|  |  |
| --- | --- |
| **Radiocommunication Study Groups** |  |
|  |  |
|  |  |
| Source: Docs. 5A/TEMP/169, 190, 192, 193, 194, 195; *Attachments:* 5A/TEMP/166(Rev.1), 181, 172(Rev.1) | **Annex 3 to Document 5A/491-E** |
| **3 December 2021** |
| **English only** |
| Annex 3 to Working Party 5A Chairman’s Report |
| consolidation of reports from the working groupsof working party 5a |
|  |

Contents

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

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

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

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

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

6 [Ad Hoc Working Group 5A/5C – WRC-23 Topic 9.1c](#s6)
(Chairman: Ms Christine Di Lapi, USA)

**Attachments**: 6

[Attachment 1](#att1): Work plan for completion of the work on RSTT under Resolution **240 (WRC-19)**.

[Attachment 2](#att2): Meeting report of Sub-Working Group 5A-4 on WRC-23 agenda item 1.3.

[Attachment 3](#att3): Work plan for the development of draft revisions of Recommendation ITU-R M.2121 and Report ITU‑R M.2444 on Intelligent Transport Systems.

[Attachment 4](#att4): Work plan for the development of a draft new Report ITU-R M.[CAV] – “Connected Automated Vehicles”.

[Attachment 5](#att5): Work plan for the development of a working document towards a draft revision of Report ITU-R M.2417-0 – “Technical and operational characteristics of land-mobile service applications in the frequency range 275-450 GHz.

[Attachment 6](#att6): Work plan for the development of a working document towards a draft revision of Report ITU-R M.2479-0 – “The use of land mobile systems, excluding IMT, for machine-type communications.

NOTE 1 – 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 28](http://www.itu.int/md/dologin_md.asp?lang=en&id=R19-WP5A-C-0491!N28!MSW-E) to [Doc. 5A/491](http://www.itu.int/md/R19-WP5A-C-0491/en) to find the final disposition of these documents by Working Party 5A.

NOTE 2 – Table 1 below shows the documents being carried forward to the next meeting of Working Party 5A.

TABLE 1

List of 51 documents carried forward to the 27th WP5A meeting

|  |
| --- |
| **Working Group 2: Systems and standards (3 documents)** |
| **Broadband Wireless Access** | *Rec. M.2134:* [221](https://www.itu.int/md/R19-WP5A-C-0221/en) [Annex 11](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0221%21N11%21MSW-E.docx) (WP5A);  |
| **Land mobile systems** | *PSME:* [485](https://www.itu.int/md/R19-WP5A-C-0485/en) (WP6A) |
| **Air to Ground** | *Rep. M.2282:* [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 17](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N17%21MSW-E.docx) (WP5A) |

|  |
| --- |
| **Working Group 4: Interference and sharing (6 documents)** |
| **Range 252-296 GHz** | [487](https://www.itu.int/md/R19-WP5A-C-0487/en) (WP5C) |
| [**Res. 731**](https://www.itu.int/oth/R0A060000A1/en)**: >71 GHz** | [343](https://www.itu.int/md/R19-WP5A-C-0443/en) (WP7C); [388](https://www.itu.int/md/R19-WP5A-C-0388/en) (WPs 3J, 3K and 3M); [406](https://www.itu.int/md/R19-WP5A-C-0406/en) (WP7D) |
| **Beam WPT** | [371](https://www.itu.int/md/R19-WP5A-C-0371/en) (WP1A); [483](https://www.itu.int/md/R19-WP5A-C-0483/en) (WP1A) |

|  |
| --- |
| **Working Group 5: New Technologies (1 document)** |
| **Rec. ITU-R M.2121** | [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 25](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N25%21MSW-E.docx) (WP5A) |

|  |
| --- |
| **Ad Hoc WG5A/5C: Topic 9.1c) (41 documents)** |
| **Draft CPM text** | [418](https://www.itu.int/md/R19-WP5A-C-0418/en) (UK/CEPT PTA); [472](https://www.itu.int/md/R19-WP5A-C-0472/en) (Russian Federation) |
| **Work plan** | [431](https://www.itu.int/md/R19-WP5A-C-0431/en) Appendix III (USA); [273](https://www.itu.int/md/R19-WP5A-C-0273/en) (IAFI); [321](https://www.itu.int/md/R19-WP5A-C-0321/en) [Att.4](https://www.itu.int/dms_ties/itu-r/md/19/wp5a/c/R19-WP5A-C-0321%21P04%21MSW-E.docx) (UK/CEPT PT A) |
| **Scope of FWB term** | [418](https://www.itu.int/md/R19-WP5A-C-0418/en) (UK/CEPT PTA); [422](https://www.itu.int/md/R19-WP5A-C-0422/en) (CG Chairman); [431](https://www.itu.int/md/R19-WP5A-C-0431/en) (USA); [445](https://www.itu.int/md/R19-WP5A-C-0445/en) (IAFI); [458](https://www.itu.int/md/R19-WP5A-C-0458/en) (South Africa); [469](https://www.itu.int/md/R19-WP5A-C-0469/en) (Egypt); [472](https://www.itu.int/md/R19-WP5A-C-0472/en) (Russian Federation); [478](https://www.itu.int/md/R19-WP5A-C-0478/en) (Saudi Arabia, UAE) |
| **“IMT Systems” from Res. 175 (WRC-19)** | [418](https://www.itu.int/md/R19-WP5A-C-0418/en) (UK/CEPT PTA); [445](https://www.itu.int/md/R19-WP5A-C-0445/en) (IAFI); [458](https://www.itu.int/md/R19-WP5A-C-0458/en) (South Africa); [472](https://www.itu.int/md/R19-WP5A-C-0472/en) (Russian Federation) |
| **Rec. ITU-R F.1401-1** | [321](https://www.itu.int/md/R19-WP5A-C-0321/en) [Att.2](https://www.itu.int/dms_ties/itu-r/md/19/wp5a/c/R19-WP5A-C-0321%21P02%21MSW-E.docx) (UK/CEPT PT A); [431](https://www.itu.int/md/R19-WP5A-C-0431/en) Appendix II, Att. 2 (USA) |
| **Rec. ITU-R F.1490-1** | [431](https://www.itu.int/md/R19-WP5A-C-0431/en) Appendix II, Att. 1 (USA) |
| **Rec. ITU-R F.1763-1** | [307](https://www.itu.int/md/R19-WP5A-C-0307/en) (China); [431](https://www.itu.int/md/R19-WP5A-C-0431/en) Appendix II, Att. 3 (USA) |
| **Question ITU-R 215-4/5** | [431](https://www.itu.int/md/R19-WP5A-C-0431/en) Appendix I (USA) |
| **New Report / Rec.** | [221](https://www.itu.int/md/R19-WP5A-C-0221/en) ([Annex 18](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0221%21N18%21MSW-E.docx)) (WP5A); [271](https://www.itu.int/md/R19-WP5A-C-0271/en) (USA); [321](https://www.itu.int/md/R19-WP5A-C-0321/en) [Att.3](https://www.itu.int/dms_ties/itu-r/md/19/wp5a/c/R19-WP5A-C-0321%21P03%21MSW-E.docx) (UK/CEPT PTA); [329](https://www.itu.int/md/R19-WP5A-C-0329/en) (Egypt); [336](https://www.itu.int/md/R19-WP5A-C-0336/en) (UAE) |
| **Working document/Misc.** | [418](https://www.itu.int/md/R19-WP5A-C-0418/en) (UK/CEPT PT A); [422](https://www.itu.int/md/R19-WP5A-C-0422/en) (CG Chairman); [431](https://www.itu.int/md/R19-WP5A-C-0431/en) (USA);[445](https://www.itu.int/md/R19-WP5A-C-0445/en) (IAFI); [458](https://www.itu.int/md/R19-WP5A-C-0458/en) (South Africa); [469](https://www.itu.int/md/R19-WP5A-C-0469/en) (Egypt); [472](https://www.itu.int/md/R19-WP5A-C-0472/en) (Russian Federation); [478](https://www.itu.int/md/R19-WP5A-C-0478/en) (Saudi Arabia, UAE);[221](https://www.itu.int/md/R19-WP5A-C-0221/en) ([Annex 18](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0221%21N18%21MSW-E.docx)) (WP5A); [271](https://www.itu.int/md/R19-WP5A-C-0271/en) (USA); [321](https://www.itu.int/md/R19-WP5A-C-0321/en) [Att.3](https://www.itu.int/dms_ties/itu-r/md/19/wp5a/c/R19-WP5A-C-0321%21P03%21MSW-E.docx) (UK/CEPT PTA); [329](https://www.itu.int/md/R19-WP5A-C-0329/en) (Egypt); [336](https://www.itu.int/md/R19-WP5A-C-0336/en) (UAE) |

Carried-forward proposed work plans for reference:

– Proposed draft work plan for revision of Recommendation ITU-R M.1801-2 (Attachment 2 to [Annex 3](https://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0359!N03!MSW-E) to Doc. [5A/359](http://www.itu.int/md/R15-WP5A-C-0359/en))

– Proposed draft workplan for revision of Recommendation ITU-R M.1450-5 (Attachment 3 to [Annex 3](https://www.itu.int/md/dologin_md.asp?lang=en&id=R15-WP5A-C-0359!N03!MSW-E) to Doc. [5A/359](http://www.itu.int/md/R15-WP5A-C-0359/en)).

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

## 1.1 Summary of work undertaken by WG5A-1 during the November 2021 meeting of WP5A

During the November 2021 virtual meeting of Working Party 5A, Working Group 5A-1 met four times and undertook the following work:

– Reviewed ten new input contributions.

– Produced one liaison statement covering aspects of work on WRC-23 agenda item 9.1 b).

– Reviewed the draft work plan for activities covering WRC-23 agenda item 9.1 b).

– Undertook further revisions of draft CPM text covering WRC-23 agenda item 9.1 b).

– Based on a contribution, initiated a new working document towards a preliminary draft new Recommendation ITU-R M.[AS Guidance].

– Continued work on the revision of Recommendation [ITU-R M.1732](https://www.itu.int/rec/R-REC-M.1732/en).

## 1.2 Documents and details of work

WG5A-1 was assigned the following input contributions:

|  |
| --- |
| **Working Group 1: Amateur Services (Chairman:** Dale Hughes**, Australia)** |
| **AI 9.1b) CPM** | [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 6](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N06%21MSW-E.docx) (WP5A); [460](https://www.itu.int/md/R19-WP5A-C-0460/en) (France);  |
| **AI 9.1b studies** | [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 10](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N10%21MSW-E.docx) (WP5A); [387](https://www.itu.int/md/R19-WP5A-C-0387/en) (WPs 3K and 3M); [427](https://www.itu.int/md/R19-WP5A-C-0427/en) (Canada); [432](https://www.itu.int/md/R19-WP5A-C-0432/en) (WP4C); [461](https://www.itu.int/md/R19-WP5A-C-0461/en) (France); [462](https://www.itu.int/md/R19-WP5A-C-0462/en) (France); [470](https://www.itu.int/md/R19-WP5A-C-0470/en) (Germany) |
| **AI 9.1b Work plan** | [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 7](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N07%21MSW-E.docx) (WP5A); |
| **Revisions to Rec.** [ITU-R M.1732](https://www.itu.int/rec/R-REC-M.1732/en) | [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 11](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N11%21MSW-E.docx) (WP5A); [434](https://www.itu.int/md/R19-WP5A-C-0434/en) (Germany) |
| **Other** | [407](https://www.itu.int/md/R19-WP5A-C-0407/en) (ATDI); [483](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R19-WP5A-C-0483) (WP1A) |

Concerning WRC-23 agenda item 9.1, topic b); elements of input contributions [5A/359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 6](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N06%21MSW-E.docx) (WP5A) and [5A/460](https://www.itu.int/md/R19-WP5A-C-0460/en) (France) were included in new draft CPM text which appears in Document 5A/TEMP/161. Contribution [5A/470](https://www.itu.int/md/R19-WP5A-C-0470/en) (Germany) became the foundation of a new working document towards a preliminary draft new Recommendation ITU-R M.[AS Guidance], see Document 5A/TEMP/175. After much offline discussion, elements of Documents [5A/359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 10](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N10%21MSW-E.docx) (WP5A), [5A/427](https://www.itu.int/md/R19-WP5A-C-0427/en) (Canada) and Document [5A/462](https://www.itu.int/md/R19-WP5A-C-0462/en) (France) were combined into the preliminary draft new Report ITU-R M.[AMATEUR.CHARACTERISTICS] for further work at the next meeting of WP5A, see Document 5A/TEMP/176. Inputs [5A/387](https://www.itu.int/md/R19-WP5A-C-0387/en) (WPs 3K and 3M) and [5A/432](https://www.itu.int/md/R19-WP5A-C-0432/en) (WP4C) were noted; though parts of Doc. [4C/283](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R19-WP4C-C-0283) referred to in Doc. [5A/432](https://www.itu.int/md/R19-WP5A-C-0432/en) were included in the report noted above. The WG5A-1 workplan was revised and will go forward as Doc. 5A/TEMP/177. A progress report of work towards WRC-23 agenda item 9.1, topic b), incorporating elements of Doc. [5A/461](https://www.itu.int/md/R19-WP5A-C-0461/en) (France), was drafted and will be sent to WP 4C as liaison statement 5A/TEMP/174.

Revisions to Report [ITU-R M.1732](https://www.itu.int/rec/R-REC-M.1732/en) “Characteristics of systems operating in the amateur and amateur-satellite services for use in sharing studies”, have progressed through contributions [5A/359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 11](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N11%21MSW-E.docx) (WP5A) and [5A/434](https://www.itu.int/md/R19-WP5A-C-0434/en) (Germany) and these will go forward as Document 5A/TEMP/185 for further work at the next meeting of WP5A; it is hoped that other administrations will contribute positively to this work.

Contribution [5A/483](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R19-WP5A-C-0483) (WP1A) was noted and passed to WG5A-4 for further discussion. Contribution [5A/407](https://www.itu.int/md/R19-WP5A-C-0407/en) (ATDI) was briefly discussed and WG5A-1 thought that the information in the contribution (EMF around an Amateur Radio Station, 14 MHz to 440 MHz) was useful and important, and that when the contents of Document [5A/407](https://www.itu.int/md/R19-WP5A-C-0407/en) appear in another ITU report, recommendation or handbook that it should be referenced in the Amateur and Amateur-satellite services handbook and [Guide to the use of ITU-R texts relating to the amateur and amateur-satellite services](https://www.itu.int/oth/R0A06000067) when they are next reviewed.

## 1.3 Offline Drafting Group

To facilitate progress on the preliminary draft new Report ITU-R M.[AMATEUR.CHARACTERISTICS], an offline email drafting group was established in accordance with the [guidance provided by WP5A](https://extranet.itu.int/rsg-meetings/sg5/wp5a/Share/Offline%20Email%20Discussions/5A%265C%20draft%20working%20methods%20for%20offline%20email%20discussion.docx?d=w9d7da9213b07403ca9f4525b68c38d54). The conveners were Ms Laura Pometcu (France) and Mr Barry Lewis (IARU) and the resultant Document (5A/TEMP/176) will go forward for further work at the next meeting of WP5A. This was a complicated and difficult assignment and the WG5A‑1 Chairman thanks the conveners for their efforts.

## 1.4 Observations on the results of the offline drafting discussions

One Administration expressed its reservations about the preliminary draft new Report ITU-R M.[AMATEUR.CHARACTERISTICS] developed by the offline drafting group. The view of that Administration is that there are serious procedural difficulties with a joint WP4C/WP5A report, especially with respect to the competency of either Working Party to approve some parts of any joint work. Guidance is sought so that the procedural process is clarified.

While not criticizing the conveners, the WG5A-1 Chairman has concerns that the document is structurally complex, and it may be very difficult to ensure that approved material from WP4C is accurately incorporated into the final document in a timely manner.

## 1.5 Comments regarding development of draft CPM text

Given that there is only one more meeting of WP5A (the responsible group for the draft CPM text) before the deadline for submission of the draft CPM text and that WP4C studies may not have concluded there was some discussion in the WG5A-1 meeting about permitting WP4C to independently submit CPM text. The view of the WG5A-1 Chairman is that the appropriate process is clearly described in the various ITU-R correspondence and that any changes made to the process must be made by the CPM Management Committee.

## 1.6 Output documents from WG5A-1

| Topic | WP5A Action | Temp document |
| --- | --- | --- |
| Liaison statement to WP 4C re AI 9.1b Progress on work | Approve | 5A/TEMP/174 |
| WRC-23 AI 9.1b) draft CPM text (Annex 6) | Attach to WP5A Chairman’ Report | 5A/TEMP/161 |
| WRC-23 AI 9.1b) work plan (Annex 7)Revised | Attach to WP5A Chairman’ Report | 5A/TEMP/177 |
| WRC-23 AI 9.1b) elements (Annex 10)Elements of a report for work next meeting | Attach to WP5A Chairman’ Report | 5A/TEMP/176 |
| WRC-23 AI 9.1b) elements (Annex XX)Elements of a new Recommendation ITU-R M.[AS Guidance] | Attach to WP5A Chairman’ Report | 5A/TEMP/175 |
| Revisions to Rec. [ITU-R M.1732](https://www.itu.int/rec/R-REC-M.1732/en) | Attach to WP5A Chairman’ Report | 5A/TEMP/185 |
| WG5A-1 Chairman’s Report  | Attach to WP5A Chairman’ Report | 5A/TEMP/192 |

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

• Based on contributions, continue work on WRC-23 agenda item 9.1 b).

• Update WG5A-1 work plan as required.

• Respond to liaison notes from other groups as appropriate.

• Continue with revisions to Recommendation [ITU-R M.1732](https://www.itu.int/rec/R-REC-M.1732/en).

• Deal with any other work relevant to the amateur and amateur-satellite service that is brought to the meeting.

## 1.8 Conclusion

The WG5A-1 Chairman thanks the meeting participants for their input to the WG5A-1 meeting and offline drafting group discussions.

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

## 2.1 Executive summary

WG5A-2 continued its work on the development of working document towards a preliminary draft revision of Report ITU-R M.2442-0 – *Current and future usage of railway radiocommunication systems between train and trackside*.

WG5A-2 continued its work on the development of working document towards a preliminary draft new Recommendation ITU-R M.[RSTT\_FRQ] – *Spectrum harmonization for Railway Radiocommunication Systems between Train and Trackside (RSTT)*.

WG5A-2 continued its work on the development of working document towards a preliminary draft new Report ITU-R M.[UCS] – *Utility communication systems*.

WG5A-2 continued its work on the development of working document towards a preliminary draft revision of Recommendation ITU-R M.1450-5 – *Characteristics of broadband radio local area networks*.

WG5A-2 continued its work on the development of working document towards a preliminary draft revision of Recommendation ITU-R M.1801-2 – *Radio interface standards for broadband wireless access systems, including mobile and nomadic applications, in the mobile service operating below 6 GHz.*

## 2.2 Systems and standards

Working Group 5A-2 met six times at the twenty-sixth meeting of WG5A. Working Group 5A-2 received the 33 documents assigned by the WG5A Plenary as follows:

|  | **Document 5A/…** |
| --- | --- |
| **2.2.1 Railways (incl.** **Res.** [**240 (WRC-19)**](https://www.itu.int/oth/R0A060000A0/en)**)** | *Rep. M.2442:* [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 14](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N14%21MSW-E.docx) (WP5A); [466](https://www.itu.int/md/R19-WP5A-C-0466/en) (France)*Rec. RSTT Frequencies:* [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 15](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N15%21MSW-E.docx) (WP5A); [450](https://www.itu.int/md/R19-WP5A-C-0450/en) (Japan); [465](https://www.itu.int/md/R19-WP5A-C-0465/en) (France) |
| **2.2.2 Broadband Wireless Access** | *Rec. M.2134:* [221](https://www.itu.int/md/R19-WP5A-C-0221/en) [Annex 11](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0221%21N11%21MSW-E.docx) (WP5A)*Rec. M.1801:* [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 13](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N13%21MSW-E.docx) (WP5A); [398](https://www.itu.int/md/R19-WP5A-C-0398/en) (CCSA); [410](https://www.itu.int/md/R19-WP5A-C-0410/en) (TIA); [420](https://www.itu.int/md/R19-WP5A-C-0420/en) (3GPP TSG RAN); [425](https://www.itu.int/md/R19-WP5A-C-0425/en) (Canada); [436](https://www.itu.int/md/R19-WP5A-C-0436/en) (XGP Forum); [439](https://www.itu.int/md/R19-WP5A-C-0439/en) (IEEE) |
| **2.2.3 Land mobile systems** | *Utilities:* [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 16](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N16%21MSW-E.docx) (WP5A); [370](https://www.itu.int/md/R19-WP5A-C-0370/en) (WP1A); [442](https://www.itu.int/md/R19-WP5A-C-0442/en) (UTCAL)*Testbeds:* [392](https://www.itu.int/md/R19-WP5A-C-0392/en) (ITU-T SG11)*PSME:* [430](https://www.itu.int/md/R19-WP5A-C-0430/en) (USA); [485](https://www.itu.int/md/R19-WP5A-C-0485/en) (WP6A)*Reduction of energy consumption:* [369](https://www.itu.int/md/R19-WP5A-C-0369/en) (ITU-T SG5) |
| **2.2.4 Air to Ground**  | *Update of Rep. ITU-R M.2282:* [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 17](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N17%21MSW-E.docx) (WP5A) |
| **2.2.5 RLAN characteristics** | *Rec. M.1450:* [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 12](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N12%21MSW-E.docx) (WP5A); [379](https://www.itu.int/md/R19-WP5A-C-0379/en) (ETSI); [397](https://www.itu.int/md/R19-WP5A-C-0397/en) (CCSA); [413](https://www.itu.int/md/R19-WP5A-C-0413/en) (CEPT); [424](https://www.itu.int/md/R19-WP5A-C-0424/en) (Canada); [433](https://www.itu.int/md/R19-WP5A-C-0433/en) (USA); [437](https://www.itu.int/md/R19-WP5A-C-0437/en) (WBU-TC); [438](https://www.itu.int/md/R19-WP5A-C-0438/en) (IEEE); [474](https://www.itu.int/md/R19-WP5A-C-0474/en) (China)*Support WG4 with characteristics for sharing & coexistence studies* |
| **2.2.6 ANT, HNT** | 351 (ITU-T SG9); 352 (ITU-T SG15); 353 (ITU-T SG15) |

Working Group 5A-2 set up one Sub-Working Group and two draft groups to deal with Railways, Utilities, and Recommendations ITU-R M.1801/M.1450, respectively:

– SWG5A2-1 Railways
Mr Yan Yang e-mail: yyang@bjtu.edu.cn

– DG5A2-1 Utilities
Mr Brett Kilbourne e-mail: brett.kilbourne@utc.org

– DG5A2-2 M.1801/M.1450
Mr José COSTA e-mail: jose.costa@ericsson.com

### 2.2.1 Railways (incl. [Resolution 240 (WRC-19)](https://www.itu.int/oth/R0A060000A0/en))

Input documents: RSTT:
*Rec. RSTT Frequencies:* [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 15](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N15%21MSW-E.docx) (WP5A); [450](https://www.itu.int/md/R19-WP5A-C-0450/en) (Japan); [465](https://www.itu.int/md/R19-WP5A-C-0465/en) (France) *Rep. M.2442:* [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 14](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N14%21MSW-E.docx) (WP5A); [466](https://www.itu.int/md/R19-WP5A-C-0466/en) (France)

Output documents: 5A/TEMP/158R1 (M.2442), 159R1 (LS), 160R1 (FRQ), 166R1 (work plan)

Carry forward documents: None

The SWG5A2-1 Railways had one session during this WP5A meeting. A sub working group on RSTT was established by the decision of WG5A-2.

The sub working group was working on the following issues:

 Issue: Update work plan for RSTT.

There are four TEMP documents submitted for discussion at the WG level. Two working documents would be attached to the WP5A Chairman's Report.

Regarding to the working document towards a preliminary draft revision of Report ITU-R M.2442‑0, the revision document was further developed based on the input contribution and the discussion.

Regarding to the working document towards a preliminary draft new Recommendation ITU-R M.[RSTT\_FRQ], this document was further developed based on the input contribution and discussion. There were different views raised during the meeting whether sharing studies should be included in this recommendation.

Regarding to draft liaison statement to Regional Organizations regarding RSTT frequency band information and related activities, it was fully discussed and agreed in SWG5A2-1 Railways meeting and was submitted to the WP5A plenary meeting for approval, however, it was not approved by the WP5A plenary meeting.

Regarding to the off-line discussion on work plan, the work plan has been updated. The working document towards workplan on RSTT is in [Attachment 1](#att1) to this annex.

### 2.2.2 Broadband Wireless Access

Input documents: Rec. ITU-R M.2134: [5A/221](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0221%21N11%21MSW-E.docx) (Annex 11) (WP5A)

Output documents: None

Carry forward documents: [5A/221](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0221%21N11%21MSW-E.docx) (Annex 11) (WP5A)

There was no new input document on revision of Rec. ITU-R M.2134 “Receiver characteristics and protection criteria for systems in the mobile service in the frequency range 27.5-29.5 GHz for use in sharing and compatibility studies”, the meeting decided to carry forward [5A/221](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0221%21N11%21MSW-E.docx) (Annex 11) (WP5A) to the next meeting for further consideration.

### 2.2.3 Land mobile systems

Input documents:
 *Utilities:* [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 16](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N16%21MSW-E.docx) (WP5A); [370](https://www.itu.int/md/R19-WP5A-C-0370/en) (WP1A); [442](https://www.itu.int/md/R19-WP5A-C-0442/en) (UTCAL)
 *Testbeds:* [392](https://www.itu.int/md/R19-WP5A-C-0392/en) (ITU-T SG11)
 *PSME:* [430](https://www.itu.int/md/R19-WP5A-C-0430/en) (USA); [485](https://www.itu.int/md/R19-WP5A-C-0485/en) (WP6A)
 *Reduction of energy consumption:* [369](https://www.itu.int/md/R19-WP5A-C-0369/en) (ITU-T SG5)

Output documents: Doc. 5A/TEMP/186R1 (Report on Utilities); Doc. 5A/TEMP/187R1 (LS)

Carry forward documents: [485](https://www.itu.int/md/R19-WP5A-C-0485/en) (WP6A)

Regard to Utilities, one contribution was received from UTCAL. The contribution was consolidated into a temp document which is Doc. 5A/TEMP/186R1. A liaison statement was developed to call the attention of WP 5D to references to IMT within Annexes 4 and 5, and call the attention of WP 5C to references to fixed services within sections 9.2, 9.3 and 10, and to ITU-T SG 15 for reviewing the document to ensure that there is no overlap with the work in ITU-T.

WG5A-2 took note of the information provided in [370](https://www.itu.int/md/R19-WP5A-C-0370/en) (WP1A), [392](https://www.itu.int/md/R19-WP5A-C-0392/en) (ITU-T SG11), [369](https://www.itu.int/md/R19-WP5A-C-0369/en) (ITU-T SG5), [430](https://www.itu.int/md/R19-WP5A-C-0430/en) (USA) and did not see a need for further action at this point in time.

Regarding to the liaison from WP6A on ENG, the meeting expressed the view that more time was needed to review, so it was decided to carry forward it to next meeting for further consideration.

### 2.2.4 Air to Ground

Input documents: *Update of Rep. ITU-R M.2282:* [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 17](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N17%21MSW-E.docx) (WP5A)

Output documents: None

Carry forward document: [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 17](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N17%21MSW-E.docx) (WP5A)

Regarding Rep. ITU-R M.2282, there is no new input contribution. The meeting decided to carry forward the working document to the next meeting for further consideration.

### 2.2.5 M.1801 and M.1450

Input documents:
*M.1801:* [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 13](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N13%21MSW-E.docx) (WP5A); [398](https://www.itu.int/md/R19-WP5A-C-0398/en) (CCSA); [410](https://www.itu.int/md/R19-WP5A-C-0410/en) (TIA); [420](https://www.itu.int/md/R19-WP5A-C-0420/en) (3GPP TSG RAN); [425](https://www.itu.int/md/R19-WP5A-C-0425/en) (Canada); [436](https://www.itu.int/md/R19-WP5A-C-0436/en) (XGP Forum); [439](https://www.itu.int/md/R19-WP5A-C-0439/en) (IEEE)  *Rec. M.1450:* [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 12](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N12%21MSW-E.docx) (WP5A); [379](https://www.itu.int/md/R19-WP5A-C-0379/en) (ETSI); [397](https://www.itu.int/md/R19-WP5A-C-0397/en) (CCSA); [413](https://www.itu.int/md/R19-WP5A-C-0413/en) (CEPT); [424](https://www.itu.int/md/R19-WP5A-C-0424/en) (Canada);
[433](https://www.itu.int/md/R19-WP5A-C-0433/en) (USA); [437](https://www.itu.int/md/R19-WP5A-C-0437/en) (WBU-TC); [438](https://www.itu.int/md/R19-WP5A-C-0438/en) (IEEE); [474](https://www.itu.int/md/R19-WP5A-C-0474/en) (China)

Output documents: Doc. 5A/TEMP/167R1 (M.1801); Doc. 5A/TEMP/170R1 (M.1450)

Carry forward document: None

The DG on M.1801/M.1450 met according to the agendas in Doc. [5A/ADM/54](https://www.itu.int/md/R19-WP5A-ADM-0054/en) and Doc. [5A/ADM/61](https://www.itu.int/md/R19-WP5A-ADM-0061/en) with the task of developing the working documents in [Annex 12](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N12%21MSW-E.docx) and [Annex 13](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N13%21MSW-E.docx) of Doc. [5A/359](https://www.itu.int/md/R19-WP5A-C-0359/en), towards the preliminary draft revisions of Recommendations ITU-R M.1450 and ITU‑R M.1801, respectively. The input contributions proposing amendments to these working documents had already been presented at the WG5A-2 level.

The DG discussed the proposals in some detail, including an offline activity, for which the working documents, participants list, and archived emails, are available on SharePoint. Attachments 1 and 2 of Doc. 5A/437 (WBU-TC) were noted for information. Two output working documents were prepared: Doc. 5A/TEMP/167R1 for ITU-R M.1801 and Doc. 5A/TEMP/170R1 for M.1450. A number of suggestions were made that are recorded in editor’s notes in the working documents for further work. In particular, it was pointed out that the latest WAS/RLAN technology is capable of supporting a mix of fixed, nomadic and mobile applications and further information regarding the mobility characteristics of the RLAN standards should be included in the draft revisions of the Recommendations. Contributions to the 27th meeting of WP5A are encouraged to continue progressing the work.

### 2.2.6 ANTs, HNTs, etc.

Input documents: [5A/351](https://www.itu.int/md/R19-WP5A-C-0351/en) (ITU-T SG9); [5A/352](https://www.itu.int/md/R19-WP5A-C-0352/en) (ITU-T SG15); [5A/353](https://www.itu.int/md/R19-WP5A-C-0353/en) (ITU-T SG15)

Output documents: None.

Carry forward document: None

WG5A-2 took note of the information provided in these documents and did not see a need for further action at this point in time.

### 2.2.7 Review of ITU-R texts

Working Group 5A-2 reviewed the WG5A texts Section 1 of [Annex 1](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0221%21N01%21MSW-E.docx) to Section 1 of [Annex 1](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N01%21MSW-E.docx) to Doc. [5A/359](http://www.itu.int/md/R19-WP5A-C-0359) and [Guide to the use of ITU-R texts relating to the land mobile service](http://www.itu.int/oth/R0A06000001/en). No modification is needed from the perspective of Working Group 2.

### 2.2.8 Objectives for the next meeting

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

– Development of working document towards a preliminary draft new Recommendation ITU-R M.[RSTT\_FRQ] – *Spectrum Harmonization for Railway Radiocommunication Systems between Train and Trackside (RSTT)*.

– Development of working document towards a preliminary draft revision of Report ITU‑R M.2442-0 – *Current and future usage of railway radiocommunication systems between train and trackside*.

– Development of working document towards a preliminary draft revision of Report ITU‑R M.2282-0 – *Systems for public mobile communications with aircraft*.

– Development of working document towards a preliminary draft new Report ITU-R M.[Utilities] – *Utility communication systems*.

– Development of working document towards a preliminary draft revision of Recommendation ITU-R M.1450-5 – *Characteristics of broadband radio local area networks*.

– Development of working document towards a preliminary draft revision of Recommendation ITU-R M.1801-2 – *Radio interface standards for broadband wireless access systems, including mobile and nomadic applications, in the mobile service operating below 6 GHz*.

– Development of working document towards a preliminary draft revision of Recommendation ITU-R M.2134-5 – *Receiver characteristics and protection criteria for systems in the mobile service in the frequency range 27.5-29.5 GHz for use in sharing and compatibility studies*.

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

### 2.2.9 Chairman’s closing remarks

Finally, Chairman of Working Group 5A-2 would like to thank all participants of WG5A-2 for their contributions and cooperation and particularly thank SWG Chairman, Mr Yan Yang from China, Draft Group Chairmen, Mr Brett Kilbourne from UTC and Mr José Costa from Ericsson, for their good and efficient work. The WG Chairman would also like to express sincere thanks to Mr Uwe Loewenstein and other ITU staffs for their professional support.

**Attachments**:

[Attachment 1](#att1): Work plan for completion of the work on RSTT under Resolution **240 (WRC-19)**.

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

## 3.1 Executive summary

Working Group 5A-3 (WG5A-3) met two times at the November 2021 meeting of Working Party 5A (WP5A). WG5A-3 considered nine input contribution as assigned by the WP5A Plenary, and one late contribution.

The objectives for this meeting were outlined in Section 3.5 of [Annex 3 of Doc. 5A/359](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N03%21MSW-E.docx) as:

– Consider any responses received regarding the possible suppression of the Compendium of ITU’s Work on Emergency Telecommunications;

– Consider input contributions on possible editorial, or more substantive, revisions to Report ITU-R M.2377;

– Consider input contributions on the possible development of a new document on emergency communications under the land mobile service.

Based on contributions received, the meeting agreed to request the Inter-Sector Coordination Task Force take appropriate action to suppress the Compendium and developed the necessary liaison statements. The meeting initiated draft revisions of Report ITU-R 2377-1 and Resolution ITU-R 55‑3. Contributions are sought on these revisions as well as on the possible development of a Handbook with best practices or guidelines for emergency communications.

## 3.2 Organization of the work

All input contributions were introduced at the Working Group (WG) level. The Disaster Relief Liaison Rapporteur’s Report (Doc. [5A/482](https://www.itu.int/md/R19-WP5A-C-0482/en)) was addressed at the WP5A Plenary. The WP5A 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/oth/R0A06000001/en)” and of Section 1 of [Annex 1 of Doc. 5A/359](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N01%21MSW-E.docx). WG5A-3 decided to handle the disposition of all these items at the working group level.

## 3.3 Execution of work

Objective 1: Possible suppression of the Compendium of ITU’s Work on Emergency Telecommunications

WG5A-3 has been considering the content and status of the [Compendium of ITU’s Work on Emergency Telecommunications](https://www.itu.int/net/ITU-R/terrestrial/res647/docs/Compendium.pdf) since 2019, as it was recognized that the Compendium was out-of-date. There was also recognition of the excellent work that has been done by the ITU to provide up-to-date information on the topic of emergency communications through its website, particularly through the [ITU Areas of Action – Emergency Telecommunications site](https://www.itu.int/en/action/emergency/Pages/default.aspx). That ITU site contains links to each of the Sectors and their related work in emergency communications. For example, it links to the [ITU-R’s site on Emergency Telecommunications](https://www.itu.int/en/ITU-R/information/Pages/emergency.aspx), which itself provides links to the up-to-date information on the work of each of the Study Groups, was well as WRC Resolutions, Recommendations, etc. The links to the [ITU-D’s site on Emergency communications](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Pages/default.aspx) and the [ITU‑T’s site on emergency telecomms](https://www.itu.int/en/ITU-T/emergencytelecoms/Pages/default.aspx) provide similarly current and regularly updated information.

Recognizing the excellent information available on the website and the vitally important role the ITU sectors have played, and will continue to play, in emergency communications and in supporting the ITU in providing relevant, critical, and essential support and assistance to administrations in this area, WP5A had sought the advice of relevant entities[[1]](#footnote-1) as to the possible suppression of the Compendium.

At this meeting, WG5A-3 considered nine inputs from relevant entities in response to the request, as well as a report from the Secretariat on communications with the Inter-Sector Coordination Task Force (ISC-TF). The inputs and the expressed views on possible suppression are reflected in the following table:

|  |
| --- |
| ITU-R |
| Source | Document | Content |
| 4A | [428](https://www.itu.int/md/R19-WP5A-C-0428/en) | Supports suppression |
| 4C | [389](https://www.itu.int/md/R19-WP5A-C-0389/en) | Supports suppression |
| 5C | [486](https://www.itu.int/md/R19-WP5A-C-0486/en) | Supports suppression |
| 5D | [417](https://www.itu.int/md/R19-WP5A-C-0417/en) | Supports suppression |
| 7C | [404](https://www.itu.int/md/R19-WP5A-C-0404/en) | No objection to suppression |
|  |  |  |
| ITU-D |
| Q5/2 | [435](https://www.itu.int/md/R19-WP5A-C-0435/en) | Supports suppression. BDT Focal Point confirmed that such action was possible |
|  |  |  |
| ITU-T |
| SG2 | [402](https://www.itu.int/md/R19-WP5A-C-0402/en) | Concurs with suppression |
| SG11 | [393](https://www.itu.int/md/R19-WP5A-C-0393/en) | Suppression should be decided by TSB Director. TSB Director expressed his support for suppression. |
|  |  |  |
| Other |
| Inter-Sector Coordination Task Force | Email correspondence with Secretariat | Agreed on the way forward proposed for the Compendium |
| IAFI | [447](https://www.itu.int/md/R19-WP5A-C-0447/en) | Recognized need to suppress. |

Based on the expressions of support for suppression and the absence of any opposition, WG5A-3 developed a liaison statement (5A/TEMP/152R1) informing the ISC-TF of the responses received and requesting the ISC-TF take appropriate measures to implement the suppression. WG5A-3 also sent a liaison statement (5A/TEMP/150R1) to the relevant entities thanking them for their feedback and informing them of the action taken.

Objective 2: Editorial, or more substantive, revisions to Report ITU-R M.2377-1 Radiocommunication objectives and requirements for Public Protection and Disaster Relief

At the April-May 2021 meeting, the Chairman of WG5A-3 had identified some editorial updates that might be appropriate in a possible revision of Report ITU-R M.2377-1. Contributions were expressly invited to this meeting to advance the work. WG5A-3 considered input contribution [5A/448](https://www.itu.int/md/R19-WP5A-C-0448/en) that provided specific and detailed proposals for the revision. The meeting agreed to initiate the revision and a working document (5A/TEMP/151R1) was developed. Contributions are sought to further advance the work at the next meeting.

Objective 3: possible development of a new document on emergency communications under the land mobile service

WG5A-3 considered that there might be value in developing a new document on emergency telecommunications under the land mobile service. Inputs were sought to this meeting to further develop the concept and possible content. The meeting considered the proposal in [5A/447](https://www.itu.int/md/R19-WP5A-C-0447/en) to develop a possible handbook on emergency radiocommunications. The proposed handbook would address the mandate in Resolution ITU-R 55-3 that *ITU‑R Study Groups continue studies on new emerging technologies which could support disaster prediction, detection, mitigation and relief*.

The exact nature of the handbook is still to be developed. Both ‘best practices’ and ‘guidelines’ were suggested as possible content. Contributions are sought to the next meeting to clarify the scope and structure of the handbook, as this would facilitate later contributions on content.

Revision of Resolution ITU-R 55-3

Document [5A/447](https://www.itu.int/md/R19-WP5A-C-0447/en) also proposed that WG5A-3 undertake a revision of Resolution ITU-R 55-3. The meeting recognized that the Resolution is assigned to WG5A-3, and that any revision of the Resolution would only be agreed at a Radiocommunications Assembly. Nonetheless, the meeting thought it would be helpful to consider possible revisions. The meeting developed a working document toward a revision of the Resolution (5A/TEMP/165) and will continue to consider the text in future meetings.

## 3.4 Administrative matters

WG5A-3 followed the WP5A 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 of Doc. 5A/359](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N01%21MSW-E.docx). Editorial suggestions were provided to the WP5A Chairman.

## 3.5 Future work

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

– Further develop the editorial, or more substantive, revisions to Report ITU-R M.2377-1, based on input contributions;

– Develop the scope and structure of a possible handbook on emergency communications under the land mobile service, based on input contributions;

– Further develop the working document toward a revision of Resolution ITU-R 55-3, based on input contributions.

## 3.6 Conclusion

All parties are encouraged to contribute to the next meeting of Working Party 5A, particularly to advance work on the objectives outlined above.

The WG5A-3 Chairman would like to express sincere thanks all the participants of Working Group 5A-3 for their contributions to the work at this meeting.

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

## 4.1 Executive Summary

WG5A-4 completed the revision of Recommendation ITU-R M.1824 and the development of a new Report ITU-R M.[100-GHz.RSTT.EESS.COEXIST], continued work related to the 252-296 GHz frequency range as well as Resolution 731, continued the preparatory work for WRC-23 agenda item 1.3 where WP 5A is the lead group, and provided technical characteristics and other relevant information to various Working Parties for their sharing studies related to WRC-23 and other topics.

## 4.2 Introduction

Working Group 5A-4 met six times during the November 2021 meeting of Working Party 5A and considered 70 input and carried-forward documents and developed 12 output documents.

## 4.3 Consideration of input documents

The following issues were considered based on input contributions as assigned to WG5A-4 by the WP 5A opening plenary based on Document 5A/ADM/41.

### 4.3.1 Document copied to WP 5A for information

Input documents: [5A/360](https://www.itu.int/md/R19-WP5A-C-0360/en) (WP6A); [5A/361](https://www.itu.int/md/R19-WP5A-C-0361/en) (WP5C); [5A/362](https://www.itu.int/md/R19-WP5A-C-0362/en) (WP5C); [5A/363](https://www.itu.int/md/R19-WP5A-C-0363/en) (WP5C); [5A/364](https://www.itu.int/md/R19-WP5A-C-0364/en) (WP5C); [5A/365](https://www.itu.int/md/R19-WP5A-C-0365/en) (WP5C); 5A/366 (WP5C); 5A/367 (ITU-T SG5); [5A/372](https://www.itu.int/md/R19-WP5A-C-0372/en) (WP5B); [5A/380](https://www.itu.int/md/R19-WP5A-C-0380/en) (WPs 3K and 3M); 5A/381 (WPs 3K and 3M); 5A/382 (WPs 3J, 3K and 3M); 5A/383 (WPs 3K and 3M); 5A/385 (WPs 3K and 3M); 5A/391 (WP4C); 5A/405 (WP7D); 5A/408 (WP7C); 5A/423 (WP6A)

WG5A-4 took note of the information provided in these documents and did not see a need for further action at this point in time.

### 4.3.2 Characteristics for sharing studies with EESS and MetSat

Input document: [5A/400](https://www.itu.int/md/R19-WP5A-C-0400/en) (WP7B)

WG5A-4 took note of the information provided by WP 7B and will take it into account in the further work of WP5A as needed.

### 4.3.3 Field measurements of unwanted emissions from IMT AAS

Input document: [5A/377](https://www.itu.int/md/R19-WP5A-C-0377/en) (3GPP)

WG5A-4 took note of the information provided by 3GPP and did not see a need for further action at this point in time.

### 4.3.4 WRC-19 agenda item 1.3

Input documents: [5A/74](https://www.itu.int/md/R19-WP5A-C-0074/en) (ESOA); [5A/88](https://www.itu.int/md/R19-WP5A-C-0088/en) (WP5B); [5A/190](https://www.itu.int/md/R19-WP5A-C-0190/en) (China); [5A/203](https://www.itu.int/md/R19-WP5A-C-0203/en), [5A/204](https://www.itu.int/md/R19-WP5A-C-0204/en) (Ericsson, Huawei, Intel, Nokia, Samsung); [5A/233](https://www.itu.int/md/R19-WP5A-C-0233/en) (WP5C); [5A/298](https://www.itu.int/md/R19-WP5A-C-0298/en) (Sweden, Finland); [5A/301](https://www.itu.int/md/R19-WP5A-C-0301/en) (China); [5A/313](https://www.itu.int/md/R19-WP5A-C-0313/en) (South Africa, Zimbabwe); [5A/322](https://www.itu.int/md/R19-WP5A-C-0322/en) (Germany); [5A/328](https://www.itu.int/md/R19-WP5A-C-0328/en) (ESOA); [5A/331](https://www.itu.int/md/R19-WP5A-C-0331/en) (Egypt, UAE); [5A/332](https://www.itu.int/md/R19-WP5A-C-0332/en) (Egypt, UAE); [5A/333](https://www.itu.int/md/R19-WP5A-C-0333/en) (Egypt, UAE); [5A/334](https://www.itu.int/md/R19-WP5A-C-0334/en) (Egypt, UAE); [5A/378R1](https://www.itu.int/md/R19-WP5A-C-0378/en) (WP5D); [5A/384](https://www.itu.int/md/R19-WP5A-C-0384/en) (WPs 3K and 3M); [5A/394](https://www.itu.int/md/R19-WP5A-C-0394/en) (WP4A); [5A/395](https://www.itu.int/md/R19-WP5A-C-0395/en) (WP4A); [5A/416](https://www.itu.int/md/R19-WP5A-C-0416/en) (WP5D); [5A/441](https://www.itu.int/md/R19-WP5A-C-0441/en) (Uzbekistan); [5A/443](https://www.itu.int/md/R19-WP5A-C-0443/en) (Burkina Faso, Côte d’Ivoire, Ghana, Guinea, Mali, Niger, Togo); [5A/444](https://www.itu.int/md/R19-WP5A-C-0444/en) (Ghana, Guinea, Niger); [5A/455](https://www.itu.int/md/R19-WP5A-C-0455/en) (Nigeria, South Africa, Zimbabwe); [5A/456](https://www.itu.int/md/R19-WP5A-C-0456/en) (Nigeria, South Africa, Zimbabwe); [5A/457](https://www.itu.int/md/R19-WP5A-C-0457/en) (Nigeria, South Africa, ZBC); [5A/464](https://www.itu.int/md/R19-WP5A-C-0464/en) (France, Germany); [5A/467](https://www.itu.int/md/R19-WP5A-C-0467/en) (GSMA); [5A/468](https://www.itu.int/md/R19-WP5A-C-0468/en) (Egypt, UAE)

Output documents: 5A/TEMP/180 (draft CPM text); 5A/TEMP/181 (SWG Chairman’s Report); 5A/TEMP/182 (Workplan); 5A/TEMP/183 (ToR CG); 5A/TEMP/184 (Working doc)

WG5A-4 continued this work in a SWG led by Mr Cesar GUTIÉRREZ. The SWG discussed all input contributions, prepared a working document for the sharing and compatibility studies and updated the draft CPM text. The workplan was also revised. It was furthermore agreed to discontinue the compilation of the technical characteristics and operational parameters of the land mobile service for sharing and compatibility studies under WRC-23 agenda item 1.3 (Annex 18 of the Chairman’s Report of the previous WP 5A meeting) since all parameter information and references are now included in the working document on sharing and compatibility studies directly and a separate compilation is no longer needed.

WG5A-4 also considered a possible correspondence group to progress the work under WRC-23 agenda item 1.3 but could not reach agreement on how to phrase the specific tasks for the CG and this issue was therefore forwarded to the closing plenary for further discussion.

For a more detailed report from this SWG activity, see [Attachment 2](#att2) to this annex.

As at previous WP 5A meetings, the discussion on WRC-23 agenda item 1.3 was again challenging and controversial at times. After many hours of rather circular debate and repetition of initial arguments and positions, it was possible to move forward on some of these issues by reflecting the different views of administrations in the working documents. It was recalled during the discussions that Resolution [ITU-R 2](https://www.itu.int/pub/R-RES-R.2) provides such an approach (*see resolves* 2 *f)*) for situations where different views cannot be reconciled.

Based on the current ITU-R meeting planning, the next WP 5A meeting will be the last meeting to finalize the draft CPM text. In that regard, concerns were expressed about the lack of progress in the preparations of the draft CPM text since the discussion has so far mainly focused on section 2 and it is urgently required to complete that discussion (reflecting the different views as needed) and move on to section 3 and also sections 4 and 5. Input contributions are encouraged to progress the work in particular on these sections and it will be critically important for the future work that lengthy circular debates around different views are avoided and these views be documented in the draft CPM text as provided by Resolution ITU-R 2, in order to be able to complete the draft CPM text in time.

### 4.3.5 Revision of Recommendation ITU-R M.1824

Input document: [5A/449](https://www.itu.int/md/R19-WP5A-C-0449/en) (Japan)

Output document: 5A/TEMP/155

The revision of this Recommendation had already been stable at the previous WP 5A meeting and the working document had been elevated to a preliminary draft revision of the Recommendation. The only outstanding task to add a list of abbreviations to comply with the new format for ITU-R Recommendations was completed at this WP 5A meeting based on the input contribution and WG5A‑4 s agreed to suggest to the WP 5A Plenary to finalize the revision and submit it to Study Group 5.

### 4.3.6 EESS (passive) studies in 6 425-7 125 MHz

Input document: [5A/409](https://www.itu.int/md/R19-WP5A-C-0409/en) (WP7C)

Output document: 5A/TEMP/178

WG5A-4 developed a reply liaison statement to WP 7C to provide the requested information.

### 4.3.7 Protection of land mobile systems (RR No. 21.16.6)

Input document: [5A/480](https://www.itu.int/md/R19-WP5A-C-0480/en) (WP4A)

Output document: 5A/TEMP/179

WG5A-4 developed a reply liaison statement to WP 4A to provide the requested information.

### 4.3.8 Range 92-109.5 GHz

Input document: [5A/451](https://www.itu.int/md/R19-WP5A-C-0451/en) (Japan)

Output document: 5A/TEMP/156

This draft new report had already been stable at the previous WP 5A meeting and the working document had been elevated to a preliminary draft new Report. After some final mostly editorial updates based on the input contribution, WG5A-4 s agreed to suggest to the WP 5A Plenary to finalize the report and submit it to Study Group 5.

### 4.3.9 Range 252-296 GHz

Input documents: [5A/386](https://www.itu.int/md/R19-WP5A-C-0386/en) (WPs 3J, 3K and 3M); [5A/452](https://www.itu.int/md/R19-WP5A-C-0452/en) (Japan); [5A/471](https://www.itu.int/md/R19-WP5A-C-0471/en) (Russian Federation); [487](https://www.itu.int/md/R19-WP5A-C-0487/en) (WP5C)

Output document: 5A/TEMP/153

WG5A-4 updated the working document based on the input contributions. Since document 5A/487 only arrived towards the end of the WP5A (from the WP5C meeting taking place in parallel), it was not possible to fully review and address the information from WP5C. It was therefore agreed to carry forward document 5A/487 to the next meeting of WP5A for further consideration and consequential updating of the working document. It was also suggested that the membership of WP5A could already take into account the information provided by WP5C when preparing input contributions to the next WP5A meeting on this topic.

### 4.3.10 Beam Wireless Power Transmission (WPT)

Input documents[: 5A/371](https://www.itu.int/md/R19-WP5A-C-0371/en) (WP1A); [5A/405](https://www.itu.int/md/R19-WP5A-C-0405/en) (WP7D); [5A/408](https://www.itu.int/md/R19-WP5A-C-0408/en) (WP7C[); 5A/483](https://www.itu.int/md/R19-WP5A-C-0483/en) (WP1A)

WG5A-4 took note of the information provided by WP7C and WP7D in Documents 5A/408 and 5A/405 respectively and agreed to carry forward documents 5A/371 and 5A/483 in order to consider the issue in more detail at the next WP 5A meeting and to possibly develop a reply to WP1A then.

### 4.3.11 WRC-23 agenda item 1.2

Input documents: [5A/15](https://www.itu.int/md/R19-WP5A-C-0015/en) (WP5D); [5A/206](https://www.itu.int/md/R19-WP5A-C-0206/en) (UAE)

WG5A-4 did not have further discussion on these specific documents.

### 4.3.12 WRC-23 agenda item 1.4

Input documents: [5A/373](https://www.itu.int/md/R19-WP5A-C-0373/en), [5A/414](https://www.itu.int/md/R19-WP5A-C-0414/en) (WP5D)

WG5A-4 took note of the information provided by WP5D and did not see the need for further action at this point in time.

### 4.3.13 WRC-23 agenda item 1.5

Input document: [5A/375](https://www.itu.int/md/R19-WP5A-C-0375/en) (Latvia)

Since the WP5A input to TG6/1 on WRC-23 agenda item 1.5 had already be sent from the previous WP5A meeting (in line with the deadline as set by CPM23-1), WG5A-4 agreed after consultation with the SG5 Counsellor to not forward this information to TG6/1 and instead the authors were informed by the BR about the situation, suggesting that they could submit this input directly to TG6/1 for consideration if they so wish.

### 4.3.14 WRC-23 agenda item 1.13

Input document: [5A/401](https://www.itu.int/md/R19-WP5A-C-0401/en) (WP7B)

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

### 4.3.15 WRC-23 agenda item 1.15

Input document: [5A/463](https://www.itu.int/md/R19-WP5A-C-0463/en) (WP4A)

Output document: 5A/TEMP/173

WG5A-4 developed a reply liaison statement to WP 4A to provide the requested information.

### 4.3.16 WRC-23 agenda item 1.18

Input document: [5A/390](https://www.itu.int/md/R19-WP5A-C-0390/en) (WP4C)

WG5A-4 took note of the information provided by WP 4C and did not see the need for further action at this point in time.

### 4.3.17 Resolution 731 (Rev.WRC-19)

Input documents: [5A/343](https://www.itu.int/md/R19-WP5A-C-0343/en) (WP7C); [5A/388](https://www.itu.int/md/R19-WP5A-C-0388/en) (WPs 3J, 3K and 3M); [5A/406](https://www.itu.int/md/R19-WP5A-C-0406/en) (WP7D); [5A/426](https://www.itu.int/md/R19-WP5A-C-0426/en) (Canada)

Output document: 5A/TEMP/157 (Working doc)

WG5A-4 updated the working document based on input contributions and also decided to carry forward Documents 5A/343, 5A/388 and 5A/406 to the next meeting of WP5A for further consideration. Input contributions to the next WP5A meeting are encouraged, in particular to address the questions raised in the liaison statements from the other Working Parties, in order to be able to provide the required feedback to those groups.

## 4.4 Revision of WP 5A texts

WG5A-4 did not have any comments on Section 1 of Annex 1 to Document 5A/221 and the Guide to the use of ITU-R texts relating to the land mobile service at this WP5A meeting and delegates were encouraged to communicate any comments on Section 1 of Annex 1 to Document 5A/221 directly to the WP5A Chairman.

## 4.5 Documents carried forward to the next meeting

– Range 252-296 GHz: [5A/487](https://www.itu.int/md/R19-WP5A-C-0487/en) (WP5C)

– Resolution **731 (Rev.WRC-19)**: [5A/343](https://www.itu.int/md/R19-WP5A-C-0343/en) (WP7C); [5A/388](https://www.itu.int/md/R19-WP5A-C-0388/en) (WPs 3J, 3K and 3M); [5A/406](https://www.itu.int/md/R19-WP5A-C-0406/en) (WP7D)

– Beam Wireless Power Transmission (WPT): [5A/371](https://www.itu.int/md/R19-WP5A-C-0371/en) (WP1A); [5A/483](https://www.itu.int/md/R19-WP5A-C-0483/en) (WP1A)

## 4.6 Objectives for the next WP 5A meeting

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

– continue work on the various working documents that are currently under development in WG5A-4;

– continue work in preparation of WRC-23 agenda item 1.3 as the lead group, including discussion on the possible overlap in the technical studies depending on the agreed parameters;

– consider how to respond to WPs 3J, 3K, 3M, 7C and 7D related to the ongoing study work in response to Resolution **731 (Rev.WRC-19)**.

## 4.7 Conclusion

The Chairman of WG5A-4 would like to thank all the WG5A-4 participants for their active contributions to the work of WG5A-4 and all the efforts put into the online and offline work to discuss and advance the many topics under the responsibility of WP5A-4 under these exceptional circumstances of the virtual WP5A meeting. In particular, I would like to thank the conveners of these offline discussions, as well as the Chairman of the SWG, Mr GUTIÉRREZ.

**Attachments:**

[Attachment 2](#att2): Meeting report of Sub-Working Group 5A-4 on WRC-23 agenda item 1.3.

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

Working Group 5A-5 met five times during the 26th meeting of ITU-R WP5A from 15 to 26 November 2021. The tasks assigned to WG5A-5 address new technologies.

Twenty-two input contributions and one information document were attributed to WG5A-5, which were:

|  |  |
| --- | --- |
|  | **Document 5A/…** |
| – Intelligent transport systems (ITS) (Q. 205-6/5, Q.261/5) | *General:* [INFO/3](https://www.itu.int/md/R19-WP5A-INF-0003/en) (CITS/IAA); [368](https://www.itu.int/md/R19-WP5A-C-0368/en) (ITU-T SG16); [396](https://www.itu.int/md/R19-WP5A-C-0396/en) (CCSA); [403](https://www.itu.int/md/R19-WP5A-C-0403/en) (CITS); [415](https://www.itu.int/md/R19-WP5A-C-0415/en) (WP5D); [421](https://www.itu.int/md/R19-WP5A-C-0421/en) (ETSI TC ITS)*CAV (*[*Question ITU-R 261/5*](https://www.itu.int/pub/R-QUE-SG05.261)*):* [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 24](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N24%21MSW-E.docx) (WP5A); [429](https://www.itu.int/md/R19-WP5A-C-0429/en) (USA); [440](https://www.itu.int/md/R19-WP5A-C-0440/en) (Korea); [446](https://www.itu.int/md/R19-WP5A-C-0446/en) (IAFI); [453](https://www.itu.int/md/R19-WP5A-C-0453/en) (Japan); [459](https://www.itu.int/md/R19-WP5A-C-0459/en) (5GAA); [473](https://www.itu.int/md/R19-WP5A-C-0473/en) (China); [475](https://www.itu.int/md/R19-WP5A-C-0475/en) (China); [477](https://www.itu.int/md/R19-WP5A-C-0477/en) (Germany); [479](https://www.itu.int/md/R19-WP5A-C-0479/en) (Qualcomm)*Rec.M.2121(*[*Question ITU-R 205-6/5*](https://www.itu.int/pub/R-QUE-SG05.205)*):* [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 25](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N25%21MSW-E.docx) (WP5A)*Rep.M.2444(*[*Question ITU-R 205-6/5*](https://www.itu.int/pub/R-QUE-SG05.205)*):* [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 26](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N26%21MSW-E.docx) (WP5A); [412](https://www.itu.int/md/R19-WP5A-C-0412/en) (CEPT) |
| – Above 275 GHz(Q.256-1/5) | *Rep. M.2417:* [359](https://www.itu.int/md/R19-WP5A-C-0359/en) [Annex 27](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N27%21MSW-E.docx) (WP5A); [454](https://www.itu.int/md/R19-WP5A-C-0454/en) (Japan) |
| – Machine Type Communications (MTC) | *General :* [374](https://www.itu.int/md/R19-WP5A-C-0374/en) (ITU-T SG20); [376](https://www.itu.int/md/R19-WP5A-C-0376/en) (ITU-T SG20); [411](https://www.itu.int/md/R19-WP5A-C-0411/en)(oneM2M); [419](https://www.itu.int/md/R19-WP5A-C-0419/en) (ITU-T SG20);*Rep. M.2479:* [476](https://www.itu.int/md/R19-WP5A-C-0476/en) (Germany) |

WG5A-5 established a Sub-working Group (SWG) to facilitate its work during WP5A virtual meeting:

|  |  |
| --- | --- |
| **SWG/DG (Chairperson/Editor)** | **Terms of Reference** |
| SWG5A5-1 ITS– CAV (Connected Automated Vehicles) (Mr. Satoshi Oyama, Japan/ Mr. Tom Schaffnit, U.S.A.) | * Develop a working document towards the revision of Report ITU-R M.2444,
* Review and update workplan for the revisions of Recommendation ITU-R M.2121 and Report ITU-R M.2444;
* Develop the working document towards a PDN Report ITU-R M.[CAV] on Connected Automated Vehicles (CAV);
* Review and update workplan for a Report ITU-R M.[CAV];
 |

The SWG activities were also carried out as a virtual meeting during the 26th meeting of WP 5A.

**5.1 Executive summary**

WG5A-5 initiated its work on the development of a working document towards the revision of Report ITU-R [M.2479-0](https://www.itu.int/pub/R-REP-M.2479) – T*he use of land mobile systems, excluding IMT, for machine-type communications*.

WG5A-5 developed a working document towards the revision of Report ITU-R [M.2417-0](https://www.itu.int/pub/R-REP-M.2417) - *Technical and operational characteristics of land-mobile service applications in the frequency range 275-450 GHz*, and upgraded its status to Preliminary Draft New Revision.

WG5A-5 created a working document towards a preliminary draft new report ITU-R M.[LMS.SPEC.NEED.ABOVE.275 GHz] – *Spectrum needs for land-mobile service applications in the frequency above 275 GHz*.

WG5A-5 continued to develop a working document towards a Preliminary Draft New Report ITU-R M.[CAV] - *Connected Automated Vehicles*.

WG5A-5 continued to develop a working document towards the revision of Report ITU-R [M.2444](https://www.itu.int/pub/R-REP-M.2444)‑0 - E*xamples of arrangements for Intelligent Transport Systems deployments under the mobile service*.

**5.2 Intelligent transport systems (ITS)**

WG5A‑5 considered ten input contributions and updated a working document towards a Preliminary draft new Report ITU-R M.[CAV] - *Connected Automated Vehicles* (Document 5A/TEMP/171R1). WG5A-5 also reviewed and updated its workplan for the development of a new Report ITU-R M.[CAV] (Document 5A/TEMP/172R1). The workplan is in [Attachment 4](#att4) to this annex.

WG5A-5 considered an input contribution (Document 5A/412) providing updated text for the revision of Report ITU-R [M.2444](https://www.itu.int/pub/R-REP-M.2444)‑0 - E*xamples of arrangements for Intelligent Transport Systems deployments under the mobile service*. Based on the contribution, WG5A-5 updated the working documents towards the draft revision of Report ITU-R  [[M.2444](https://www.itu.int/pub/R-REP-M.2444)‑0](https://www.itu.int/pub/R-REP-M.2444) (Document 5A/TEMP/164). With regards to the revision of Recommendation ITU-R [M.2121](https://www.itu.int/rec/R-REC-M.2121/en) - *Harmonization of frequency bands for Intelligent Transport Systems in the mobile service*, there was no input contribution to this WP 5A meeting. WG5A-5 carried forward Doc.5A/359 [Annex 25](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N25%21MSW-E.docx) to the next WP 5A meeting in May 2022. WG5A-5 reviewed and updated its work plan for the revisions of Recommendation ITU-R M.2121 and Report ITU-R M.2444 (Document 5A/TEMP/172R1). The workplan is in [Attachment 3](#att3) to this annex.

WG5A-5 considered an information document from IAA Mobility (Documents 5A/INFO/3) on CITS, providing “New perspectives in the city, Munich and the IAA”. WG5A-5 noted the information document.

WG5A-5 considered a liaison statement from ITU-T Study Group 16 (Document 5A/368) on its new work item on Draft Recommendation ITU-T F.VG-VMA “Architecture of Vehicular Multimedia systems”. WG5A-5 noted the liaison statements.

WG5A-5 considered a reply liaison statement from CCSA (Document 5A/396) on its on-going review of the revisions of Recommendation ITU-R M.2121 and Report ITU-R M.2444, as well as its on-going study of spectrum needs and coexistence compatibility on 5G NR-V2X. WG5A-5 noted the liaison statement.

WG5A-5 considered a liaison statement from ITU-T Collaboration on ITS Communication Standards (CITS), inviting input contributions from relevant standards developing organization (SDOs) (Document 5A/403). WG5A-5 noted the liaison statement.

WG5A-5 considered the liaison statement from WP 5D (Document 5A/415) on its PDN Report “The use of the terrestrial component of IMT for Cellular-Vehicle-to-Everything applications” and planned completion date. WG5A-5 noted the liaison statement at this time.

WG5A-5 considered a liaison statement from ETSI TC ITS (Document 5A/421) asking for feedback on Draft ETSI TR 102 638 Basic set of applications release 2, which provides an overview of a set of applications and associated use cases. WG5A-5 noted the liaison statement at this time.

**5.3 Technical and operational characteristics of the land mobile service in the frequency range above 275GHz**

WG5A-5 considered an input contribution. WG5A-5 established offline e-mail discussion on the revision of Report ITU-R M.2417 (convener: Dr Hiroyo Ogawa (J)). WG5A-5 updated the working document towards the revision of Report ITU-R M.2417 and finally upgraded its status to Preliminary Draft Revision (Document 5A/TEMP/162R1). During the offline e-mail discussion, a proposed chapter on spectrum needs was split out and moved into a new separate working document towards a preliminary draft new report ITU-R M.[LMS.SPEC.NEED.ABOVE.275 GHz] – *Spectrum needs for land-mobile service applications in the frequency above 275 GHz* (Document 5A/TEMP/163R1).The workplan for the revision of M.2417 is in [Attachment 5](#att5) to this annex.

**5.4 Machine-Type Communications (MTC)**

WG5A-5 considered an input contribution on the revision of Report ITU-R M.2479-0. WG5A-5 developed a working document towards the preliminary draft revision of Report ITU-R M.2479-0 (Document 5A/TEMP/168R1). WG5A-5 also initiated its work on the revision and developed a workplan ([Attachment 6](#att6) to this annex).

During the WG5A-5 meeting, the view was expressed that the duplicate work should be avoided between WP5A (private networks using land mobile technologies) and WP5D (IMT). Further input contributions are invited on this issue to the next WP5A meeting in May 2022.

WG5A-5 considered three liaison statements from ITU-T Study Group 20 and oneM2M (Documents 5A/374, 376 and 411) on defined term of “application layer”, which was commented in a liaison statement from WP5A in the previous study cycle. As a conclusion, oneM2M informed WP5A of that oneM2M defined the term “IoT Application layer” instead of the general term of “application layer”. WG5A-5 noted the liaison statements.

WG5A-5 considered a liaison statement (Document 5A/419) from ITU-T Study Group 20 on the establishment of a new ITU-T Focus Group on “Artificial Intelligence (AI) and Internet of Things (IoT) for Digital Agriculture” (FG-AI4A). WG5A-5 noted the liaison statement.

**5.5 Review of ITU-R texts**

WG 5A-5 reviewed ITU-R texts pertinent to WG 5A-5 in Section 1 of [Annex 1 of Doc. 5A/359](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N01%21MSW-E.docx) and review it with regard to WG5A-5 related ITU-R texts. The suggestion made at the previous WP 5A meeting was reminded that very old Recommendations, such as Recommendation ITU-R M.1307, should further be reviewed with a view to supressing them. Particularly, ADL system described in Appendices 1, 2 and 3 in Recommendation ITU-R M.1307 should be reviewed by USA, UK and Japan, in which the systems are used. WG5A-5 invited again input contributions to the next WP5A meetings on the supress of old ITU-R Recommendations and Reports.

WG5A-5 also reviewed the guide to the use of ITU-R texts relating to Land Mobile Systems. There was no suggested modification to the texts. WG5A-5 invites input contributions to the future meetings.

**5.6 Future work**

WG5A-5 continues to develop a working document towards a PDN Report ITU-R M.[CAV] of *Connected Automated Vehicles*.

WG5A-5 continues to develop a working document towards a PDN revision of Recommendation ITU-R M.2121 of *Harmonization of frequency bands for Intelligent Transport Systems in the mobile service*.

WG5A-5 continues to develop a working document towards a PDN revision of Report ITU-R M.2444 of E*xamples of arrangements for Intelligent Transport Systems deployments under the mobile service*.

WG5A-5 continues to develop preliminary draft revision of Report ITU-R M.2417 of *Technical and operational characteristics of land-mobile service applications in the frequency range 275‑450 GHz*.

WG5A-5 initiates its work on the development of a new working document towards a preliminary draft new Report ITU-R M.[LMS.SPEC.NEED.ABOVE.275 GHz] – *Spectrum needs for land-mobile service applications in the frequency above 275 GHz, by developing its workplan and updating the working document.*

WG5A-5 continues to develop a working document towards the preliminary draft revision of Report ITU-R M.2479-0 – T*he use of land mobile systems, excluding IMT, for machine-type communications*.

Finally, WG5A-5 Chairman would like to thank Sub-Working Group Chairperson Mr. Satoshi Oyama (J), Editor Mr. Tom Schaffnit (USA), Convener Dr. Hiroyo Ogawa (J) for their excellent work, and all participants for their contribution to work of the group.

**Attachments:**

[Attachment 3](#att3): Work plan for the development of draft revisions of Recommendation ITU-R M.2121 and Report ITU‑R M.2444 on Intelligent Transport Systems.

[Attachment 4](#att4): Work plan for the development of a draft new Report ITU-R M.[CAV] – “Connected Automated Vehicles”.

[Attachment 5](#att5): Work plan for the development of a working document towards a draft revision of Report ITU-R M.2417-0 – “Technical and operational characteristics of land-mobile service applications in the frequency range 275-450 GHz.

[Attachment 6](#att6): Work plan for the development of a working document towards a draft revision of Report ITU-R M.2479-0 – “The use of land mobile systems, excluding IMT, for machine-type communications.

# 6 Ad Hoc Working Group 5A/5C – WRC-23 Topic 9.1c (Chairman: Ms Christine Di Lapi, USA)

**6.1 Executive Summary**

Ad Hoc WG5A/5C (Topic 9.1.c)) met three times at the November 2021 meeting of Working Parties (WPs) 5A and 5C. Eight input contributions submitted to the 26th meeting of WPs 5A/5C were introduced. These, along with seven submitted to the last meeting and which were carried forward, were also considered.

The objectives for this meeting as indicated in the work plan (Doc. [5A/359](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N09%21MSW-E.docx), Annex 9) for this WRC-23 topic:

– continue to progress the development of ITU-R documentation related to this topic;

– continue the development of a summary of activities for inclusion in the draft CPM text.

After introduction of the inputs to the 26th meeting, an off-line activity was conducted to attempt to reach a common understanding on the use of the “IMT System” and “FWB” terms in Resolution **175 (WRC-19)**. At the conclusion of the offline activity a discussion was undertaken to determine a path or way forward for the May 2022 meeting, which will likely be the last meeting at which draft CPM text for this topic can be developed by WPs 5A/5C.

**6.2 Organization of the work**

Input contributions received at the May/June (25th) and November 2021 (26th) meetings of WPs 5A/5C have been organized according to the following table. Additionally, an Annex from an earlier meeting (July 2020) and an ITU-R Rec. were included as they were perceived to be relevant to the discussion surrounding some of the terms in Res. **175 (WRC-19)**.

|  |  |
| --- | --- |
| Draft CPM text | 5A/[359](https://www.itu.int/md/R19-WP5A-C-0359/en) ([Annex 8](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0359%21N08%21MSW-E.docx)) (WP5A); [418](https://www.itu.int/md/R19-WP5A-C-0418/en) (UK/CEPT PTA); [472](https://www.itu.int/md/R19-WP5A-C-0472/en) (Russian Federation) |
| Work plan | [431](https://www.itu.int/md/R19-WP5A-C-0431/en) Appendix III (USA); [273](https://www.itu.int/md/R19-WP5A-C-0273/en) (IAFI); [321](https://www.itu.int/md/R19-WP5A-C-0321/en) [Att.4](https://www.itu.int/dms_ties/itu-r/md/19/wp5a/c/R19-WP5A-C-0321%21P04%21MSW-E.docx) (UK/CEPT PT A) |
| CG Activity/scope of FWB term | [418](https://www.itu.int/md/R19-WP5A-C-0418/en) (UK/CEPT PTA); [422](https://www.itu.int/md/R19-WP5A-C-0422/en) (CG Chairman); [431](https://www.itu.int/md/R19-WP5A-C-0431/en) (USA); [445](https://www.itu.int/md/R19-WP5A-C-0445/en) (IAFI); [458](https://www.itu.int/md/R19-WP5A-C-0458/en) (South Africa); [469](https://www.itu.int/md/R19-WP5A-C-0469/en) (Egypt); [472](https://www.itu.int/md/R19-WP5A-C-0472/en) (Russian Federation); [478](https://www.itu.int/md/R19-WP5A-C-0478/en) (Saudi Arabia, UAE) |
| “IMT Systems” from Res. 175 (WRC-19) | 85 Annex 8(WP 5A); [418](https://www.itu.int/md/R19-WP5A-C-0418/en) (UK/CEPT PTA); [445](https://www.itu.int/md/R19-WP5A-C-0445/en) (IAFI); [458](https://www.itu.int/md/R19-WP5A-C-0458/en) (South Africa); [472](https://www.itu.int/md/R19-WP5A-C-0472/en) (Russian Federation); Rec. ITU-R F.1763-1 |
| Rec. ITU-R F.1401-1 | [321](https://www.itu.int/md/R19-WP5A-C-0321/en) [Att.2](https://www.itu.int/dms_ties/itu-r/md/19/wp5a/c/R19-WP5A-C-0321%21P02%21MSW-E.docx) (UK/CEPT PT A); [431](https://www.itu.int/md/R19-WP5A-C-0431/en) Appendix II, Att. 2 (USA) |
| Rec. ITU-R F.1490-1 | [431](https://www.itu.int/md/R19-WP5A-C-0431/en) Appendix II, Att. 1 (USA) |
| Rec. ITU-R F.1763-1 | [307](https://www.itu.int/md/R19-WP5A-C-0307/en) (China); [431](https://www.itu.int/md/R19-WP5A-C-0431/en) Appendix II, Att. 3 (USA) |
| Question ITU-R 215-4/5 | [431](https://www.itu.int/md/R19-WP5A-C-0431/en) Appendix I (USA) |
| New Report / Rec. | [221](https://www.itu.int/md/R19-WP5A-C-0221/en) ([Annex 18](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0221%21N18%21MSW-E.docx)) (WP5A); [271](https://www.itu.int/md/R19-WP5A-C-0271/en) (USA); [321](https://www.itu.int/md/R19-WP5A-C-0321/en) [Att.3](https://www.itu.int/dms_ties/itu-r/md/19/wp5a/c/R19-WP5A-C-0321%21P03%21MSW-E.docx) (UK/CEPT PTA); [329](https://www.itu.int/md/R19-WP5A-C-0329/en) (Egypt); [336](https://www.itu.int/md/R19-WP5A-C-0336/en) (UAE) |
| Working document/Misc. | [418](https://www.itu.int/md/R19-WP5A-C-0418/en) (UK/CEPT PT A); [422](https://www.itu.int/md/R19-WP5A-C-0422/en) (CG Chairman); [431](https://www.itu.int/md/R19-WP5A-C-0431/en) (USA); [445](https://www.itu.int/md/R19-WP5A-C-0445/en) (IAFI); [458](https://www.itu.int/md/R19-WP5A-C-0458/en) (South Africa); [469](https://www.itu.int/md/R19-WP5A-C-0469/en) (Egypt); [472](https://www.itu.int/md/R19-WP5A-C-0472/en) (Russian Federation); [478](https://www.itu.int/md/R19-WP5A-C-0478/en) (Saudi Arabia, UAE)[221](https://www.itu.int/md/R19-WP5A-C-0221/en) ([Annex 18](https://www.itu.int/dms_pub/itu-r/md/19/wp5a/c/R19-WP5A-C-0221%21N18%21MSW-E.docx)) (WP5A); [271](https://www.itu.int/md/R19-WP5A-C-0271/en) (USA); [321](https://www.itu.int/md/R19-WP5A-C-0321/en) [Att.3](https://www.itu.int/dms_ties/itu-r/md/19/wp5a/c/R19-WP5A-C-0321%21P03%21MSW-E.docx) (UK/CEPT PTA); [329](https://www.itu.int/md/R19-WP5A-C-0329/en) (Egypt); [336](https://www.itu.int/md/R19-WP5A-C-0336/en) (UAE) |

**6.3 Execution of work**

After introduction of the 26th meeting inputs, an offline activity was convened to undertake further discussion of the terms “IMT System” and “FWB” (Fixed Wireless Broadband) in Resolution **175 (WRC-19)**, “Use of International Mobile Telecommunications systems for fixed wireless broadband in the frequency bands allocated to the fixed service on a primary basis”.

**6.3.1 Offline Activity Related to WRC-23 Agenda item 9.1, topic c), “FWB” and “IMT System” terms in Res. 175(WRC-19)**

Differing interpretations of both the “IMT System” and “FWB” terms in Resolution **175 (WRC-19)** have been ongoing, in contributions received at both the May/June and November 2021 meetings. The objective was to reach a common understanding of both terms. Source material included most input contributions to this topic at the 25th and 26th meetings, along with others of potential utility to this activity, including Doc. 5A/85, Annex 8, and Rec. ITU-R F.1763-1.

The below table lists those sections of input contributions and other documentation, such as ITU-R Recommendations, that were used as a baseline or reference for the offline activity.

| **Document No. (5A/ ) or Document Reference** | **“IMT System” Term in Res. 175 (WRC-19)** | **“FWB” Term in Res. 175 (WRC-19)** |
| --- | --- | --- |
| [19](https://www.itu.int/md/R19-WP5A-C-0019/en), WPs 5A and 5C Chairmen |  | pp 1-2, §1 |
| [85](https://www.itu.int/md/R19-WP5A-C-0085/en), Annex 9: work plan/Report for WRC-23 agenda item 9.1 topic C 923rd Meeting Report) | 23rd Meeting Activity Summary |  |
| [221](https://www.itu.int/md/R19-WP5A-C-0221/en), Annex 18 (24th Meeting Report Annex) |  | Annex 1 to Annex 18, §2 |
| [307](https://www.itu.int/md/R19-WP5A-C-0307/en) (China) | *Recognizings* of ITU-R F.1763-1 in the Attachment |  |
| [321](https://www.itu.int/md/R19-WP5A-C-0321/en) (UK/CEPT) |  | Page 2, Annex to Attachment 1 |
| [329](https://www.itu.int/md/R19-WP5A-C-0329/en) (Egypt) |  | Annex 1 |
| [336](https://www.itu.int/md/R19-WP5A-C-0336/en) (UAE) |  | Attachment 1 |
| [418](https://www.itu.int/md/R19-WP5A-C-0418/en) UK/CEPT | Attachment 1 |  |
| [422](https://www.itu.int/md/R19-WP5A-C-0422/en) CG Chairman |  | Report of CG discussion of FWB term |
| [431](https://www.itu.int/md/R19-WP5A-C-0431/en) USA |  | Page 3, §1.2 |
| [445](https://www.itu.int/md/R19-WP5A-C-0445/en) (IAFI) | Attachment Page 2-3 & *Considering* 1 of Rec. ITU-R M.2150 | Attachment (page 2-3) |
| [458](https://www.itu.int/md/R19-WP5A-C-0458/en) (RSA) | Bottom page 1, “Proposal” section |  |
| [469](https://www.itu.int/md/R19-WP5A-C-0469/en) (Egypt) | Attachment 2 | Attachment 2 |
| [472](https://www.itu.int/md/R19-WP5A-C-0472/en) (Russian Federation) | Page 2 |  |
| [478](https://www.itu.int/md/R19-WP5A-C-0478/en) (Kingdom Saudi Arabia, UAE) | “Proposal” section | Page 2, “Proposal” section |
| Rec. ITU-R F.1763-1, Radio interface standards for broadband wireless access systems in the fixed service operating below 66 GHz | *Recognizings* *d)* through *h)* |  |
| Land Mobile (including Wireless Access) - Volume 2: Principles and Approaches on Evolution to IMT-2000/FPLMTS | §9.1 |  |
| Rec. ITU-R M.1308, Evolution of land mobile systems towards IMT-2000 | §2 |  |

*Discussion regarding the “IMT System” Term in Res.* ***175 (WRC-19)***

With regards to the use of the term “IMT System” in Res. **175 (WRC-19)**, references in some ITU‑R Recommendations can help to provide clarification. In Rec. ITU-R M.1308, Evolution of land mobile systems towards IMT-2000, the definitions of technology and system are given as follows:

 Technology: A scientific method of achieving a practical purpose.

 System: A regularly interacting or interdependent group of items forming a unified whole technology.

It was also noted during the offline activity that the provisions in Rec. ITU-R F.1763-1 refer to the IMT terrestrial radio interface standards in several M-Series Recommendations that can be used to provide broadband FWA.

Likewise, WRC-23 topic 9.1 c) can be considered in terms of reusing the relevant IMT technologies to form a Fixed Wireless Broadband (FWB) system. For example, the technologies that support mobility would be either not present or disabled in the FWB system (or IMT system applications for FWB) to comply with the regulatory requirements of operating in the fixed service, where all the stations are fixed.

*Discussion Regarding the “FWB” Term in Resolution* ***175 (WRC-19)***

Since the 24th meeting of WPs 5A/5C there has been an ongoing discussion over the scope of the term “Fixed Wireless Broadband” (FWB) in Res. **175 (WRC-19)**, and if this WRC-23 topic includes fixed backhaul and transport applications, or if it only regards fixed wireless access (FWA). The difficulty is that FWA is well defined in the ITU-R, in at least a couple of Recommendations, along with the term Fixed Wireless System in Rec. ITU-R F.592, while FWB as a separate term is not currently defined in any ITU publication. While the online CG activity on the understanding of the FWB term that took place in between the 25th and 26th meetings concluded that the focus of studies for WRC-23 topic 9.1 c) should be on fixed wireless applications (see Doc. 5A/422), a disagreement over whether the use of IMT systems for backhaul and transport are part of this WRC-23 topic remains at the end of the 26th meeting.

**6.4 Conclusion and Future Work**

The final, third session of Ad Hoc WG5A/5C (Topic 9.1.c)) reviewed the results of the offline activity regarding the use of the “IMT System” and “FWB” terms in Res. **175 (WRC-19)**. The outcome of this offline activity also indicated to many of the delegates that a continuing discussion of the meaning of the above-mentioned terms, which had started back in 2020 and has not advanced at all, is not productive so an alternative path or course of work should be recommended.

One way forward is that components, standards or technologies of IMT systems that comply with the regulatory criteria for operation in the fixed service can be considered for FWB systems in the context of Resolution **175 (WRC-19)**, which directs the ITU-R to do studies solely within the existing regulatory framework. As this activity is contribution driven, participants are encouraged to submit studies to help clarify the range or type of fixed wireless systems, from access to transport to backhaul, which can implement elements of IMT technology and standards in a fixed operating environment.

As the likely deadline for the completion of a draft CPM text element for this topic will be at the May 2022 meeting, it is important for contributions to be submitted that will advance the understanding of this topic, taking into account the *resolves* of Res. **175 (WRC-19)**. Contributions received to this topic from both the May/June and November 2021 meetings are to be carried forward to the May 2022 meeting.

Attachment 1 to Annex 3

*Source: Document 5A/TEMP/166R1*

WORKPLAN FOR COMPLETION OF THE WORK ON RSTT
UNDER RESOLUTION 240 (WRC-19)

*[Note: The work plan is a living document and contains planned objectives, which are subject to review and updates at each WP5A meeting as necessary. Further, the progress of the work is, as usual in ITU-R, subject to agreement within WP5A.]*

| **Meetings** | **Work plan** |
| --- | --- |
| 25th meetingApril 2021 | 1 Develop and adopt a work plan on RSTT under Resolution **240 (WRC-19)**2 Finalize the development of the working document towards PDN Question ITU-R [RSTT]/5, elevate it to draft new Question ITU-R [RSTT]/5 and submit it to Study Group 5 (December 2021 meeting) for approval3 Continue developing the working document toward a PDN Recommendation ITU-R M.[RSTT\_FRQ] 4 Draft relevant liaison statement(s) if needed |
| 26th meetingNov. 2021 | 1 Consider any input contribution(s);2 Continue developing the working document towards a preliminary draft new Recommendation ITU-R M.[RSTT\_FRQ];3 Review and revise the work plan if needed. |
| 27th meetingMay 2022 | 1 Consider any input contribution(s);2 Take note of approved new study Question ITU-R [RSTT]/5;3 Continue developing working document towards preliminary draft new Recommendation ITU-R M.[RSTT\_FRQ] and, if appropriate, consider its elevation to preliminary draft new Recommendation ITU-R M.[RSTT\_FRQ];4 Draft relevant liaison statement(s), if needed;5 Review and revise the work plan if needed. |
| 28th meetingNov. 2022 | 1 Consider any input contribution(s);2 Finalize preliminary draft new Recommendation ITU-R M.[RSTT\_FRQ], if appropriate, consider its elevation to draft new Recommendation for submission to SG 5 (November 2022 meeting) for approval;3 Draft relevant liaison statement(s), if needed. |

Attachment 2 to Annex 3

*Source: Document 5A/TEMP/181*

Meeting Report of Sub-working Group 5A-4
on WRC-23 Agenda Item 1.3

To consider primary allocation of the band 3 600-3 800 MHz to mobile service within Region 1 and take appropriate regulatory actions, in accordance with Resolution 246 (WRC-19);

# A2.1 Introduction

The Sub-Working Group (SWG) on WRC-23 agenda item (AI) 1.3 had its third meeting during the 26th meeting of Working Party 5A (WP5A). The SWG was assigned 14 new input documents, 15 documents carried forward from the last meeting of WP5A, and 3 working documents attached to the chairman´s report of the last WP5A meeting.

The SWG met 12 times:

|  |  |
| --- | --- |
| Tuesday, 16 November, Session 2Wednesday, 17 November, Session 2Wednesday, 17 November, Session 3Thursday, 18 November, Session 2Thursday, 18 November, Session 3Friday, 19 November, Session 3 | Monday, 22 November, Session 1 Monday, 22 November, Session 2 Monday, 22 November, Session 3 Tuesday, 23 November, Session 1 Tuesday, 23 November, Session 3Wednesday, 24 November, Session 1 |

# A2.2 Incoming liaison statements

The SWG considered five new incoming liaison statements (LSs): Documents 5A/[384](https://www.itu.int/md/R19-WP5A-C-0384/en) (WP 3K and 3M), 5A/[395](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R19-WP5A-C-0395) (WP 4A), 5A/[394](https://www.itu.int/md/R19-WP5A-C-0394/en) (WP 4A), 5A/[416](https://www.itu.int/md/R19-WP5A-C-0416/en) (WP 5D) and 5A/[378](https://www.itu.int/md/R19-WP5A-C-0378/en) (WP 5D). It also considered the LSs in Documents 5A/[88](https://www.itu.int/md/R19-WP5A-C-0088/en) (WP 5B), 5A/[233](https://www.itu.int/md/R19-WP5A-C-0233/en) (WP 5C) which were carried forward from last meeting.

Documents 5A/88, 5A/233 and 5A/395 and 5A/378 contain technical and operational parameters for radiolocation systems, FS, FSS and IMT, to be used in the sharing studies. Document 5A/384 contains guidance on propagation models. The SWG agreed to use the material in these documents for the studies and to have references to these documents in its Working Document on sharing studies.

The SWG also considered the LSs in Documents 5A/[394](https://www.itu.int/md/R19-WP5A-C-0394/en) (WP 4A) and 5A/[416](https://www.itu.int/md/R19-WP5A-C-0416/en) (WP 5D). These were noted.

# A2.3 Technical and operational characteristics of systems

The SWG considered Annex 18 to the Chairman´s Report in Document 5A/[359](https://www.itu.int/md/R19-WP5A-C-0359/en). This annex contains technical characteristics of mobile systems. It is based on the inputs to the last meeting in Documents 5A/[322](https://www.itu.int/md/R19-WP5A-C-0322/en) (Germany), 5A/[298](https://www.itu.int/md/R19-WP5A-C-0298/en) (Sweden, Finland) and 5A/[333](https://www.itu.int/md/R19-WP5A-C-0333/en) (Egypt, UAE). Since the content of these 3 documents is now captured in Annex 18, these 3 documents – which had also been carried forward – were noted.

The information on IMT systems in the LS in Document [5A/378](https://www.itu.int/md/R19-WP5A-C-0378/en) from WP 5D updates the technical characteristics of mobile systems in some of the scenarios in Annex 18, and so the SWG looked at how to reflect the information in Document 5A/378 in the compilation document. The group held an offline email discussion for this. Unfortunately, the group could not agree on a way to combine the information from two sources. The point of disagreement was the rural scenario for deployment of mobile services. While some participants considered that rural deployments are very unlikely in this band and hence should not be studied, other participants argued that the rural scenario should be listed at least as an optional scenario. No agreement could be reached and the document in Annex 18 was not updated.

Document 5A/[444](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R19-WP5A-C-0444) (Ghana, Guinea, Niger) was presented. This document proposes a protection criterion for the studies of adjacent band coexistence between FSS and Mobile. Some members supported to use the criterion in the document for the studies under AI 1.3. Others did not agree to this, arguing that WP 4A is the expert group on this subject and that it had discussed the issue extensively at its last meeting without reaching a conclusion. As a result, the proposal was not agreed.

# A2.4 Sharing studies

Two documents with sharing studies were presented: 5A/[443](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R19-WP5A-C-0443)(Burkina, Faso, Côte d’Ivoire, Ghana, Guinea, Mali, Niger, Togo) and 5A/[457](https://www.itu.int/md/R19-WP5A-C-0457/en) (Nigeria, South Africa, Zimbabwe). Many participants noted that they had numerous questions about these studies. The group agreed to an offline email discussion to collect questions about the studies, and to get the responses from the proponents. The offline discussion ran for one week with many questions raised and responded. A compilation document with all questions/responses, “Offline discussion on sharing studies V2”, is available in Sharepoint for benefit of participants and in particular to help proponents of Documents 5A/443 and 5A/457 revise and complete these studies for the next meeting.

# A2.5 Working document for the sharing and compatibility studies

Document 5A/[455](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R19-WP5A-C-0455) (Nigeria, South Africa, Zimbabwe) proposes a template for the working document, to be used to collect studies and other material under the agenda item. In addition, the group also considered Documents 5A/[190](https://www.itu.int/md/R19-WP5A-C-0190/en) (China), 5A/[204](https://www.itu.int/md/R19-WP5A-C-0204/en) (Ericsson, Huawei, Intel, Nokia, Samsung), 5A/[313](https://www.itu.int/md/R19-WP5A-C-0313/en) (South Africa, Zimbabwe), 5A/[332](https://www.itu.int/md/R19-WP5A-C-0332/en) (Egypt, UAE) and 5A/[301](https://www.itu.int/md/R19-WP5A-C-0301/en) (China) which were carried forward from the last meeting. Since Document 5A/455 captures all the material in Documents 5A/190, 5A/204, 5A/313 and 5A/332, these four documents were noted.

Document 5A/301 from China contains a review of existing ITU deliverables relevant to the scope of AI 1.3. This review is in response to the task to analyse existing ITU-R Reports and/or Recommendations, something the SWG had agreed to conduct. It was agreed to add the content of Document 5A/301 to the template for the working document presented in Document 5A/455, although it was noted that some of the text would need to be updated.

Document 5A/[74](https://www.itu.int/md/R19-WP5A-C-0074/en) (ESOA) is another carry forward from last meeting. A proposal was made offline to incorporate certain elements from this document into the working document, as well as consideration of adjacent bands.

The group considered a first version of the working document with Document 5A/455 as basis and incorporating material from Document 5A/301 and the offline proposal. A long discussion took place on if and how should the rural scenario be captured in the working document. No agreement was reached on this, and hence the working document contains two alternatives for section 6.2 on deployment scenarios. It was agreed to submit the document to WG4 for attachment to the chairman´s report.

# A2.6 Draft CPM text

Four contributions with draft CPM text proposals were presented: 5A/[441](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R19-WP5A-C-0441) (Uzbekistan)[, 5A/464](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R19-WP5A-C-0464)(France, Germany), 5A/[467](https://www.itu.int/md/R19-WP5A-C-0467/en) (GSMA) and 5A/[468](https://www.itu.int/md/R19-WP5A-C-0468/en) (Egypt, UAE). In addition, the group considered the existing draft of the CPM text in Annex 4 of the Chairman´s Report, and Documents 5A/[328](https://www.itu.int/md/R19-WP5A-C-0328/en) (ESOA) and 5A/[331](https://www.itu.int/md/R19-WP5A-C-0331/en) (Egypt, UAE) which were carried forward from the last meeting.

A compilation document, that incorporated all these text proposals into the existing draft, was produced and presented. Unfortunately, the group spent several meeting sessions discussing the text for the Background section and did not have the opportunity to look at the rest of the text proposals. Furthermore, there were two additional text proposals that attempted to reach a compromise on the Background section, to no avail. Ultimately, the group agreed on one paragraph and four alternative proposals for the following paragraph of the Background, to be discussed at the next meeting. All the other text proposals remain in the compilation document but to be discussed in the next meeting as well. It was agreed to keep the compilation document as an attachment to the Chairman´s Report.

# A2.7 Work methods and workplan

Document 5A/[456](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R19-WP5A-C-0456) (Nigeria, South Africa, Zimbabwe) introduced a proposal to carry out work on this agenda item by correspondence until the next meeting of WP5A, and to have an additional physical meeting before the CPM text deadline. This is motivated by the little time left – one meeting in May only – to complete the work.

A draft of the Terms of Reference of a possible Correspondence Group was introduced for comments, noting that approval of a CG would take place at the WP5A plenary. Some Members supported the creation of the CG. There was also objection to the CG, unless it could be ensured that it would work efficiently and the long and fruitless discussion of this meeting would not be reproduced. The draft ToR would be submitted to WG4 for further consideration, with amendments to account for the comments made.

The workplan in Annex 5 of the chairman´s report was introduced with updates. It was further amended to account for the fact that the next meeting of WP5A would normally be the last before the CPM deadline, and hence the work under AI 1.3 should focus on the CPM text. The revised workplan should be attached to the Chairman´s Report.

# A2.8 Outputs

The SWG did not agree to carry forward any contribution from this meeting.

The following documents were agreed to be forwarded to WG4 for attachment to the Chairman´s Report:

- Working document for sharing studies (5A/TEMP/184)

- Draft CPM text (5A/TEMP/180)

Attachment 3 to Annex 3

*Source: Document 5A/TEMP/172R1*

WOrk plan For THE DRAFT Revisions of
Recommendation ITU-R M.2121 and Report ITU-R M.2444
on intelligent transport systems

|  |  |
| --- | --- |
| **Title** | Work plan for Revisions of Recommendation ITU-R M.2121 and Report ITU-R M.2444 |
| **Document type** | Recommendation and Report |
| **WP5A Lead Group** | WG5 New Technologies  |
| **SWG Chairman** | Mr. Satoshi (Sam) Oyama; **E-mail**: s-oyama@arib.or.jp |
| **Editor** | Mr. Tom Schaffnit; **E-mail**: Tom.Schaffnit@dot.gov  |
| **Focus for scope and work** | These revisions are to update existing Recommendation ITU-R M.2121 and Report ITU-R M.2444 |
| **Related Documents** | Question ITU-R 205/5 –Intelligent Transport SystemsQuestion ITU-R 261/5 – Connected Automated Vehicles |
| **Milestones** | **25th meeting (April/May 2021)** * Develop and adopt work plan
* Develop working documents toward PD Revisions of Recommendation and Report
* Liaise if needed with concerned WPs and interested organizations on revising the Recommendation ITU-R M.2121 and Report ITU-R M.2444

**26th meeting (November 2021)*** Continue developing working documents toward PD revisions of Recommendation and Report
* Update work plan if needed

**27th meeting (May 2022)*** Develop the PD revisions of Recommendation and Report
* Liaise if needed with concerned and interested organizations on development of PD revisions of Recommendation and Report

**28th meeting (November 2022)*** Finalize revisions of Recommendation and Report.
* Submit them to WP5A for adoption and to SG5 for adoption/approval.
 |

Attachment 4 to Annex 3

*Source: Document 5A/TEMP/172R1*

WORK PLAN FOR THE DEVELOPMENT OF A DRAFT NEW REPORT ITU-R M.[CAV]

Connected Automated Vehicles

|  |  |
| --- | --- |
| **Title** | Work plan for the development of a new Report ITU-R M.[CAV] on the Connected Automated Vehicles |
| **Document type** | Report |
| **WP5A Lead Group** | WG5 New Technologies  |
| **SWG Chairman** | Mr. Satoshi (Sam) Oyama; **E-mail**: s-oyama@arib.or.jp |
| **Editor** | Mr. Tom Schaffnit; **E-mail**: Tom.Schaffnit@dot.gov |
| **Focus for scope and work** | This report addresses overall objectives and radiocommunication requirements for CAVs, including the consideration of global or regional harmonization of frequency spectrum for CAVs. |
| **Related Documents** | Recommendation 208 (WRC-19), Question ITU-R 261/5, Recommendation ITU-R M.2121, Report ITU-R M.2444 and ITU-R M.2445 |
| **Milestones** | **23rd meeting (July 2020)- virtual meeting** – Develop and adopt work plan– Liaise as needed with concerned and interested organizations on development of the PDN Report– Carry forward the framework of working document toward a PDN Report **24th meeting (November 2020) - virtual meeting**– Develop working document toward a PDN Report– Liaise as needed with concerned and interested organizations on development of the PDN Report– Update work plan as needed.**25th meeting (May 2021) – virtual meeting**– Continue developing working document toward a PDN Report– Liaise as needed with concerned and interested organizations on development of the PDN Report– Update work plan as needed**26th meeting (November 2021)**– Continue developing working document toward a PDN Report– Liaise as needed with concerned and interested organizations on development of the PDN Report– Update work plan as needed |
|  | **27th meeting (May 2022)**– Developing a PDN Report– Liaise as needed with concerned and interested organizations on development of the PDN Report– Update work plan as needed **28th meeting (November 2022)**– Finalize Report and submit to WP5A for adoption and to SG5 for approval |

Attachment 5 to Annex 3

*Source: Document 5A/TEMP/194*

WORK PLAN FOR THE DEVELOPMENT OF A WORKING DOCUMENT TOWARDS A DRAFT REVISION OF REPORT ITU-R M.2417-0

**Technical and operational characteristics of land-mobile service applications in the frequency range 275-450 GHz**

|  |  |
| --- | --- |
| **Title** | Technical and operational characteristics of land-mobile service applications in the frequency range 275-450 GHz |
| **Document type** | Report |
| **WP 5A Lead Group** | WG5 New Technologies  |
| **WG Chairman** | Mr. Hitoshi Yoshino; **E-mail:** hitoshi.yoshino@g.softbank.co.jp |
| **Editor** | [t.b.d.] **E-mail:** [xxxxxxx] |
| **Focus for scope and work** | This report addresses Technical and operational characteristics of land-mobile service applications in the frequency range 275-450 GHz. |
| **Related Documents** | Question ITU-R 256-1/5 |
| **Milestones** | **23rd meeting (July 2020)- virtual-meeting** –– – Develop working document toward the revision of ITU-R Report M.2417-0**24th meeting (November 2020) – virtual meeting**– Develop working document toward the revision of ITU-R Report M.2417-0– Develop and adopt work plan.**25th meeting (May 2021) – virtual meeting**– Develop working document toward the revision of ITU-R Report M.2417-0– Liaise as needed with concerned and interested organizations on development of the PD Revision of Report– Update work plan if needed**26th meeting (November 2021)**– Continue developing working document toward the revision of ITU-R Report M.2417-0– Liaise as needed with concerned and interested organizations on development of the PD Revision of Report– Update work plan if needed**27th meeting (May 2022)**– Continue developing preliminary draft revision of ITU-R Report M.2417-0– Liaise as needed with concerned and interested organizations on development of the PD Revision of Report– Update work plan if needed **28th meeting (November 2022)**– Finalize Report and submit to WP5A for adoption and to SG 5 for approval |

Attachment 6 to Annex 3

*Source: Document 5A/TEMP/194*

WORK PLAN FOR THE DEVELOPMENT OF A WORKING DOCUMENT TOWARDS A DRAFT REVISION OF REPORT ITU-R M.2479-0

The use of land mobile systems, excluding IMT, for machine-type communications

{Note: The finalization date is of indicative nature as it will depend on the progress of work and the extent of any possible contributions. This workplan may therefore be adjusted at each meeting. Furthermore, the prevailing situation and circumstances might impact the workplan.}

| Meetings | Activity |
| --- | --- |
| 26th meetingNovember 2021 | * Develop a working document towards Preliminary Draft Revision of Report ITU-R M.2479-0
* Develop and adopt a workplan
 |
| 27th meetingMay 2022 | * Continue developing the working document towards Preliminary Draft Revision of Report ITU-R M.2479-0, based on input contributions
* Review and update work plan if needed
* Liaise, if needed, to concerned and interested Working Parties/organizations on the revision of Report ITU-R M.2479-0
 |
| 28th meetingNovember 2022 | * Continue developing the working document towards Preliminary Draft Revision of Report ITU-R M.2479-0, based on input contributions
* Review and update work plan if needed
* Consider elevation of the working document to the Preliminary Draft Revision
 |
| 29th meetingMay 2023 | * Finalize the Preliminary Draft Revision of Report ITU-R M.2479-0
* Review and update work plan if needed
* Consider elevation to Draft Revision of Report ITU-R M.2479 and submit it to WP5A for adoption and to SG5 for adoption/approval
 |

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

1. ITU-D Study Group 2 and Question 5/2; ITU-T Study Groups 2, 3, 11, 17 and Questions 3/2 and 3/11; ITU-R Study Group 3, Study Group 4 and Working Parties 4A, 4B, and 4C, Study Group 5 and Working Parties 5B, 5C, and 5D, Study Group 6 and Working Party 6A, Study Group 7; ITU Secretary General; United Nations Office for the Coordination of Humanitarian Affairs Inter Agency Standing Committee. [↑](#footnote-ref-1)