison statement to WP 7C to provide comments on this topic.

### 4.2.4 Range 92-109.5 GHz

Input documents: 5A/[481](https://www.itu.int/md/R15-WP5A-C-0481/en) (WP 5B); 5A/[545](https://www.itu.int/md/R15-WP5A-C-0545/en) (WP 7D); 5A/[591](https://www.itu.int/md/R15-WP5A-C-0591/en) (Japan); 5A/[641](https://www.itu.int/md/R15-WP5A-C-0641/en) (WP 7C)

Output documents: 5A/TEMP/222 (Working document RSTT coexistence)  
 5A/TEMP/224(Rev.2) (LS to 7C)

WG 5A-4 took note of the information from WP 5B and WP 7D which might be relevant to WG 5A-2. WG 5A-4 also updated the working document on RSTT coexistence and developed a reply liaison statement to WP 7C on this topic.

### 4.2.5 Sharing methods

Input document: 5A/[492](https://www.itu.int/md/R15-WP5A-C-0492/en) (WP 1A)

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

### 4.2.6 Sharing characteristics

Input documents: 5A/[476](https://www.itu.int/md/R15-WP5A-C-0476/en) (WP 5C); 5A/[610](https://www.itu.int/md/R15-WP5A-C-0610/en) (France & Switzerland)

Output document: 5A/TEMP/230 (Working document revision M.1808)

WG 5A-4 took note of the information from WP 5C and agreed to initiate a working document towards a preliminary draft revision of Recommendation ITU-R M.1808.

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

Input document: 5A/[471](https://www.itu.int/md/R15-WP5A-C-0471/en) (WP 5C)

WG 5A-4 took note of the information from WP 5C and agreed to provide detailed comments on the ongoing revision of Recommendation ITU-R F.1336 at the next WP 5A meeting based on an updated version of the revision from WP 5C.

### 4.2.8 RF noise

Input document: 5A/[486](https://www.itu.int/md/R15-WP5A-C-0486/en) (WP 1C)

Output document: 5A/TEMP/225(Rev.1) (LS to WP 1A)

WG 5A-4 took note of the information from WP 1C and developed a liaison statement to WP 1A to provide comments on this topic.

### 4.2.9 Resolution 155

Input documents: 5A/[474](https://www.itu.int/md/R15-WP5A-C-0474/en) (WP 5B); 5A/[498](https://www.itu.int/md/R15-WP5A-C-0498/en) (Director, BR)

Output document: 5A/TEMP/217(Rev.1) (LS to WP 5B)

WG 5A-4 developed a reply liaison statement to WP 5B to provide comments on this topic and also referred WP 5B to the information as provided by the Director, BR.

### 4.2.10 Sharing by zones

Input document: 5A/[515](https://www.itu.int/md/R15-WP5A-C-0515/en) (Canada)

Output document: 5A/TEMP/223 (Working document M.[GEO.SHARE])

WG 5A-4 updated the working document based on the input contribution received.

### 4.2.11 Non-ionizing radiation

Input documents: 5A/[482](https://www.itu.int/md/R15-WP5A-C-0482/en) (ITU-T SG 5); 5A/[485](https://www.itu.int/md/R15-WP5A-C-0485/en) (WP 1C); 5A/[496](https://www.itu.int/md/R15-WP5A-C-0496/en) (ITU-D SG 2 Rapp. for Q. 7/2)

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

### 4.2.12 WRC-19 agenda item 1.3

Input document: 5A/[634](https://www.itu.int/md/R15-WP5A-C-0634/en) (WP 7B)

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

### 4.2.13 WRC-19 agenda item 1.5

Input documents: 5A/470 (WP 5C); 5A/[566](https://www.itu.int/md/R15-WP5A-C-0566/en) (Korea); 5A/[626](https://www.itu.int/md/R15-WP5A-C-0626/en) (WP 4A)

Output document: 5A/TEMP/229(Rev.1) (LS to WP 4A)

WG 5A-4 took note of the comments from WP 5C and, in reply to the questions raised by WP 4A developed a reply liaison statement to provide additional information as requested by WP 4A. This was based on the progress made in WG 5A-2 at this WP 5A meeting in updating their Preliminary Draft New Recommendation ITU-R M.[MS-RXCHAR-28] “Receiver characteristics and protection criteria for systems (excluding IMT) in the mobile service in the frequency range 27.5-29.5 GHz for use in sharing and compatibility studies with earth stations in motion operating in geostationary FSS networks and with applications under the fixed service”

### 4.2.14 WRC-19 agenda item 1.7

Input document: 5A/527 (WP 6A); 5A/[632](https://www.itu.int/md/R15-WP5A-C-0632/en) (WP 7B); 5A/[633](https://www.itu.int/md/R15-WP5A-C-0633/en) (WP 7B)

WG 5A-4 took note of the information provided by WP 6A and WP 7B and did not see a need for further action at this point in time.

### 4.2.15 WRC-19 agenda item 1.9.1

Input document: 5A/[647](https://www.itu.int/md/R15-WP5A-C-0647/en) (WP 5B)

WG 5A-4 took note of the request from WP 5B for information related to this issue but since the document arrived only during the second week of WP 5A, it was not possible to provide immediate feedback and it was decided to carry 5A/647 forward to the next WP 5A for a detailed review and to develop a detailed reply at that meeting.

### 4.2.16 WRC-19 agenda item 1.9.2

Input document: 5A/[543](https://www.itu.int/md/R15-WP5A-C-0543/en) (Russian Federation)

Output document: 5A/TEMP/216(Rev.1) (LS to WP 5B)

After consideration of the input contribution on this topic, WG 5A-4 developed a liaison statement to WP 5B to provide information regarding the interference criteria of conventional and trunked land mobile systems to be used in sharing studies for WRC-19 agenda item 1.9.2.

### 4.2.17 WRC-19 agenda item 1.13

Input document: 5A/[638](https://www.itu.int/md/R15-WP5A-C-0638/en) (YahSat, Eutelsat, HISPASAT, Inmarsat, Intelsat, O3b Networks, OneWeb, SES)

WG 5A-4 took note of the information provided by a number of sector members to Task Group 5/1 and did not see a need for further action at this point in time as WP 5A was not involved in the ongoing work on WRC-19 agenda item 1.13 at this point in time anymore.

**4.2.18 WRC-19 agenda item 1.14**

Input documents: 5A/[475](https://www.itu.int/md/R15-WP5A-C-0475/en) (WP 5C); 5A/[566](https://www.itu.int/md/R15-WP5A-C-0566/en) (Korea)

Output document: 5A/TEMP/215(Rev.1) (LS to WP 5C)

WG 5A-4 took note the information provided by WP 5C and developed a liaison statement to WP 5C to provide additional information to WP 5C for their studies.

**4.2.19 WRC-19 agenda item 1.16**

Input documents: 5A/252 (Japan); 5A/380 (USA); 5A/479 (WP 5B); 5A/480 (WP 5B); 5A/499 (WPs 3K & 3M); 5A/533 (USA); 5A/534 (USA); 5A/537 (Australia); 5A/542 (Russian Federation); 5A/550 (Globalstar); 5A/553 (Globalstar); 5A/554 (Globalstar); 5A/574 (China); 5A/584 (Japan); 5A/585 (Japan); 5A/586 (Japan); 5A/587 (Japan); 5A/603 (Luxemburg); 5A/602 (France); 5A/604 (France & Austria); 5A/605 (France); 5A/606 (France); 5A/615 (UK); 5A/616 (France); 5A/617 (UK); 5A/618 (UK); 5A/619 (UK); 5A/621 (UK); 5A/630 (WP 7C); 5A/635 (WP 4A)

Output documents: 5A/TEMP/232(Rev.2) (LS to WP 4A)  
 5A/TEMP/233 (draft CPM text)  
 5A/TEMP/234 (working doc RLAN measurements)  
 5A/TEMP/235 (working doc RLAN req. & par.)  
 5A/TEMP/236(Rev.1) (working doc RLAN sharing 5150-5250 MHz)  
 5A/TEMP/237 (working doc RLAN sharing 5250-5350 MHz)  
 5A/TEMP/238 (working doc RLAN sharing 5350-5470 MHz)  
 5A/TEMP/239 (working doc RLAN sharing 5725-5850 MHz)  
 5A/TEMP/240 (elements of sharing 5850-5925 MHz)  
 5A/TEMP/241 (workplan)

WG 5A-4 continued the work under WRC-19 agenda item 1.16 in a dedicated sub-working group chaired by Hector MARIN (MEX). The SWG met 9 times and formed one Drafting Group chaired by Jicheng FANG (CHN) to progress the work on the working documents on RLAN sharing which met 4 times.

Based on the above input contributions, the draft CPM text and the various working documents as contained in the Chairman’s Report from the previous meeting were updated. Due to lack of time and the number of input contributions, it was not possible to review every proposed edit in detail and Editor’s Notes have been inserted into the documents to clearly indicate the status of the discussion for each item. The content of Document 5A/[584](https://www.itu.int/md/R15-WP5A-C-0584/en) was not discussed at all because the participants of WG 5A-4 did not reach agreement to start the revision work of Recommendation ITU-R M.1652 at this stage. Therefore, it was agreed to carry Document 5A/584 forward to the next meeting for detailed discussions. It was also decided to carry forward document 5A/[585](https://www.itu.int/md/R15-WP5A-C-0585/en) to the next WP 5A meeting for further consideration as is was not possible to consider all proposals in this document at this meeting of WP 5A. Furthermore, a liaison statement to WP 4A was developed to seek comments on parameters for FSS feeder links.

Since no input contributions were received on the working document on RLAN Mitigation (Annex 25 to Document 5A/469) and the compilation document on possible techniques that could facilitate RLAN sharing (Annex 26 to Document 5A/469), these two documents were carried forward to the next meeting unchanged.

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

Input documents: 5A/[473](https://www.itu.int/md/R15-WP5A-C-0473/en) (WP 5B); 5A/[547](https://www.itu.int/md/R15-WP5A-C-0547/en) (USA)

Output documents: 5A/TEMP/228 (draft CPM text); 5A/TEMP/231 (workplan)

Considering the amount of time required at this WP 5A meeting for the work on WRC-19 agenda item 1.16, it was decided to not revise the draft CPM text and workplan for WRC-19 agenda item 9.1, issue 9.1.5 at this time, but instead carry forward the two input contributions 5A/[473](https://www.itu.int/md/R15-WP5A-C-0473/en) and 5A/[547](https://www.itu.int/md/R15-WP5A-C-0547/en) to the next meeting for detailed consideration. As a consequence, the draft CPM text and workplan are reproduced in the above TEMP documents unchanged from the previous WP 5A meeting.

### 4.2.21 WRC-19 agenda item 9.1, issue 9.1.9

Input document: 5A/[627](https://www.itu.int/md/R15-WP5A-C-0627/en) (WP 7C)

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

## 4.3 Revision of WP 5A texts

WG 5A-4 reviewed Section 1 of Annex 1 to document 5A/469 and the Guide to the use of ITU-R texts relating to the land mobile service and provided one editorial update to Section 1 to the Chairman of WP 5A for inclusion.

## 4.4 Objectives for the next WP 5A meeting

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

* Continue work under WRC-19 agenda item 1.16 and the related work on the RLAN mitigation techniques and sharing studies and finalize the draft CPM text.
* Finalize the draft CPM text for WRC-19 agenda item 9.1, issue 9.1.5.
* Develop a detailed review and response to WP 1A regarding their work on RR Appendix 7 and Recommendation ITU-R SM.1448 (see Document 5A/493).
* Develop a detailed review and response to 5B regarding their work on WRC-19 agenda item 1.9.1 (see Document 5A/647).
* Continue work on the working document on sharing schemes in the land mobile service.
* Continue work on the working document on 90 GHz RSTT coexistence.

## 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 continuing in his role as SWG Chair for WRC-19 agenda item 1.16.

Regarding the remaining work on the draft CPM text for agenda item 1.16, which must be completed at the next WP 5A meeting, WG 5A-4 participants agreed to strongly encourage the interested parties to work towards compromise solutions during the preparation of input contributions to the next WP 5A meeting so that this critical work item can be completed successfully by addressing the few outstanding items at that meeting.

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

Working Group 5A-5 (WG 5A-5) met seven times during the 19th meeting of ITU-R WP 5A from 6th to 16th November 2017. Around 80 delegates from Australia, Brazil, Germany, Canada, Guinea, China, Egypt, France, Ghana, India, Italy, Japan, Korea, Luxemburg, Mexico, The Netherlands, Nigeria, Russian Federation, Singapore, Sweden, Switzerland, South Africa, Thailand, United Arab Emirates, United Kingdom, USA, Ericsson, Intel, Microsoft, Qualcomm, Robert Bosch and Telstra participated in the meetings. The tasks assigned to WG 5A-5 address new technologies.

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

|  |  |
| --- | --- |
| – AI 1.12 (ITS, Res. 237) | Draft CPM text: Documents 5A/[469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 8](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N08!MSW-E) & [Annex 9](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N09!MSW-E) (WP 5A); [505](http://www.itu.int/md/R15-WP5A-C-0505) (CEPT CPG PTD); [531](http://www.itu.int/md/R15-WP5A-C-0531) (USA); [575](http://www.itu.int/md/R15-WP5A-C-0575) (China); [583](http://www.itu.int/md/R15-WP5A-C-0583) (Japan);  Rec. ITU-R M.[ITS\_FRQ]: Documents 5A/[469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 34](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N34!MSW-E) (WP 5A); [532](http://www.itu.int/md/R15-WP5A-C-0532) (USA); [578](http://www.itu.int/md/R15-WP5A-C-0578) (China); [581](http://www.itu.int/md/R15-WP5A-C-0581) (Japan); [609](http://www.itu.int/md/R15-WP5A-C-0609) (France *et al.*) |
| – Intelligent transport system (ITS) (Q. 205-5/5) | ITS Usage:  Documents 5A/[469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 32](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N32!MSW-E) (WP 5A); [504](http://www.itu.int/md/R15-WP5A-C-0504) (CEPT CPG PTD); [506R1](http://www.itu.int/md/R15-WP5A-C-0506) (APT); [517](http://www.itu.int/md/R15-WP5A-C-0517) (Singapore); [518](http://www.itu.int/md/R15-WP5A-C-0518) (USA); [558](http://www.itu.int/md/R15-WP5A-C-0558) (Telstra);  [577](http://www.itu.int/md/R15-WP5A-C-0577) (China); [582](http://www.itu.int/md/R15-WP5A-C-0582) (Japan); [611](http://www.itu.int/md/R15-WP5A-C-0611) (Bosch)  M.1890 (Guidelines and Objectives):  Documents 5A/[469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 35](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N35!MSW-E) (WP 5A); [521](http://www.itu.int/md/R15-WP5A-C-0521) (USA); [556](http://www.itu.int/md/R15-WP5A-C-0556) (Telstra); [576](http://www.itu.int/md/R15-WP5A-C-0576) (China)  M.2084 (Radio Interface standards of V2X):  Documents 5A/[469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 33](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N33!MSW-E);[509](http://www.itu.int/md/R15-WP5A-C-0509) (3GPP TSG RAN); [520](http://www.itu.int/md/R15-WP5A-C-0520) (USA); [557](http://www.itu.int/md/R15-WP5A-C-0557) (Telstra); [569](http://www.itu.int/md/R15-WP5A-C-0569) (Korea)  Rev. of M.2057 (System characteristics of automotive radars):  Documents 5A/[478](http://www.itu.int/md/R15-WP5A-C-0478/en) (WP 5B)  Handbook:  Documents 5A/[469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 37](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N37!MSW-E) (WP 5A); [519](http://www.itu.int/md/R15-WP5A-C-0519) (USA); [570](http://www.itu.int/md/R15-WP5A-C-0570) (Korea) |
| – AI 1.15 (Above 275 GHz, Res. 767) | Documents 5A/ [469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 31](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N31!MSW-E) (WP 5A); [477](http://www.itu.int/md/R15-WP5A-C-0477/en) (WP 5C); [483](http://www.itu.int/md/R15-WP5A-C-0483/en) (WP 1A);  [491](http://www.itu.int/md/R15-WP5A-C-0491/en) (WP 1A); [500](http://www.itu.int/md/R15-WP5A-C-0500/en) (WPs 3J, 3K & 3M); [594](http://www.itu.int/md/R15-WP5A-C-0594) (Japan); [596](http://www.itu.int/md/R15-WP5A-C-0596) (Canada);  [628](http://www.itu.int/md/R15-WP5A-C-0628) (WP 7C); [629](http://www.itu.int/md/R15-WP5A-C-0629) (WP 7C) |
| – /9.1.8 (MTC, Res. 958) | Documents 5A/[469](http://www.itu.int/md/R15-WP5A-C-0469/en) [Annex 36](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N36!MSW-E) (WP 5A); [487](http://www.itu.int/md/R15-WP5A-C-0487/en) (WP 1B); [516](http://www.itu.int/md/R15-WP5A-C-0516/en) (WP 5D);  [522](http://www.itu.int/md/R15-WP5A-C-0522) (USA); [579](http://www.itu.int/md/R15-WP5A-C-0579) (China); [623](http://www.itu.int/md/R15-WP5A-C-0623) (Germany) |
| – CRS/ Dynamic Access –Technology | Documents 5A/[488](http://www.itu.int/md/R15-WP5A-C-0488/en) (WP 1B) |

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

|  |  |
| --- | --- |
| SWG/DG (Chairperson) | Terms of Reference |
| SWG 5A-5-1  – ITS: Intelligent Transport System  (Mr. Satoshi Oyama, Japan) | – Develop a draft CPM Text for WRC-19 AI 1.12  – Update work plan for WRC-19 A.I. 1.12;  – Develop a working document toward draft new Report ITU-R M.[ITS USAGE] on Intelligent Transport Systems (ITS) usage report in ITU-R member countries;  – Develop a working document towards preliminary draft new Recommendation ITU-R M.[ITS\_FRQ] on harmonization of frequency [bands/ranges] for Intelligent Transport Systems in the mobile service;  – Develop a working document towards revision of Recommendation ITU-R M.1890 on operational radiocommunication objectives and requirements for advanced intelligent transport systems;  – Develop Preliminary Draft Revision of Recommendation ITU-R M.2084-0 on Radio interface standards of vehicle-to-vehicle and vehicle-to-infrastructure communications for Intelligent Transport System applications;  – Liaise with external organization requesting for updated information on technical standards characteristics;  – Develop a working document towards preliminary draft revision of Land Mobile Handbook – Vol. 4 (ITS), 2006; |
| DG ITS-1 – Draft CPM text for AI 1.12  (Mr. Satoshi Oyama, Japan) | * Develop Draft CPM text for WRC-19 agenda item 1.12; * Update work plan for WRC-19 A.I. 1.12; |
| DG ITS-2  – M.[ITS\_FREQ] & Rev. of M.1890  (Mr. Tom Schaffnit, USA) | – Develop a working document towards preliminary draft new Recommendation ITU-R M.[ITS\_FRQ];  – Develop a working document towards a revision of Recommendation ITU-R M.1890; |
| DG ITS-3 – ITS Usage  (Ms. Bettina Erdem, Germany) | – Develop a working document towards preliminary draft new Report ITU-R M.[ITS USAGE] |
| DG ITS-4 – M.2084  (Mr. Andy Phang, Singapore) | – Develop Preliminary Draft Revision of Recommendation ITU-R M.2084-0;  – Liaise with external organization requesting for updated information on technical standards characteristics; |
| DG ITS-5 – LMH-ITS  (Mr. HyunSeo Oh, Korea) | – Develop a working document towards preliminary draft revision of Land Mobile Handbook – vol.4 (ITS), 2006 |
| DG 5A-5-1 – M.[NON\_IMT.MTC\_USAGE]  (Mr. Jean-Philippe Kermoal, Germany) | – Develop a working document towards preliminary draft new Report ITU-R M.[NON\_IMT.MTC\_USAGE] on Technical and operational aspects of Internet of Things and Machine-to-Machine applications by systems in the Mobile Service (excluding IMT);   * Develop a liaison statement to WP 1B on WRC-19 agenda item 9.1, issue 9.1.8; * Develop a liaison statement to WP 5D on WRC-19 agenda item 9.1, issue 9.1.8; * Update workplan for Report ITU-R M.[NON\_IMT.MTC\_USAGE] |

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

SWG 5A-5-1 ITS and its DGs ITS-1 to ITS-5 met twelve times as a whole, during the 19th meeting of WP 5A. DG 5A-5-1 on M.[NON\_IMT.MTC\_USAGE] met five times during the meeting.

## 5.1 Executive summary

WG 5A-5 completed its work on the development of 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 continued its work on the development of the working document towards preliminary draft new Report ITU-R M.[NON\_IMT.MTC\_USAGE] on technical and operational aspects of Internet of Things and Machine-to-Machine applications by systems in the Mobile Service (excluding IMT)

WG 5A-5 continued its work on WRC-19 agenda item 1.12 (ITS, Resolution **237 (WRC-15)**), 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 Recommendation ITU-R M.[ITS FRQ] of harmonization of frequency arrangements for Intelligent Transport Systems in the mobile service.

WG 5A-5 continued to develop a working document toward a preliminary draft revision of Recommendation ITU-R M.1890 of operational radiocommunication objectives and requirements for advanced intelligent transport systems.

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 to develop a working document toward a preliminary draft revision of Recommendation ITU-R M.2084-0 of radio interface standards of vehicle-to-vehicle and vehicle-to-infrastructure communications for Intelligent Transport System applications.

WG 5A-5 continued to develop a working document toward a revision of Land Mobile Handbook, Vol.4 – Intelligent Transport Systems.

## 5.2 Intelligent transport system (ITS)

WG 5A-5 considered twenty-seven input contributions and developed seven output documents:

1. Preliminary draft CPM text for WRC-19 A.I. 1.12 (Document 5A/TEMP/261R1).
2. A working document toward a Preliminary Draft New Recommendation ITU-R M.[ITS FRQ] of harmonization of frequency arrangements for Intelligent Transport Systems in the mobile service (Document 5A/TEMP/259R1);
3. A working document toward Preliminary Draft Revision of Recommendation ITU-R M.1890-1 of operational radiocommunication objectives and requirements for advanced intelligent transport systems (Document 5A/TEMP/258);
4. A working document toward Preliminary Draft New Report M.[ITS USAGE] of Intelligent Transport Systems Usage Report in ITU Member States (Document 5A/TEMP/260R2);
5. A working document toward a Preliminary Draft Revision of Recommendation ITU-R M.2084-0 of radio interface standards of vehicle-to-vehicle and vehicle-to-infrastructure communications for Intelligent Transport System applications (Document 5A/TEMP/263));
6. A working document toward revision of Land Mobile Handbook vol.4 - Intelligent Transport Systems (Document 5A/TEMP/264R1); and
7. Liaison Statement to external organizations on the revision of Recommendation ITU-R M.2084-0 - Radio interface standards of vehicle-to-vehicle and vehicle-to-infrastructure communications for Intelligent Transport System applications (Document 5A/TEMP/262R1).

WG 5A-5 considered four input contributions and developed preliminary draft CPM text for WRC‑19 agenda item 1.12 (Document 5A/TEMP/261R1). WG 5A-5 also considered four input contributions and developed preliminary draft new recommendation ITU-R M.[ITS FRQ] related to WRC‑19 agenda item 1.12 (Document 5A/TEMP/259R1).

WG 5A-5 also considered three input contributions and developed a working document towards preliminary draft revision of Recommendation ITU-R M.1890-0 of operational radiocommunication objectives and requirements for advanced intelligent transport systems (Document 5A/TEMP/258). The workplan is in [Attachment 1](#att1).

WG 5A-5 considered eight input contributions and further developed a working document towards preliminary draft new Report ITU-R M.[ITS USAGE] (Document 5A/TEMP/260R2). WG 5A-5 also update its work plan for the Report ITU-R M.[ITS USAGE] ([Attachment 2](#att2)).

It was discussed whether the studies related to coexistence of ITS (Now in Attachment to M.[ITS.USAGE] report) with other services are within the scope of M.[ITS.USAGE] report or alternatively a new report would have to be developed to cover other studies. WG 5A-5 invites contributions to the next WP 5A meeting from countries or regions in order to further develop the above document

WG 5A‑5 considered four input contributions and develop a working document toward Preliminary draft revision of Recommendation ITU-R M.2084-0 of radio interface standards of vehicle-to-vehicle and vehicle-to-infrastructure communications for Intelligent Transport System applications (Document 5A/TEMP/263). WG5A-5 agreed to extend the completion date of the revision of Recommendation ITU-R M.2084-0 to the 20th meeting of WP5A in May 2018 in order to collect further information ([Attachment 3](#att3)) and developed a liaison statement to external organizations (EO) of ITU (Document 5A/TEMP/262R1) to invite further information.

Regarding the revision of the handbook volume 4 "Intelligent Transport Systems" of the Land Mobile Handbook (LMH), WG5A-5 considered two input contributions and further developed a working document toward revision of Land Mobile Handbook, Vol. 4 – Intelligent Transport Systems (Document 5A/TEMP/264R1). The workplan is in [Attachment 4](#att4).

Regarding revision of Recommendation [ITU-R M.2057](http://www.itu.int/rec/R-REC-M.2057/en) ‘systems characteristics of automotive radars operating in the frequency band 76-81 GHz for intelligent transport systems applications’, WG 5A-5 received a liaison statement from WP 5B (Document [5A/478](https://www.itu.int/md/R15-WP5A-C-0478/en)). It was noted that WP 5B was currently developing draft revision of Recommendation ITU-R M.2057-0.

## 5.3 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 completed its work on technical and operational characteristics of the land mobile service in the frequency range 275-450 GHz. WG 5A-5 agreed to elevate the status of 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, to draft new Report so that it can be approved at the WP 5A plenary meeting to be sent to SG 5 meeting right after the WP 5A meeting (Document 5A/TEMP/205R3). WG 5A-5 also received a liaison statement from WP 1A (Document [5A/491](https://www.itu.int/md/R15-WP5A-C-0491/en)) and developed a liaison statement to WP 1A which informed that WP 5A finalized draft new Report ITU-R M.[300GHz\_MS\_CHAR] providing technical and operational characteristics, as well as spectrum needs of Land-Mobile Service (LMS) applications in the frequency range 275-450 GHz and sent it to SG 5 for final approval (Document 5A/TEMP/206R3).

WG 5A-5 also received five liaison statements (Documents 5A/477 (WP 5C), 483 (WP 1A), 500 (WPs 3J, 3K and 3M) 628 (WP7C) and 629 (WP7C). WG5A-5 noted these liaison statements.

WG 5A-5 also received an input contribution (Document [5A/596](https://www.itu.int/md/R15-WP5A-C-0596/en)), 1) informing that WP 5C would send a liaison statement and 2) attaching a proposed draft liaison statement to be considered at WP 5C. The liaison statement was noted.

## 5.4 WRC-19 agenda item 9.1, Issue 9.1.8 (MTC, Res. 958)

WG 5A-5 considered three input contributions. Based on one of the input contributions, WG 5A-5 renamed the identifier of a working document on Technical and operational aspects of Internet of Things and Machine-to-Machine applications by systems in the Mobile Service (excluding IMT), from M.[IOT/m2M\_usage] to M.[NON\_IMT.MTC\_USAGE]. WG 5A-5 continued its work on the development of the working document towards a preliminary draft new Report ITU-R M.[NON\_IMT.MTC\_USAGE] on technical and operational aspects of Internet of Things and Machine-to-Machine applications by systems in the Mobile Service (excluding IMT) (Document 5A/TEMP/254R1). WG 5A-5 also revised its workplan for the development of Report ITU-R M.[NON\_IMT.MTC\_USAGE] ([Attachment 5](#att5)).

WG 5A-5 receive a liaison statement from WP 1B which informed of WP5A that WP1B initiated its work on developing a working document towards preliminary draft new Report ITU-R SM.[LPWAN.MTC] (Document [5A/487](https://www.itu.int/md/R15-WP5A-C-0487/en)). In response to the liaison statement, WG 5A-5 developed a reply liaison statement to WP 1B informing that 1) WP 5A reviewed Document 5A/487 and utilized the technological aspects of the document for inclusion in WP 5A’s working document towards a preliminary draft new Report ITU-R M.[NON\_IMT.MTC\_USAGE] and that 2) from the non-IMT perspective, WP 5A is undertaking studies with respect to “*the technical and operational aspects of radio networks and systems, as well as spectrum needed”* for non-IMT technologies and would like to receive clarifications and comments from WP 1B on the studies undertaken by WP 1B with respect to the “*possible harmonized use of spectrum”* and other aspects in response to Resolution **958 (WRC-19)**, in order to avoid a duplication between WP 5A and WP 1B studies (Document 5A/TEMP/256R1).

WG 5A-5 developed a liaison statement to WP 5D which provided WP 5A’s latest information on a working document towards preliminary draft new Report ITU-R M.[NON\_IMT.MTC\_USAGE] so that WP 5D can update the CPM text on agenda item 9.1, issue 9.1.8 (Document 5A/TEMP/255R1).

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

WG 5A-5 received a liaison statement from WP 1B which informed that the preliminary draft new Report on cognitive radio “ITU-R SM.[CRS spectrum management challenges]” was approved at the June 2017 meeting of ITU-R Study Group 1, and would be published as Report ITU-R SM.2405-0 . WG 5A-5 noted the liaison statement.

## 5.6 Review of ITU-R texts

WG 5A-5 reviewed ITU-R texts pertinent to WG 5A-5 in Annex 1 to Document [5A/469](https://www.itu.int/md/R15-WP5A-C-0469/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.

## 5.7 Future work

WG 5A-5 continues its work on the development of the working document towards preliminary draft new Report ITU-R M.[NON\_IMT.MTC \_USAGE] on technical and operational aspects of Internet of Things and Machine-to-Machine applications by systems in the Mobile Service (excluding IMT).

WG 5A-5 continues to develop preliminary CPM text for WRC-19 agenda item 1.12.

WG 5A-5 continues to develop preliminary draft new Recommendation ITU-R M.[ITS FRQ].

WG 5A-5 continues to develop the working document toward a Preliminary Draft Revision of Recommendation ITU-R M.1890.

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

WG 5A-5 continues to develop the working document toward a Preliminary Draft Revision of Recommendation ITU-R M.2084-0.

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

Finally, WG 5A-5 Chairman would like to thank Sub-Working Group Chairperson Mr Satoshi Oyama, and Drafting Group Chairpersons Mr Tom Schaffnit, Ms Bettina Erdem, Mr Andy Phang, Mr HyunSeo Oh and Mr Jean-Philippe Kermoal for their excellent chairmanship and all participants for their contribution to work of the group.

Hitoshi Yoshino,  
 Chairman, WG 5A-5

**Attachments:**

[Attachment 1](#att1): Workplan for the development of Revision of Recommendation ITU-R M.1890-0 on operational radiocommunication objectives and requirements for advanced intelligent transport systems.

[Attachment 2](#att2): 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.

[Attachment 3](#att3): Workplan for the development of preliminary draft revision of Recommendation ITU-R M.2084-0 – “Radio interface standards of vehicle-to-vehicle and vehicle-to-infrastructure communications for Intelligent Transport System applications”.

[Attachment 4](#att4): Workplan for the development of revision of Land Mobile Handbook – Vol. 4 Intelligent Transport Systems.

[Attachment 5](#att5): Workplan for the development of the preliminary draft new Report ITU-R M.[NON\_IMT.MTC\_USAGE] on technical and operational aspects of Internet of Things and Machine-to-Machine applications by systems in the Mobile Service (excluding IMT).

Attachment 1 to Annex 3

Workplan for the development of Revision of Recommendation ITU-R M.1890-0 Operational radiocommunication objectives and requirements   
for advanced intelligent transport systems

|  |  |
| --- | --- |
| **Title** | Operational radiocommunication objectives and requirements for advanced intelligent transport systems |
| **Identifier** | Recommendation ITU-R M.1890-0 |
| **Document type** | Recommendation |
| **WP 5A Lead Group** | WG 5 New Technologies |
| **SWG Chairman** | Satoshi (Sam) Oyama (J); E-mail: [s-oyama@arib.or.jp](mailto:s-oyama@arib.or.jp) |
| **Editor** | Tom Schaffnit (U.S.A.); E-mail: [tom.schaffnit@dot.gov](mailto:tom.schaffnit@dot.gov) |
| **Focus for scope and work** | The Recommendation is being updated to include operational radiocommunication objectives and requirements for advanced intelligent transport systems (ITS). Amendments to the title and structure of the Recommendation have been made as well to align with the mandatory format for new and revised Recommendations as per [Resolution ITU-R 1-7](http://www.itu.int/pub/R-RES-R.1). |
| **Related Documents** |  |
| **Milestones** | **18th meeting (May 2017)**   1. Develop and adopt work plan 2. Carry forward the working document toward a Revision of Recommendation ITU-R M.1890-0   **19th meeting (November 2017)**   1. Continue developing working document toward a Revision of Recommendation ITU-R M.1890-0 2. Liaise as needed with concerned and interested organizations on development of the Revision of Recommendation ITU-R M.1890-0 3. Update work plan as needed   **20th meeting (May 2018)**   1. Development of the Revision of Recommendation ITU-R M.1890-0 2. Finalize Revision of Recommendation and submit to SG 5 meeting for approval |

Attachment 2 to Annex 3

Workplan for the development of a new Report ITU-R M.[ITS USAGE]

The usage of intelligent transport systems in ITU-R Member States

|  |  |
| --- | --- |
| **Title** | The usage of intelligent transport systems in ITU-R member states |
| **Identifier** | Report ITU-R M.[ITS USAGE] |
| **Document type** | Report |
| **WP 5A Lead Group** | WG 5 New Technologies |
| **SWG Chairman** | Satoshi (Sam) Oyama (J); E-mail: [s-oyama@arib.or.jp](mailto:s-oyama@arib.or.jp) |
| **Editor** | Ms. Bettina Erdem (D); 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)**   1. Develop and adopt work plan 2. Carry forward the framework of working document toward a PDN Report   **14th meeting (November 2014)**   1. Develop working document toward a PDN Report 2. Liaise as needed with concerned and interested organizations on development of the PDN Report 3. Update work plan as needed.   **15th meeting (July 2015)**   1. Continue developing working document toward a PDN Report 2. Liaise as needed with concerned and interested organizations on development of the PDN Report 3. Update work plan as needed   **16th meeting (May 2016)**   1. Continue developing working document toward a PDN Report 2. Liaise as needed with concerned and interested organizations on development of the PDN Report 3. Update work plan as needed   **17th meeting (November 2016)**   1. Continue developing working document toward a PDN Report 2. Liaise as needed with concerned and interested organizations on development of the PDN Report 3. Update work plan as needed   **18th meeting (May 2017)**   1. Continue developing working document toward a PDN Report 2. Liaise as needed with concerned and interested organizations on development of the PDN Report 3. Update work plan as needed   **19th meeting (November 2017)**  **20th meeting (May 2018)**   1. Continue developing working document toward a PDN Report 2. Liaise as needed with concerned and interested organizations on development of the PDN Report 3. Update work plan as needed   **21th meeting (November 2018)**   1. Development of the DN Report 2. Finalize Report and submit to SG 5 meeting for approval (Relevant parts thereof maybe referenced in the CPM text) |

ATTACHMENT 3 TO ANnEX 3

Workplan for the development of preliminary draft revision of Recommendation ITU-R M.2084-0

Radio interface standards of vehicle-to-vehicle and vehicle-to-infrastructure communications for Intelligent Transport System applications

| Title | Radio interface standards of vehicle-to-vehicle and vehicle-to-infrastructure communications for Intelligent Transport System applications |
| --- | --- |
| Identifier | Recommendation ITU-R M.2084 |
| Document type | Recommendation |
| WP 5A Lead Group | WG 5 New Technologies |
| SWG Chairman | Satoshi (Sam) Oyama (J); E-mail: [s-oyama@arib.or.jp](mailto:s-oyama@arib.or.jp) |
| Editor | Mr Andy Phang (SNG); E-mail: Andy\_PHANG@imda.gov.sg |
| Focus for scope and work | This Recommendation identifies specific radio interface standards of vehicle-to-vehicle and vehicle-to-infrastructure communications for Intelligent Transport System applications. The technical and operational characteristics described in this Recommendation are based on current Intelligent Transport Systems (ITS) applications in the mobile service. |
| Related Documents |  |
| **Milestones** | **Meeting No.18 (22 May – 1 June 2017, Geneva, Switzerland)**  WP 5A, based on input contributions, develop and adopt a work plan, including:  – update of the Preliminary Draft Revision of Recommendation ITU-R M.2084-0;  – liaise with external organizations requesting for updated information on technical standards characteristics |
| **Meeting No.19 (6 - 16 November 2017, Geneva, Switzerland)**  WP 5A, based on input contributions,  – update work on Preliminary Draft Revision of Recommendation ITU-R M.2084-0 based on updated technical standards information received;  – liaise with external organizations requesting for updated information on technical standards |
| **Meeting No.20 ( [May 2018], Geneva, Switzerland)**  WP 5A, based on input contributions,  – finalise updating work on draft revision of Recommendation ITU-R M.2084-0 based on updated technical standards information received;  – submit to SG 5 meeting for adoption |

Attachment 4 TO ANnEX 3

Workplan for the development of revision of Land Mobile Handbook –   
Vol. 4 Intelligent Transport Systems

| Title | Land Mobile Handbook – Vol. 4 Intelligent Transport Systems |
| --- | --- |
| Identifier | Land Mobile Handbook – Vol. 4 |
| Document type | Handbook |
| WP 5A Lead Group | WG 5 New Technologies |
| SWG Chairman | Satoshi (Sam) Oyama (J); E-mail: [s-oyama@arib.or.jp](mailto:s-oyama@arib.or.jp) |
| Editor | Mr HyunSeo Oh (KOR); E-mail: |
| Focus for scope and work | The Handbook covers land mobile applications including, vehicular communications, in-building communication, out-of-building communication, as well as others such as intelligent transport systems (ITS) applications. Systems covered encompass cellular-based systems, messaging systems, dispatch systems, fixed wireless access, as well as ITS. |
| Related Documents |  |
| **Milestones** | **Meeting No.18 (22 May – 1 June 2017, Geneva, Switzerland)**  – propose the outline for preliminary draft revision of Land Mobile Handbook – Vol. 4 (ITS), 2006 |
| **Meeting No.19 (6 - 16 November 2017, Geneva, Switzerland)**  – develop the introduction and ITS service part for preliminary draft revision of ITS Handbook  – develop the template for annex part for revision of ITS Handbook for circulation to ITU Members |
| **Meeting No.20 ( [May 2018], Geneva, Switzerland)**  – develop ITS system, radio communication and frequency assignment, standardization part for preliminary draft revision of ITS Handbook  – develop an annex part for revision of ITS Handbook based on ITU Members contributions |
| **Meeting No.21 ([November 2018], Geneva, Switzerland)**  – develop overall contents of the revision of ITS Handbook  – develop and annex part of revision of ITS Handbook based on ITU Members contribution |
| **Meeting No.22 ([May 2019], Geneva, Switzerland)**  – complete the preliminary draft revision of ITS Handbook |

Attachment 5 TO ANnEX 3

Workplan for the development of the preliminary draft new   
Report ITU-R M.[NON\_IMT.MTC\_USAGE]

Technical and operational aspects of Internet of Things and Machine-to-Machine applications by systems in the Mobile Service (excluding IMT)

|  |  |
| --- | --- |
| **Title** | Technical and operational aspects of Internet of Things and Machine-to-Machine applications by systems in the Mobile Service (excluding IMT) |
| **Identifier** | Report ITU-R M.[NON\_IMT.MTC\_USAGE] |
| **Document type** | Report |
| **WP 5A5 Lead Group** | WG 5A5 New Technology |
| **WG 5A5 Chair** | Hitoshi Yoshino; **E-mail:** [hitoshi.yoshino@g.softbank.co.jp](mailto:hitoshi.yoshino@g.softbank.co.jp) |
| **Editor** | Jean-Philippe Kermoal; **E-mail:** [Jean-Philippe.Kermoal@de.bosch.com](mailto:Jean-Philippe.Kermoal@de.bosch.com) |
| **Focus for scope and work** | This report will provide information on the technical and operational aspects of Machine Type Communications (MTC) including Internet of Things (IoT)/Machine to Machine (M2M) applications by systems in the Mobile Service (excluding IMT). This report will also provide information on the existing and planned/future usage of Mobile Service frequency bands by IoT/M2M applications. |
| **Related documents** | TBD |
| **Milestones** | **Meeting No. 18 (22 May – 1 June 2017, Geneva, Switzerland)**  1 Initiate development of working document towards preliminary draft new Report ITU-R M.[ NON\_IMT.MTC\_USAGE]  2 Review and revise the work plan as appropriate  3 Liaise as appropriate to WP 5D and WP 1B  **Meeting No. 19 (6-16 November 2017, Geneva, Switzerland)**  1 Further develop working document towards PDN Report ITU-R M.[NON\_IMT.MTC\_USAGE]  2 Review and revise the work plan as appropriate  3 Liaise as appropriate to WP 1B  4 Liaise the working document to WP 5D with respect to agenda item 9.1, issue 9.1.8. |
|  | **Meeting No. 20 ([May 2018], Geneva, Switzerland)**  1 Stabilize the working document towards PDN Report ITU-R M.[NON\_IMT.MTC\_USAGE]  2 Elevate to PDN Report ITU-R M.[NON\_IMT.MTC\_USAGE]  3 Liaise as appropriate to WP 1B  4 Liaise the PDN Report to WP 5D with respect to agenda item 9.1, Issue 9.1.8.  **Meeting No. 21 ([November 2018], Geneva, Switzerland)**  1 Finalise PDN Report ITU-R M.[NON\_IMT.MTC\_USAGE].  2 Elevate to DN Report ITU-R M.[NON\_IMT.MTC\_USAGE] and send to SG 5 for approval.  3 Liaise as appropriate to WP 1B and WP 5D. |