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| **Radiocommunication Study Groups** |  |
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|  | **Document 5A/469-E** |
| **15 June 2017** |
| **English only** |
| Chairman, Working Party 5A |
| report on the EIGHTeenth meeting of working party 5a |
| (Geneva, 22 MAY – 1 JUNE 2017) |

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[1](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N01!MSW-E) Working Party 5A Management

[2](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N02!MSW-E) Consolidation of texts approved by Working Party 5A

[3](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N03!MSW-E) Consolidation of reports from the Working Groups of Working Party 5A
(Source: Docs. 5A/TEMP/155, 195R1, 198, 199, 203, 204)

[4](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N04!MSW-E) Working document towards preliminary draft CPM text for WRC-19 agenda item 1.1
(Source: Annex 4 to Doc. 5A/298)

[5](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N05!MSW-E) Work plan for WRC-19 agenda item 1.1 (Source: Doc. 5A/TEMP/187)

[6](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N06!MSW-E) Working document towards draft CPM text for WRC-19 agenda item 1.11
(Source: Doc. 5A/TEMP/144R1)

[7](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N07!MSW-E) Workplan for preparation for WRC-19 agenda item 1.11
(Source: Doc. 5A/TEMP/184)

[8](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N08!MSW-E) Elements of draft CPM text for WRC-19 agenda item 1.12
(Source: Doc. 5A/TEMP/177)

[9](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N09!MSW-E) Draft work plan for WRC-19 agenda item 1.12 (Source: Doc. 5A/TEMP/178R1)

[10](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N10!MSW-E) Working document towards preliminary draft CPM text for WRC-19 agenda item 1.16 (Source: Doc. 5A/TEMP/165R1)

[11](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N11!MSW-E) Draft workplan for WRC-19 agenda item 1.16 (Source: Doc. 5A/TEMP/172R1)

[12](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N12!MSW-E) Working document towards preliminary draft CPM text for WRC-19 agenda item 9.1 issue 9.1.5 (Source: Doc. 5A/TEMP/158)

[13](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N13!MSW-E) Draft workplan for WRC-19 agenda item 9.1 issue 9.1.5
(Source: Annex 13 to Doc. 5A/298)

[14](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N14!MSW-E) Working document toward preliminary draft new Report ITU-R M.[AMATEUR\_50\_MHz] - Spectrum needs for the amateur service in the frequency band 50-54 MHz in Region 1 and sharing with mobile fixed, radiolocation, and broadcasting services (Source: Doc. 5A/TEMP/189)

[15](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N15!MSW-E) Working document towards a preliminary draft new Report ITU-R M.[CDLMR] – Conventional digital land mobile radio systems (Source: Doc. 5A/TEMP/153R1)

[16](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N16!MSW-E) Preliminary draft new Report ITU-R M.[RSTT.DESCRIPTION] – Description of railway radiocommunication systems between train and trackside
(Source: Doc. 5A/TEMP/191R2)

[17](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N17!MSW-E) Working document towards a preliminary draft new Report ITU-R M.[RSTT.USAGE ] – Current and future usage of railway radiocommunication systems between train and trackside (Source: Doc. 5A/TEMP/190R1)

[18](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N18!MSW-E) Working document towards a preliminary draft new Recommendation ITU-R M.[RSTT] – Harmonization of frequencies and related frequency arrangements, for railway radiocommunication systems between train and trackside
(Source: Doc. 5A/TEMP/1R1)

[19](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N19!MSW-E) Preliminary draft revision of Recommendation ITU-R M.2003-1 – Multiple Gigabit Wireless Systems in frequencies around 60 GHz (Source: Doc. 5A/TEMP/151R1)

[20](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N20!MSW-E) Preliminary draft revision of Report ITU-R M.2227-1 – Multiple Gigabit Wireless Systems in frequencies around 60 GHz (Source: Doc. 5A/TEMP/152R1)

[21](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N21!MSW-E) Working document towards a 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
(Source: Doc. 5A/TEMP/160R2)

[22](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N22!MSW-E) Preliminary draft revision of Recommendation ITU-R M.2015 – Frequency arrangements for public protection and disaster relief Radiocommunication systems in accordance with Resolution 646 (Rev.WRC-15) (Source: Doc. 5A/TEMP/154R1)

[23](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N23!MSW-E) Preliminary draft new Report ITU-R M.[PPDR SPECTRUM] – Spectrum needs for Public Protection and Disaster Relief (Source: Doc. 5A/TEMP/139R2)

[24](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N24!MSW-E) Preliminary draft revision of Report ITU-R M.2377-0 – Radiocommunication objectives and requirements for Public Protection and Disaster Relief
(Source: Doc. 5A/TEMP/161R1)

[25](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N25!MSW-E) Working document towards a preliminary draft new Report ITU-R M.[RLAN MITIGATION] – Study of proposed additional mitigation techniques to facilitate sharing between RLAN systems and incumbent services
(Source: Doc. 5A/TEMP/169)

[26](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N26!MSW-E) Compilation of technical information on possible candidate techniques that could be used by RLAN to facilitate sharing (Source: Doc. 5A/TEMP/164)

[27](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N27!MSW-E) Working document towards a preliminary draft new Report ITU-R M.[RLAN REQ-PAR] – Technical characteristics and operational requirements of WAS/RLAN in the 5 GHz frequency range (Source: Doc. 5A/TEMP/170)

[28](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N28!MSW-E) Working document towards a preliminary draft new Report ITU-R M.[AGGREGATE RLAN MEASUREMENTS] – Use of aggregate RLAN measurements from airborne and terrestrial platforms to support studies under WRC-19 agenda item 1.16 (Source: Doc. 5A/TEMP/168)

[29](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N29!MSW-E) Working document towards a preliminary draft new Report ITU-R M.[RLAN SHARING] – Sharing and compatibility studies of WAS/RLAN in the 5 GHz frequency range (Source: Doc. 5A/TEMP/171)

[30](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N30!MSW-E) Working document towards a preliminary draft new Report ITU-R M.[90 GHZ.RSTT.COEXIST] – Coexistence between railway radiocommunication system between train and trackside operating in the frequency bands 92-94 GHz, 94.1-100 GHz and 102 109.5 GHz, and active and passive services
(Source: Doc. 5A/TEMP/193R1)

[31](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N31!MSW-E) Preliminary draft new Report ITU-R M.[300GHz\_MS\_CHAR] – Technical and operational characteristics of the land mobile service applications operating in the frequency range 275-450 GHz (Source: Doc. 5A/TEMP/156R1)

[32](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N32!MSW-E) Working document towards a preliminary draft new Report ITU-R M.[ITS USAGE] – Intelligent transport systems usage in ITU Member States
(Source: Doc. 5A/TEMP/180R1)

[33](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N33!MSW-E) 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 (Source: Doc. 5A/TEMP/140R2)

[34](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N34!MSW-E) Working document towards a preliminary draft new Recommendation ITU-R M.[ITS\_FRQ] – Harmonization of frequency arrangements for intelligent transport systems in the mobile service (Source: Doc. 5A/TEMP/179)

[35](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N35!MSW-E) Working document towards a preliminary draft revision of Recommendation ITU-R M.1890-0 – Operational radiocommunication objectives and requirements for advanced intelligent transport systems (Source: Doc. 5A/TEMP/181)

[36](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N36!MSW-E) Working document towards a preliminary draft new Report ITU-R M.[IOT/M2M\_USAGE] - Technical and operational aspects of Internet of Things and Machine-to-Machine applications by systems in the Mobile Service (excluding IMT) (Source: Doc. 5A/TEMP/142R2)

[37](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N37!MSW-E) Proposed outline for revision of land mobile handbook – Vol. 4 – Intelligent transport systems (Source: Doc. 5A/TEMP/182R1)

[38](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N38!MSW-E) List of output documents

**Annexes from previous WP 5A Chairman’s Reports that are being carried forward:**

[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): Working document towards a preliminary draft new [Recommendation][or Report] ITU-R M.[AMATEUR-WSJT] – Use of structured data, error correction, and encoding/decoding techniques to improve communication reliability in the amateur services.

[Annex 28](https://www.itu.int/dms_pub/itu-r/md/15/wp5a/c/R15-WP5A-C-0298%21N28%21MSW-E.docx) to [Doc. 5A/298](https://www.itu.int/md/R15-WP5A-C-0298/en): Working document towards a preliminary draft new Report ITU-R M.[GEO.SHARE] – Sharing schemes in the land mobile service on the basis of geographical use.

**Management documents referred to in the Report:**

List of input documents: [Doc. 5A/464](http://www.itu.int/md/R15-WP5A-C-0464/en)

Final list of participants: [Doc. 5A/468](http://www.itu.int/md/R15-WP5A-C-0468)

# 1 Introduction

Working Party 5A (WP 5A) held its eighteenth (18th) meeting from 22 May – 1 June 2017 in Geneva, chaired by José Costa (Canada). The meeting participants (see list in [Doc. 5A/468](http://www.itu.int/md/R15-WP5A-C-0468)) included 278 participants from 47 countries representing 47 administrations, 7 recognized operating agencies, 11 scientific or industrial organizations, 1 United Nations, its specialized agencies and the International Atomic Energy Agency, 4 regional and other international organizations, 1 regional telecommunication organizations, 2 intergovernmental organizations operating satellite systems, and the BR. WP 5A held three plenary sessions during the meeting period (on 22 and 26 May and 1 June 2017).

The meeting dealt with 181 input documents (178 listed in [Doc. 5A/464](http://www.itu.int/md/R15-WP5A-C-0464/en) plus 3 liaison rapporteur documents that arrived during the meeting, Docs. 5A/465 to 467) and upon their consideration the meeting prepared 67 output temporary documents (see list in [Annex 38](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N38!MSW-E) to [Doc. 5A/469](http://www.itu.int/md/R15-WP5A-C-0469/en)).

[Annex 1](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N01!MSW-E) contains the management aspects of WP 5A, including a summary of the status of the texts that are the responsibility of WP 5A and the use of electronic facilities.

The Chairman’s Report of the seventeenth meeting of WP 5A ([Doc. 5A/298](http://www.itu.int/md/R15-WP5A-C-0298/en)) was adopted, including the objectives for the 18th meeting as presented in Section 4 of [Annex 1](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N01!MSW-E) to [Doc. 5A/298](http://www.itu.int/md/R15-WP5A-C-0298/en).

The structure of WP 5A for this meeting was also adopted as presented in Section 2.2 of Annex 1 in [Doc. 5A/298](http://www.itu.int/md/R15-WP5A-C-0298/en), which is reproduced in [Annex 1](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N01!MSW-E) of [Doc. 5A/469](http://www.itu.int/md/R15-WP5A-C-0469/en).

The BR presented [Doc. 5A/341](http://www.itu.int/md/R15-WP5A-C-0341/en) with further information on the preparation of texts for the draft CPM Report and the chairman of WP 5A presented [Doc. 5A/366](http://www.itu.int/md/R15-WP5A-C-0366/en) with the results of the meeting of Study Group 5 of interest to the members of WP 5A. At the opening plenary the documents that were of general nature or would be of interests to more than one working group of WP 5A were presented, namely: [Doc. 5A/334](http://www.itu.int/md/R15-WP5A-C-0334/en), [Doc. 5A/342](http://www.itu.int/md/R15-WP5A-C-0342/en), and [Doc. 5A/352](http://www.itu.int/md/R15-WP5A-C-0352/en). [Doc. 5A/334](http://www.itu.int/md/R15-WP5A-C-0334/en) from WMO was assigned to the working groups dealing with WRC-19 agenda items and [Doc. 5A/342](http://www.itu.int/md/R15-WP5A-C-0342/en), and [Doc. 5A/352](http://www.itu.int/md/R15-WP5A-C-0352/en) were noted for information.

The Chairman asked the meeting participants to review the list of contacts that appears in Section 4 of Annex 1 in [Doc. 5A/298](http://www.itu.int/md/R15-WP5A-C-0298/en) and inform him of any necessary changes (the final list appears in Section 4 of the updated [Annex 1](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N01!MSW-E) ([Doc. 5A/469](http://www.itu.int/md/R15-WP5A-C-0469/en)) and updates between meetings are maintained by the BR and the Chairman of WP 5A). The Chairman indicated this list showing the contacts by topics is used for all liaison statements to external organizations on those topics and the e-mail distribution lists are generated automatically from it.

The work program for the WP 5A meeting was adopted as presented in [Doc. 5A/ADM/10(Rev.1)](http://www.itu.int/md/R15-WP5A-ADM-0010/en), with minor updates as shown in Table 1 below. The initial schedule was adopted as per [Doc. 5A/ADM/11](http://www.itu.int/md/R15-WP5A-ADM-0011/en) and it was updated daily in the WP 5A share folder during the meeting, with the final version included in [Annex 1](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N01!MSW-E).

At the opening Plenary the Chairman drew the attention of the meeting to the WP 5A texts that are listed in Section 1 of Annex 1 in [Doc. 5A/298](http://www.itu.int/md/R15-WP5A-C-0298/en), the [Guide to the use of ITU-R texts related to the land mobile service](http://www.itu.int/oth/R0A06000001/en), and the [Guide to the use of ITU-R texts relating to the amateur and amateur-satellite services](http://www.itu.int/oth/R0A06000067) asking each Working Group to review the texts assigned to them. Canada presented [Doc. 5A/410](http://www.itu.int/md/R15-WP5A-C-0410/en) and it was agreed to use it as the basis to update the Guide to the use of ITU-R texts related to the land mobile service. The Chairman pointed out the guidelines for the preparation of WP 5A texts in Section 2.3 of Annex 1 in [Doc. 5A/298](http://www.itu.int/md/R15-WP5A-C-0298/en) and the outline of the preparatory work for WRC-15 in Section 3 of Annex 1 in [Doc. 5A/298](http://www.itu.int/md/R15-WP5A-C-0298/en) (reproduced in [Annex 1](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N01!MSW-E) of [Doc. 5A/469](http://www.itu.int/md/R15-WP5A-C-0469/en), with the addition of a reference to [Doc. 5A/341](http://www.itu.int/md/R15-WP5A-C-0341/en) providing further guidance on the preparation of draft CPM text).

The Liaison Rapporteurs presented their reports during the 3 Plenary sessions of WP 5A, including on WWRF by Hitoshi Yoshino ([Doc. 5A/302](http://www.itu.int/md/R15-WP5A-C-0302)), on certain countries in Region 2 by Jon Siverling, ([Doc. 5A/377R1](http://www.itu.int/md/R15-WP5A-C-0377/en)) on [Disaster Relief](http://www.itu.int/ITU-R/index.asp?category=information&link=emergency&lang=en) by Amy Sanders ([Doc. 5A/411](http://www.itu.int/md/R15-WP5A-C-0411)), on certain countries in Region 1 by Gabrielle Owen ([Doc. 5A/466](http://www.itu.int/md/R15-WP5A-C-0466)), and on certain countries in Region 3 by Hitoshi Yoshino ([Doc. 5A/467](http://www.itu.int/md/R15-WP5A-C-0467)).

# 2 Objectives and work programme for the meeting

The objectives for the meeting were adopted as set forth in the Chairman’s Report of the seventeenth meeting of WP 5A (Section 4 of [Doc. 5A/298](http://www.itu.int/md/R15-WP5A-C-0298/en)) noting that need to consider also the proposals in the input contributions for the seventeenth meeting, in particular those related to the WRC-19 agenda items under the responsibility of WP 5A. With regards to the update of documents that are the joint responsibility of WPs 5A and 5C, the chairmen of WP 5A and WP 5C decided not to hold a joint session as there were no new issues to consider (see [section 3.10](#s310)). Future actions regarding future updates of documents that have a joint responsibility will be considered on a case-by-case basis depending on the input contributions and the nature of the proposed update.

The work was carried out within five Working Groups. The responsibilities for input contributions were assigned as per [Table 1](#t1), showing also the organization of the work for the meeting. (The documents in the rows “Reports” and “General” were assigned to all the Working Groups).

TABLE 1

Assignment of input contributions and organization of the work for the meeting

The carried forward documents from previous meetings are highlighted in green (20 documents).
New documents: 298 to 467 (169 contributions). Document 451 was withdrawn.

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| **Working Party 5A (Chairman:** José Costa**, Canada)** |
| **Reports** | [298](http://www.itu.int/md/R15-WP5A-C-0298/en) (Chairman, WP 5A); [302](http://www.itu.int/md/R15-WP5A-C-0302) (WWRF L.R.); [366](http://www.itu.int/md/R15-WP5A-C-0366/en) (Chairman, WP 5A); [377](http://www.itu.int/md/R15-WP5A-C-0377/en) (L.R.#2);[411](http://www.itu.int/md/R15-WP5A-C-0411) (Disaster Relief L.R.); [464](http://www.itu.int/md/R15-WP5A-C-0464) (List of contributions); [465](http://www.itu.int/md/R15-WP5A-C-0465) (WWRF L.R.); [466](http://www.itu.int/md/R15-WP5A-C-0466) (L.R. #1); [467](http://www.itu.int/md/R15-WP5A-C-0467) (L.R. #3) |
| **General** | [334](http://www.itu.int/md/R15-WP5A-C-0334) (WMO); [341](http://www.itu.int/md/R15-WP5A-C-0341) (Director, BR); [342](http://www.itu.int/md/R15-WP5A-C-0342) (ITU-T SG 20); [410](http://www.itu.int/md/R15-WP5A-C-0410) (Canada); [452](http://www.itu.int/md/R15-WP5A-C-0452) (Director, BR) |
| **Working Group 1: Amateur Services (Chairman:** Dale Hughes**, Australia)** |
| **AI 1.1 (**[Res. 658](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0001PDFE.pdf)**)** | [289](http://www.itu.int/md/R15-WP5A-C-0289) (WP 5C); [298](http://www.itu.int/md/R15-WP5A-C-0298/en) [Annex 4](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N04!MSW-E), [Annex 5](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N05!MSW-E), & [Annex 14](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N14!MSW-E) (WP 5A); [394](http://www.itu.int/md/R15-WP5A-C-0394) (WMO); [412](http://www.itu.int/md/R15-WP5A-C-0412) (IARU); [413](http://www.itu.int/md/R15-WP5A-C-0413) (IARU); [414](http://www.itu.int/md/R15-WP5A-C-0414) (IARU); [417](http://www.itu.int/md/R15-WP5A-C-0417) (France); [440](http://www.itu.int/md/R15-WP5A-C-0440) (Switzerland, France, Hungary, Netherlands, Norway) |
| **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 services protection** | *Sharing:* [353](http://www.itu.int/md/R15-WP5A-C-0353) (WP 7C); [456](http://www.itu.int/md/R15-WP5A-C-0456) (WP 4A);[463](http://www.itu.int/md/R15-WP5A-C-0463) (WP 4A) *RF noise:* [311](http://www.itu.int/md/R15-WP5A-C-0311) (WP 1A)*Fast access to subscriber terminals (G.fast):* [310](http://www.itu.int/md/R15-WP5A-C-0310) (WP 1A);[325](http://www.itu.int/md/R15-WP5A-C-0325) (ITU-T SG 15)*Wireless power transmission:* [314](http://www.itu.int/md/R15-WP5A-C-0314) (WP 1A); [315](http://www.itu.int/md/R15-WP5A-C-0315) (WP 1A) |
| **Working Group 2: Systems and standards (Chairman:** Lang Baozhen**, China)** |
| **AI 1.11 (Railways** [Res. 236](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0012PDFE.pdf)**)** | [298](http://www.itu.int/md/R15-WP5A-C-0298/en) [Annex 6](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0289!N06!MSW-E), [Annex 7](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0289!N07!MSW-E), & [Annex 16](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0289!N16!MSW-E) (WP 5A); [323R2](http://www.itu.int/md/R15-WP5A-C-0323) (BR); [340](http://www.itu.int/md/R15-WP5A-C-0340) (WP 3K); [354](http://www.itu.int/md/R15-WP5A-C-0354) (WP 7C); [358R1](http://www.itu.int/md/R15-WP5A-C-0358) (CG-5A-1); [364](http://www.itu.int/md/R15-WP5A-C-0364) (APT); [376](http://www.itu.int/md/R15-WP5A-C-0376) (UIC); [383](http://www.itu.int/md/R15-WP5A-C-0383) (Japan); [384](http://www.itu.int/md/R15-WP5A-C-0384) (Japan); [385](http://www.itu.int/md/R15-WP5A-C-0385) (Japan); [386](http://www.itu.int/md/R15-WP5A-C-0386) (Japan); [396](http://www.itu.int/md/R15-WP5A-C-0396) (Russian Federation); [405](http://www.itu.int/md/R15-WP5A-C-0405) (Australia) [406](http://www.itu.int/md/R15-WP5A-C-0406) (Canada); [415](http://www.itu.int/md/R15-WP5A-C-0415) (Viet Nam); [424](http://www.itu.int/md/R15-WP5A-C-0424) (Telstra); [425](http://www.itu.int/md/R15-WP5A-C-0425) (France); [429](http://www.itu.int/md/R15-WP5A-C-0429) (Korea); [430](http://www.itu.int/md/R15-WP5A-C-0430) (China); [432](http://www.itu.int/md/R15-WP5A-C-0432) (China); [437](http://www.itu.int/md/R15-WP5A-C-0437) (Motorola Solutions); [439](http://www.itu.int/md/R15-WP5A-C-0439) (China); [441](http://www.itu.int/md/R15-WP5A-C-0441) (Germany, France, Switzerland, UK, Sweden, Hungary); [448](http://www.itu.int/md/R15-WP5A-C-0448) (CEPT CPG PTD) |
| **Broadband Wireless Access** | [298](http://www.itu.int/md/R15-WP5A-C-0298/en) [Annex 19](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N19!MSW-E) & [Annex 20](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N20!MSW-E) (WP 5A); [306](http://www.itu.int/md/R15-WP5A-C-0306) (WP 5C); [324](http://www.itu.int/md/R15-WP5A-C-0324) (CCV & SCV); [328](http://www.itu.int/md/R15-WP5A-C-0328) (WP 5D); [333](http://www.itu.int/md/R15-WP5A-C-0333) (WP 5D); [360](http://www.itu.int/md/R15-WP5A-C-0360) (3GPP TSG RAN); [427](http://www.itu.int/md/R15-WP5A-C-0427) (Korea)*Infrastructure sharing:* [316](http://www.itu.int/md/R15-WP5A-C-0316) (WP 1B); [330](http://www.itu.int/md/R15-WP5A-C-0330) (WP 5D); [368](http://www.itu.int/md/R15-WP5A-C-0368) (WP 4C); [458](http://www.itu.int/md/R15-WP5A-C-0458) (WP 4A) *Global platform:* [326](http://www.itu.int/md/R15-WP5A-C-0326) (WP 5D); [343](http://www.itu.int/md/R15-WP5A-C-0343) (WP 6B) |
| **Land mobile systems** | [298](http://www.itu.int/md/R15-WP5A-C-0298/en) [Annex 15](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N15!MSW-E) (WP 5A); [304](http://www.itu.int/md/R15-WP5A-C-0304) (ETSI TC ERM); [403](http://www.itu.int/md/R15-WP5A-C-0403) (Mexico); [416](http://www.itu.int/md/R15-WP5A-C-0416) (Viet Nam)*Handbook:* |
| **MGWS** | [250](http://www.itu.int/md/R15-WP5A-C-0250/en) (Japan); [298](http://www.itu.int/md/R15-WP5A-C-0298/en) [Annex 17](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N17!MSW-E) & [Annex 18](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N18!MSW-E) (WP 5A); [374](http://www.itu.int/md/R15-WP5A-C-0374) (IEEE); [387](http://www.itu.int/md/R15-WP5A-C-0387) (Japan); [388](http://www.itu.int/md/R15-WP5A-C-0388) (Japan) |
| **Update of Rep. ITU-R M.2282** | [408](http://www.itu.int/md/R15-WP5A-C-0408) (Canada) |
| **RLAN characteristics** | *(support WG 4 on RLANs)* |
| **Working Group 3: PPDR (Chairman:** Amy Sanders**, USA)** |
| **Update Rec. ITU-R M.2015** | [Res. 646 (Rev.WRC-15)](http://www.itu.int/oth/R0A0600001A/en); [80](http://www.itu.int/md/R15-WP5A-C-0080) (Australia); [298](http://www.itu.int/md/R15-WP5A-C-0298/en) [Annex 21](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N21!MSW-E) (WP 5A); [365](http://www.itu.int/md/R15-WP5A-C-0365) (APT); [373](http://www.itu.int/md/R15-WP5A-C-0373) (USA); [390](http://www.itu.int/md/R15-WP5A-C-0390) (Japan); [426](http://www.itu.int/md/R15-WP5A-C-0426) (Korea); [434](http://www.itu.int/md/R15-WP5A-C-0434) (China)  |
| **PPDR Spectrum** | [298](http://www.itu.int/md/R15-WP5A-C-0298/en) [Annex 22](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N22!MSW-E) (WP 5A); [332](http://www.itu.int/md/R15-WP5A-C-0332) (WP 5D); [438](http://www.itu.int/md/R15-WP5A-C-0438) (Motorola Solutions) |
| **Update Rep. ITU-R M.2377** | [233](http://www.itu.int/md/R15-WP5A-C-0233) (Telstra); [423](http://www.itu.int/md/R15-WP5A-C-0423) (Telstra) |
| **Working Group 4: Interference and sharing (Chairman:** Michael Kraemer**, Germany)** |
| **Sharing studies (general)** | *Methods:* [312](http://www.itu.int/md/R15-WP5A-C-0312) (WP 1A); [346](http://www.itu.int/md/R15-WP5A-C-0346) (WP 7D); *Characteristics:* [322](http://www.itu.int/md/R15-WP5A-C-0322) (WP 5B)*Propagation:* [307](http://www.itu.int/md/R15-WP5A-C-0307) (SG 3); [349](http://www.itu.int/md/R15-WP5A-C-0349) (WP 7B)*Antennas:* [294](http://www.itu.int/md/R15-WP5A-C-0294) (WP 5C); [308](http://www.itu.int/md/R15-WP5A-C-0308) (WP 5C); [348](http://www.itu.int/md/R15-WP5A-C-0348) (WP 7B)*Wireless power transmission:* [136](http://www.itu.int/md/R15-WP5A-C-0136/en) (WP 1A); [296](http://www.itu.int/md/R15-WP5A-C-0296) (WP 5C); [339](http://www.itu.int/md/R15-WP5A-C-0339) (WP 6A) |
| **Dynamic Access – sharing** | *(support WG 5 on sharing & coexistence studies)* |
| **Sharing by zones** | [286](http://www.itu.int/md/R15-WP5A-C-0286) (WP 5C); [298](http://www.itu.int/md/R15-WP5A-C-0298/en) [Annex 28](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N28!MSW-E) (WP 5A); [300](http://www.itu.int/md/R15-WP5A-C-0300) (WP 5B); [309](http://www.itu.int/md/R15-WP5A-C-0309) (WP 5B); [459](http://www.itu.int/md/R15-WP5A-C-0459) (WP 4A)  |
| **Non-ionizing radiation** | [191](http://www.itu.int/md/R15-WP5A-C-0191/en) (ITU-D SG 2); [287](http://www.itu.int/md/R15-WP5A-C-0287) (WP 5C); [299](http://www.itu.int/md/R15-WP5A-C-0299) (WP 5B) |
| **AI 1.16 (**[Res. 239](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0017PDFE.pdf)**)** | [247](http://www.itu.int/md/R15-WP5A-C-0247) (UK); [252](http://www.itu.int/md/R15-WP5A-C-0252/en) (Japan); [290](http://www.itu.int/md/R15-WP5A-C-0290) (WP 5C); [295](http://www.itu.int/md/R15-WP5A-C-0295) (WP 5B); [298](http://www.itu.int/md/R15-WP5A-C-0298/en) [Annex 10](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N10!MSW-E), [Annex 11](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N11!MSW-E), [Annex 23](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N23!MSW-E), [Annex 24](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N24!MSW-E), [Annex 25](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N25!MSW-E), [Annex 26](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N26!MSW-E) and [Annex 27](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N27!MSW-E) (WP 5A); [337](http://www.itu.int/md/R15-WP5A-C-0337) (3K & 3M); [378](http://www.itu.int/md/R15-WP5A-C-0378) (USA); [380](http://www.itu.int/md/R15-WP5A-C-0380) (USA); [381](http://www.itu.int/md/R15-WP5A-C-0381) (USA); [391](http://www.itu.int/md/R15-WP5A-C-0391) (Japan); [393](http://www.itu.int/md/R15-WP5A-C-0393) (Japan); [395R1](http://www.itu.int/md/R15-WP5A-C-0395) (Globalstar); [397](http://www.itu.int/md/R15-WP5A-C-0397) (Russian Federation); [398](http://www.itu.int/md/R15-WP5A-C-0398) (Russian Federation); [399](http://www.itu.int/md/R15-WP5A-C-0399) (Russian Federation); [404](http://www.itu.int/md/R15-WP5A-C-0404) (Australia); [409](http://www.itu.int/md/R15-WP5A-C-0409) (Canada); [419](http://www.itu.int/md/R15-WP5A-C-0419) (France); [420](http://www.itu.int/md/R15-WP5A-C-0420) (France); [421](http://www.itu.int/md/R15-WP5A-C-0421) (IARU); [431](http://www.itu.int/md/R15-WP5A-C-0431) (China);[435](http://www.itu.int/md/R15-WP5A-C-0435) (France, Switzerland); [436](http://www.itu.int/md/R15-WP5A-C-0436) (France, Germany, Norway, Switzerland); [442](http://www.itu.int/md/R15-WP5A-C-0442) (Luxemburg); [443](http://www.itu.int/md/R15-WP5A-C-0443) (Luxemburg); [449](http://www.itu.int/md/R15-WP5A-C-0449) (Yahsat); [450](http://www.itu.int/md/R15-WP5A-C-0450) (Yahsat); [462](http://www.itu.int/md/R15-WP5A-C-0462) (WP 4A)  |
| **AI 9.1/Issue 9.1.5 (**[Res. 764](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0023PDFE.pdf)**)** | [298](http://www.itu.int/md/R15-WP5A-C-0298/en) [Annex 12](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N12!MSW-E) & [Annex 13](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N13!MSW-E) (WP 5A); [379R1](http://www.itu.int/md/R15-WP5A-C-0379) (USA); [400](http://www.itu.int/md/R15-WP5A-C-0400) (Russian Federation); [401](http://www.itu.int/md/R15-WP5A-C-0401) (Russian Federation); [418](http://www.itu.int/md/R15-WP5A-C-0418) (France) |
| **AI 1.2 (400 MHz** [Res. 765](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0002PDFE.pdf)**)** |  |
| **AI 1.3 (460 MHz** [Res. 766](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0003PDFE.pdf)**)** | [329](http://www.itu.int/md/R15-WP5A-C-0329) (WP 5D); [351](http://www.itu.int/md/R15-WP5A-C-0351) (WP 7B) |
| **AI 1.5 (FSS** [Res. 158](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0005PDFE.pdf)**)** | [288](http://www.itu.int/md/R15-WP5A-C-0288) (WP 5C); [457](http://www.itu.int/md/R15-WP5A-C-0457) (WP 4A) |
| **AI 1.6 (nonGSO FSS** [Res.159](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0006PDFE.pdf)**)** |  |
| **AI 1.7 (nonGSO FSS** [Res.659](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0007PDFE.pdf)**)** | [356](http://www.itu.int/md/R15-WP5A-C-0356) (WP 7B) |
| **(AI 1.8) (GMDSS** [Res. 359](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0008PDFE.pdf)**)** |  |
| /**1.9.1 (160 MHz** [Res. 362](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0009PDFE.pdf)**)** |  |
| /**1.9.2 (VDES/MMSS** [Res. 360](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0010PDFE.pdf)**)** | [293](http://www.itu.int/md/R15-WP5A-C-0293) (WP 5C); [402](http://www.itu.int/md/R15-WP5A-C-0402) (Russian Federation) |
| **AI 1.10 (GADSS** [Res. 426](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0011PDFE.pdf)**)** |  |
| **AI 1.13 (IMT** [Res. 238](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0014PDFE.pdf)**)** | [322](http://www.itu.int/md/R15-WP5A-C-0322) (WP 5B);[331](http://www.itu.int/md/R15-WP5A-C-0331) (WP 5D); [336](http://www.itu.int/md/R15-WP5A-C-0336) (WPs 3J, 3K, & 3M); [344](http://www.itu.int/md/R15-WP5A-C-0344) (Chairman, WP 6A); [352](http://www.itu.int/md/R15-WP5A-C-0352) (WP 7B); [357](http://www.itu.int/md/R15-WP5A-C-0357) (Chairmen, SG 3 and WPs 3J, 3K & 3M) |
| **AI 1.14 (HAPS** [Res. 160](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0015PDFE.pdf)**)** | [292](http://www.itu.int/md/R15-WP5A-C-0292) (WP 5C); [347](http://www.itu.int/md/R15-WP5A-C-0347) (WP 7B) |
| **EESS 45 MHz (Res. 656)** |  |
| **> 275 GHz**  | *(support WG 5 on sharing & coexistence studies)* |
| **/9.1.3 (nonGSO** [Res. 157](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0021PDFE.pdf)**)** | [461](http://www.itu.int/md/R15-WP5A-C-0461) (WP 4A)  |
| **/9.1.6 (WPT-EV** [Res. 958](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0024PDFE.pdf)**)** | [338](http://www.itu.int/md/R15-WP5A-C-0338) (WP 6A) |
| **/9.1.9 (50 GHz FSS** [Res. 162](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0025PDFE.pdf)**)** | [291](http://www.itu.int/md/R15-WP5A-C-0291) (WP 5C); [460](http://www.itu.int/md/R15-WP5A-C-0460) (WP 4A)  |
|  |  |
| **Working Group 5: New technologies (Chairman:** Hitoshi Yoshino**, Japan)** |
| **AI 1.12 (ITS** [Res. 237](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0013PDFE.pdf)**)** | [298](http://www.itu.int/md/R15-WP5A-C-0298/en) [Annex 8](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N08!MSW-E) & [Annex 9](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N09!MSW-E) (WP 5A); [382](http://www.itu.int/md/R15-WP5A-C-0382) (Thailand); [433](http://www.itu.int/md/R15-WP5A-C-0433) (China); [444](http://www.itu.int/md/R15-WP5A-C-0444) (Luxemburg); [455](http://www.itu.int/md/R15-WP5A-C-0455) (WP 4A); [447](http://www.itu.int/md/R15-WP5A-C-0447) (CEPT CPG PTD) |
| **ITS** | *ITS Usage:* [298](http://www.itu.int/md/R15-WP5A-C-0298/en) [Annex 30](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N30!MSW-E) (WP 5A); [362](http://www.itu.int/md/R15-WP5A-C-0362) (APT); [370](http://www.itu.int/md/R15-WP5A-C-0370) (USA); [392](http://www.itu.int/md/R15-WP5A-C-0392) (Japan, Singapore); [422](http://www.itu.int/md/R15-WP5A-C-0422) (Telstra); [446](http://www.itu.int/md/R15-WP5A-C-0446) (Germany)*ITS:* [371](http://www.itu.int/md/R15-WP5A-C-0371) (USA); [372](http://www.itu.int/md/R15-WP5A-C-0372) (USA); [407](http://www.itu.int/md/R15-WP5A-C-0407) (Canada)*V2X:* [303](http://www.itu.int/md/R15-WP5A-C-0303) (3GPP PCG); [359](http://www.itu.int/md/R15-WP5A-C-0359) (3GPP TSG RAN); [369](http://www.itu.int/md/R15-WP5A-C-0369) (Singapore)*76-81 GHz:* [319](http://www.itu.int/md/R15-WP5A-C-0319) (WP 5B)*Handbook:* [428](http://www.itu.int/md/R15-WP5A-C-0428) (Korea) |
| **AI 1.15 (> 275 GHz** [Res. 767](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0016PDFE.pdf)**)** | [285](http://www.itu.int/md/R15-WP5A-C-0285) (WP 5C); [298](http://www.itu.int/md/R15-WP5A-C-0298/en) [Annex 29](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0298!N29!MSW-E) (WP 5A); [313](http://www.itu.int/md/R15-WP5A-C-0313) (WP 1A); [320](http://www.itu.int/md/R15-WP5A-C-0320) (3GPP); [335](http://www.itu.int/md/R15-WP5A-C-0335) (WPs 3J, 3K, 3M); [345](http://www.itu.int/md/R15-WP5A-C-0345) (WP 7D); [355](http://www.itu.int/md/R15-WP5A-C-0355) (WP 7C); [375](http://www.itu.int/md/R15-WP5A-C-0375) (IEEE); [389](http://www.itu.int/md/R15-WP5A-C-0389) (Japan) |
| **CRS / Dynamic Access** | [301](http://www.itu.int/md/R15-WP5A-C-0301) (ITU-D SG 1); [317](http://www.itu.int/md/R15-WP5A-C-0317) (WP 1B); [318](http://www.itu.int/md/R15-WP5A-C-0318) (WP 1B); [327](http://www.itu.int/md/R15-WP5A-C-0327) (WP 5D); [367](http://www.itu.int/md/R15-WP5A-C-0367/en) (RAG); [453](http://www.itu.int/md/R15-WP5A-C-0453/en) (TDAG); [454](http://www.itu.int/md/R15-WP5A-C-0454/en) (ITU-D SG 1, ITU-R/ITU-T JG on WTDC Res.9) |
| **/9.1.8 (MTC** [Res. 958](http://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0024PDFE.pdf)**)** | [305](http://www.itu.int/md/R15-WP5A-C-0305) (ETSI TC ERM); [321](http://www.itu.int/md/R15-WP5A-C-0321) (3GPP); [350](http://www.itu.int/md/R15-WP5A-C-0350) (ITU-T JCA-IoT & SC & C); [361](http://www.itu.int/md/R15-WP5A-C-0361) (3GPP TSG RAN); [363](http://www.itu.int/md/R15-WP5A-C-0363) (APT); [445](http://www.itu.int/md/R15-WP5A-C-0445) (Germany) |

The Working Groups developed preliminary draft revised/new Recommendations, Reports, and liaison statements, and progress reports on the work. The detailed reports from the Working Groups are contained in [Annex 3](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N03!MSW-E). The texts proposed by these Working Groups in TEMP documents ([Annex 38](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N38!MSW-E)) were considered by WP 5A and are either annexed to this Report for further work to be considered at future meetings of WP 5A or were approved by WP 5A as liaison statements to other groups or for submission to Study Group 5 ([Annex 2](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N02!MSW-E)).

# **3 Executive summary of the results of the meeting**

## **3.1 Summary of documents approved by WP 5A**

The list of texts that are the responsibility of WP 5A has been updated in line with [Doc. 5/1(Rev.1)](http://www.itu.int/md/R15-SG05-C-0001), including the assignment of responsibilities to the Working Groups of WP 5A and identification of topics for the Recommendations and Reports ([Annex 1](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N01!MSW-E)).

Working Party 5A approved an update to the “[Guide to the use of ITU-R texts relating to the land mobile service](http://www.itu.int/oth/R0A06000001/en)” for posting on the WP 5A webpage: <http://www.itu.int/ITU-R/go/rwp5a>

The consolidation of all the texts approved by WP 5A, including the liaison statements, appears in [Annex 2](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N02!MSW-E) to [Doc. 5A/469](http://www.itu.int/md/R15-WP5A-C-0469/en).

## 3.2 Summary of proposals and documents submitted by Working Party 5A to Study Group 5

There were no proposals for Study Group 5 at the eighteenth meeting of Working Party 5A.

## 3.3 Amateur and amateur-satellite services

The work continues for WRC-19 agenda item 1.1; the preliminary draft CPM text and work plan for this agenda item appear in Annexes 4 and 5 of [Doc. 5A/469](http://www.itu.int/md/R15-WP5A-C-0469/en), respectively. Developed a working document towards a preliminary draft new Report ITU-R M.[AMATEUR\_50\_MHz] ([Annex 14](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N14!MSW-E)). A working document towards a preliminary draft new [Recommendation][or Report] ITU-R M.[AMATEUR-WSJT] ([Annex 15](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0114!N15!MSW-E) to [Doc. 5A/114](http://www.itu.int/md/R15-WP5A-C-0114/en)) is carried over for further work at the 19th meeting.

A proposal to update the “[Guide to the use of ITU-R texts relating to the amateur and amateur-satellite services](http://www.itu.int/oth/R0A06000067)” for posting on the WP 5A webpage could not be approved by WP 5A due to the objection of one administration in relation to the composite photo on the cover page of the document. The proposal was to add the following reference to the guide and the update will be considered again at the next meeting:

|  |  |  |
| --- | --- | --- |
| [Rep. ITU-R M.2335](http://www.itu.int/pub/R-REP-M/publications.aspx?lang=en&parent=R-REP-M.2335) | 2014 | Sharing and compatibility analysis of possible amateur service stations with fixed, land mobile, and radiolocation services in the frequency band 5 250 – 5 450 kHz and the aeronautical mobile service in an adjacent band. |

Four liaison statements were sent to other groups ([Annex 2](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N02!MSW-E)).

## 3.4 Systems and standards

Work on WRC-19 agenda item 1.11 is continuing; the preliminary draft CPM text and work plan for this agenda item appear in Annexes 6 and 7 of [Doc. 5A/469](http://www.itu.int/md/R15-WP5A-C-0469/en), respectively. Continued with the development of a draft new Report, ITU-R M.[CDLMR] on conventional digital land mobile radio systems ([Annex 15](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N15!MSW-E)) and further developed the working document towards a draft Report ITU-R M.[RSTT.USAGE] on current and future usage of railway radiocommunication systems between train and trackside (RSTT) ([Annex 17](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N17!MSW-E)) and created a preliminary draft new Report ITU-R M.[RSTT.DESCRIPTION] on description of railway radiocommunication systems between train and trackside ([Annex 16](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N16!MSW-E)). Initiated also a working document towards a draft new Recommendation ITU-R M.[RSTT] on harmonization of frequencies and related frequency arrangements, for railway radiocommunication systems between train and trackside ([Annex 18](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N18!MSW-E)).

Two working documents were developed and elevated to preliminary draft revisions of Recommendation ITU-R M.2003 ([Annex 19](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N19!MSW-E)) and Report ITU-R M.2227 ([Annex 20](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N20!MSW-E)) on “Multiple gigabit wireless systems in frequencies around 60 GHz”. Worked 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 ([Annex 21](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N21!MSW-E)). Five liaison statements were sent to other groups, including one to the CCV with preliminary definitions for consideration for inclusion in the online integrated database of ITU Terms and Definitions (see [section 3.9](#s39)).

## 3.5 Public protection and disaster relief

Work continued on the development of a working document which was elevated to preliminary draft revision of Recommendation ITU-R M.2015-1 ([Annex 22](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N22!MSW-E)) on frequency arrangements for PPDR radiocommunication systems. Another working document was also progressed and elevated to preliminary draft new Report ITU-R M.[PPDR SPECTRUM], “Spectrum needs for public protection and disaster relief (PPDR)” ([Annex 23](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N23!MSW-E)) which will lead to a consequential draft revision of Report ITU-R M.2377-0 “Radiocommunication objectives and requirements for Public Protection and Disaster Relief” ([Annex 24](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N24!MSW-E)). All three preliminary drafts are expected to be finalized at the November 2017 meeting of WP 5A for submission to Study Group 5. Three liaison statements were sent to regional groups to inform them of these developments and seeking further inputs.

## 3.6 Interference and sharing

The working documents for WRC-19 agenda item 1.16 were further developed (the preliminary draft CPM text and work plan for this agenda item appear in Annexes 8 and 9 of [Doc. 5A/469](http://www.itu.int/md/R15-WP5A-C-0469/en), respectively). Work also continued on issue 9.1.5 under WRC-19 agenda item 9.1 and the preliminary draft CPM text and work plan appear in Annexes 12 and 13 of [Doc. 5A/469](http://www.itu.int/md/R15-WP5A-C-0469/en), respectively.

Continued the development of 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 ([Annex 25](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N25!MSW-E)), as well as compilation document of candidate techniques ([Annex 26](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N26!MSW-E)). Three working documents towards preliminary draft new ITU-R Reports were continued to be developed, related to sharing studies in support of agenda item 1.16 (Annexes [27](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N27!MSW-E), [28](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N28!MSW-E), and [29](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N29!MSW-E)). A working documents towards a preliminary draft new ITU-R Report on sharing schemes in the land mobile service on the basis of geographical use was carried forward to the next meeting ([Annex 28](https://www.itu.int/dms_pub/itu-r/md/15/wp5a/c/R15-WP5A-C-0298%21N28%21MSW-E.docx) to [Doc. 5A/298](https://www.itu.int/md/R15-WP5A-C-0298/en)). Initiated a tentative working document towards a preliminary draft new Report ITU-R M.[90 GHZ.RSTT.COEXIST] “Coexistence between railway radiocommunication system between train and trackside operating in the frequency bands 92‑94 GHz, 94.1-100 GHz and 102 109.5 GHz, and active and passive services” ([Annex 30](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N30!MSW-E)) to carry the information submitted to this meeting over to the next meeting for further discussion on how to best handle the work on this topic.

Six liaison statements were sent to other groups ([Annex 2](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N02!MSW-E)) in relation to sharing studies for various WRC-19 agenda items. During the approval of one of these liaison statements, to WPs 3K and 3M (Docs. [3K/168](http://www.itu.int/md/R15-WP3K-C-0168) and [3M/213](http://www.itu.int/md/R15-WP3M-C-0213)), seeking further guidance on propagation models for compatibility studies regarding WRC-19 agenda item 1.16, it was pointed out that certain elements on sharing and coexistence conclusions in the current working document towards draft CPM text for WRC-19 agenda item 1.16 are still subject to further discussion (as indicated by square brackets and editor’s notes). In particular, views were expressed that the methodology used for reaching some of these conclusions needs further discussion and input contributions to the next meeting of WP 5A were encouraged in that regard. Furthermore, views were expressed that, depending on the discussion at the next meeting of WP 5A, it may be necessary to consult with WP 4A on this issue.

## 3.7 New technologies

Continued the work on WRC-19 agenda item 1.12 (ITS) and further developed the draft CPM text and draft work plan for this agenda item (Annexes 8 and 9 of [Doc. 5A/469](http://www.itu.int/md/R15-WP5A-C-0469/en), respectively).

Continued the development of a preliminary draft new Report ITU-R M.[300GHz\_MS\_CHAR] on technical and operational characteristics of the land mobile service in the frequency range 275-450 GHz ([Annex 31](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N31!MSW-E)).

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 ([Annex 32](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N32!MSW-E)) and initiated the development of 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 ([Annex 33](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N33!MSW-E)). Initiated also the development of a working document towards a preliminary draft new Recommendation ITU-R M.[ITS FRQ] on harmonization of frequency arrangements for Intelligent Transport Systems in the mobile service ([Annex 34](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N34!MSW-E)) and a working document towards a preliminary draft revision of Recommendation ITU‑R M.1890 on operational radiocommunication objectives and requirements for advanced intelligent transport systems ([Annex 35](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N35!MSW-E)). Initiated a draft outline towards a revision the Land Mobile Handbook, [Volume 4](http://www.itu.int/pub/R-HDB-49/en) – Intelligent Transport Systems (see section 3.8).

Initiated the development of the working document towards preliminary draft new Report ITU-R M.[IoT/M2M\_USAGE] on technical and operational aspects of Internet of Things and Machine-to-Machine applications by systems in the Mobile Service (excluding IMT) ([Annex 36](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N36!MSW-E)).

Three liaison statements were sent to other groups ([Annex 2](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N02!MSW-E)).

## 3.8 Land Mobile Handbook

An outline was initiated towards a revision of Land Mobile Handbook, [Volume 4](http://www.itu.int/pub/R-HDB-49/en) – Intelligent Transport Systems, which essentially will be a complete re-write due to the advances in technology and applications ([Annex 37](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N37!MSW-E)).

## 3.9 Vocabulary

WP 5A sent a liaison statement to the CCV with preliminary definitions for consideration for inclusion in the online integrated database of ITU Terms and Definitions ([Doc. CCV/34](https://www.itu.int/md/R15-CCV-C-0034/en)).

**3.10 Joint responsibilities of WP 5A with other working parties**

WP 5A shares responsibilities with other working parties for the maintenance of certain Recommendations and Reports, see [Doc. 5/1(Rev.1)](http://www.itu.int/md/R15-SG05-C-0001) and [Annex 1](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N01!MSW-E) to [Doc. 5A/469](http://www.itu.int/md/R15-WP5A-C-0469). The Chairmen of WP 5A and WP 5C decided not to hold a joint session as there were no new issues to consider. WP 5C continued its work on the draft revision of Recommendation ITU-R F.1336-4, which provides reference radiation patterns of omnidirectional, sectoral and other low gain directional antennas for the fixed and mobile services for use in sharing studies in the frequency range from 400 MHz to about 70 GHz (cf. [Doc. 5C/292](https://www.itu.int/md/R15-WP5C-C-0292/en)). WP 5A was informed that WP 5B is developing a draft 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”
(cf. [Doc. 5B/305](https://www.itu.int/md/R15-WP5B-C-0305/en)).

# 4 Objectives for the nineteenth meeting of WP 5A

The principal objective for the 19th meeting of Working Party 5A is to continue the work that may need to be conducted by WP 5A in support of the preparations for WRC-19 and to continue the work on the study questions assigned to WP 5A.

Based on the reports from the Working Groups, the following overall objectives are tentatively set for the 19th meeting of WP 5A:

1) Amateur and amateur-satellite

* Continue work on WRC-19 agenda item 1.1 spectrum needs, sharing and compatibility studies.
* Continue work on developing CPM text for WRC-19 agenda item 1.1.
* 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 brought to the meeting.

2) Systems and standards

– Continue the studies of WRC-19 A.I. 1.11

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

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

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

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

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

3) Public protection and disaster relief

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

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

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

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

4) Interference and sharing

– Continue to the work under WRC-19 Agenda Item 1.16 and the related work on the RLAN mitigation techniques and sharing studies.

– Continue to the work on the draft CPM text for WRC-19 agenda item 9.1, Issue 9.1.5.

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

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

– Consider how to best handle the work on 90 GHz RSTT coexistence.

5) New technologies

* Continue the work on the development of the 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 with a view to sending it to SG 5 for approval.
* Continue the work on the development of the working document towards preliminary draft new Report ITU-R M.[IoT/M2M\_USAGE] on technical and operational aspects of Internet of Things and Machine-to-Machine applications by systems in the Mobile Service (excluding IMT).
* Continue to develop the working document toward a preliminary draft new Recommendation ITU-R M.[ITS FRQ].
* Continue to develop the working document toward a Preliminary Draft Revision of Recommendation ITU-R M.1890
* Continue to develop the working document towards a preliminary draft new Report ITU‑R M.[ITS USAGE].
* Continue to develop the working document toward a Preliminary Draft Revision of Recommendation ITU-R M.2084-0
* Continue to develop the update of the handbook volume 4 "Intelligent Transport Systems" of the Land Mobile Handbook (LMH).

6) Land Mobile Handbook

– Consider the need to update the handbooks that are the responsibility of WP 5A. The development of future volumes will be contribution driven.

7) Vocabulary

– Continue the development of the land mobile vocabulary.

# 5 Future meetings

The next meeting of WP 5A (#19) is scheduled to be held within the period 6-16 November 2017 in Geneva.  **The deadline for contributions is 16:00 hours UTC, Monday, 30 October 2017[[1]](#footnote-1)[1].**

# 6 Progression of the work and concluding remarks

The work will continue by correspondence. The correspondence groups will conduct their work using the Share Point facilities as described in Section 6.5 of [Annex 1](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N01!MSW-E).

[Annex 1](http://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0469!N01!MSW-E) also summarizes the status of the texts that are the responsibility of WP 5A (Section 1), the structure of WP 5A (Section 2), and the list of contacts for liaison and collaboration with other organizations under Resolution ITU-R 9-5 (Section 4).

The WP 5A and wireless access systems (WAS) home pages can be found, respectively, at

 <http://www.itu.int/ITU-R/go/rwp5a/en>

 <http://www.itu.int/ITU-R/go/rwp8a-was>.

In closing, the Chairman thanked all the WP 5A participants for their hard work, and in particular the Chairmen of the Working Groups, Ms Amy Sanders and Messrs Dale Hughes, Lang Baozhen, Michael Kraemer, and Hitoshi Yoshino; the LMH Rapporteur, Dr Gabrielle Owen; the vocabulary Rapporteur, Mr Brennan Price; the Liaison Rapporteurs, Mses Gabrielle Owen and Amy Sanders and Messrs  Jonathan Siverling, Paul Najarian, Hitoshi Yoshino, Brian Copsey and Haim Mazar; and the BR, in particular the WP 5A Counsellor, Mr Sergio Buonomo, and his team for the excellent support provided at the meetings.

1. [1]  Members are strongly advised to pay attention to the strict time deadline. Contributions received after the deadline will be considered at the twentieth meeting of WP 5A in 2018. [↑](#footnote-ref-1)