|  |  |  |
| --- | --- | --- |
| ECC PT1 | | Doc. PT1(24)077Rev1 |
| ECC PT1 #78 | | |
| Hybrid: Athens, Greece and web meeting, 28-31 May 2024 | | |
| Date issued: | 4 May 2024 | |
| Source: | ECO | |
| Subject: | Summary of public consultation on draft ECC Report 358 | |
| Group membership required to read? (Y/N)  N | | |
|  | | |
| Summary: | | |
| Draft ECC Report 358 on “In-band and adjacent bands sharing studies to assess the feasibility of the shared use of the 3.8-4.2 GHz frequency band by terrestrial wireless broadband systems providing local-area (i.e. low/medium power) network connectivity” was approved by ECC #63 for public consultation on 8 March 2024.  The public consultation started on 8 March 2024, and it closed on 19 April 2024.  This document contains the 15 responses received, a table summarising the responses, and a revision of the draft deliverable containing all the proposed modifications. | | |
| Proposal: | | |
| PT1 is invited to consider the responses to the public consultation contained in this document and, if appropriate, develop an updated version of the draft ECC deliverable for submission to ECC for final approval and publication. | | |
| Background: | | |
| PT1 developed an ECC Report on Radio altimeters under [PT1\_40](https://eccwp.cept.org/WI_Detail.aspx?wiid=775) | | |

An overview of the responses and references to the annexes containing the individual responses are provided in Section 1.

General comments are provided in Section 2.

The full table of comments is provided in Section 3.

**Annex 1** contains the draft ECC deliverable sent to the public consultation.

# overview of Responses

## List A

* **Annexes 2 and 3** United Kingdom
* **Annexes 4 and 5** Germany
* **Annexes 6 and 7** Italy
* **Annexes 8 and 9** Luxembourg
* **Annexes 10 and 11** Sweden
* **Annex 12** France
* **Annex 13** Finland
* **Annex 14 plus attachment and 15** Lithuania

## List B

<https://www.cept.org/ecc/mous-and-lous-between-ceptecc-former-erc-and-other-organisations>

* **Annexes 16 and 17** DECT forum
* **Annexes 18 and 19** GSOA
* **Annex 20** GSMA (revision1)

## industry

* **Annex 21** Ericsson
* **Annex 22** Nokia
* **Annex 23 and 24** Orange
* **Annex 25** ECO

Annex 26Rev1 contains the compiled version with all proposals merged.

# General comments

## Germany

Germany supports the draft ECC Report 358 and provides the following general comments:

All links to external documents, links to references in the document (studies, tables, …), name of figures have to be checked.

Editors notes have to be resolved.

It´s better to have consistency in the Report regarding calling the band in MHz or GHz (such as in the second paragraph of 3.1.1).

In general we should avoid the term « 5G » and should use instead MFCN where possible.

The abbreviation EIRP/e.i.r.p should have the same spelling in the whole document.

A lot of times the wording « conducted » is used (mostly in tables). The correct wording should be « conducted power ».

The term « Earth station » should have the same spelling everywhere in the document, starting with capital letters OR small letters.

The term « smallcell » has to be splitted in two words « small cell ».

Please write non-AAS with a dash.

The word « sector » should start with small letters. Furthermore it´s more consistent to write « base station » with small letters.

In the part of the studies (Section 7) it is proposed to delete all author names (in square brackets)

## Italy

The changes proposed are mostly editorial in nature. The proposals are concentrated in sections that are related to Fixed Satellite services. Some changes were also made to parts of conclusions of studies of WBB LMP with Fixed Service that are similar to the conclusions of FSS to make it consistent.

## LUXEMBOURG

The changes proposed are mostly editorial in nature. Parts of the proposals are provided to review the summary of the study 5 in section 6.3.5.

## FRANCE

France supports adoption and publication of the ECC report 358 supporting the work of CEPT in response to EC mandate.

When finalising the response to EC mandate on the basis of this ECC Report, there is a need to consider that the location of WBB LMP base stations, FSS receiving Earth stations and of FS stations are known; For example, in case of unknown location of WBB LMP base stations, further analysis needs to be developed in order to highlight the relevant consequences of coexistence with adjacent and in band services. If needed, ECC could develop recommendations to provide guidance for administrations (such as Annex 3 from ECC Rec(22)01 which describes approaches for calculation of coordination zones around the FSS earth station whose location is known).

## Finland

It is preferable that this new ECC Report 358 will be approved at next ECC PT1 meeting for final adoption at ECC in June.   
In general, we also agree with the content of the ECC Report 358, however you can find some specific comments below.

## lithuania

Due to the large quantity of technical work that has gone into developing this draft ECC Report, the studies have had to be contained in standalone appendices, while the main body of the report contains summaries of the studies. Annexes 1 and 2 in the Report contain hyperlinks to the individual appendices so that each of the studies can be opened separately.

Considering that final version of ECC Report, which will be published at [ECO Documentation Database](https://docdb.cept.org/home), should not point to the documents used when developing the deliverable, there is a need to find another way.

One possible solution would be to convert appendices into the Annexes and incorporate them into the main document. However there are circa **330 pages** in appendices so this does not seem practical. Moreover, not all appendices were developed using proper template and that would require additional efforts to adjust.

Since the main body of the report contains summaries of the studies it is proposed to keep the studies as standalone documents and publish them together with the main body.

The publication of ECC Report 331 (<https://docdb.cept.org/document/22509>) could serve as an example:

A screenshot of a computer

Description automatically generated

In order to apply such approach it is proposed to adjust the main body and appendices of draft ECC Report 358 as follow:

* Rename appendix file names in the format of “Attachment xx – Title” (see the table below for the list of files),
* Remove the cover page from the appendices and include the header in the document with the corresponding number of attachment,
* Replace the cross-references in sections 6 and 7 of the main body with the text “Detailed study can be found in Attachment xx”,
* Delete Annex 1 and Annex 2 in the ECC Report as they would become redundant.

The list of attachments containing the studies to the ECC Report 358 could be as follow:

|  |  |  |
| --- | --- | --- |
| Attachment number | Title of attachment | Corresponding ECC PT1 document |
| Attachment 01 | Between 3GPP WBB LMP | [ECC PT1(24)008 Annex 1 App 1.1.1](https://api.cept.org/documents/ecc-pt1/81269/ecc-pt1-24-008-annex-1-app-1_1_1_nokia_between-wbb-lmp-co-ch-unsynch) |
| Attachment 02 | Between 3GPP WBB LMP | [ECC PT1(24)060 Annex 12 App 1.1.2](https://api.cept.org/documents/ecc-pt1/81631/ecc-pt1-24-060-annex-12-app-1_1_2_orange_in-band-wbb-lmps) |
| Attachment 03 | 3GPP WBB LMP vs FS | [ECC PT1(24)008 Annex 1 App 1.2.1](https://api.cept.org/documents/ecc-pt1/81271/ecc-pt1-24-008-annex-1-app-1_2_1_germany_wbb-lmp-vs-fs) |
| Attachment 04 | 3GPP WBB LMP vs FS | [ECC PT1(24)008 Annex 1 App 1.2.2](https://api.cept.org/documents/ecc-pt1/81272/ecc-pt1-24-008-annex-1-app-1_2_2_italy_wbb-lmp-vs-fs) |
| Attachment 05 | 3GPP WBB LMP vs FS | [ECC PT1(24)060 Annex 12 App 1.2.3](https://api.cept.org/documents/ecc-pt1/81632/ecc-pt1-24-060-annex-12-app-1_2_3_ericsson_wbb-lmp-vs-fs) |
| Attachment 06 | 3GPP WBB LMP vs FSS | [ECC PT1(24)008 Annex 1 App 1.3.1](https://api.cept.org/documents/ecc-pt1/81274/ecc-pt1-24-008-annex-1-app-1_3_1_intelsat_wbb-lmp-vs-fss-co-ch) |
| Attachment 07 | 3GPP WBB LMP vs FSS | [ECC PT1(24)008 Annex 1 App 1.3.2](https://api.cept.org/documents/ecc-pt1/81275/ecc-pt1-24-008-annex-1-app-1_3_2_nokia_wbb-lmp-vs-fss-co-ch) |
| Attachment 08 | 3GPP WBB LMP vs FSS | [ECC PT1(24)008 Annex 1 App 1.3.3](https://api.cept.org/documents/ecc-pt1/81276/ecc-pt1-24-008-annex-1-app-1_3_3_france_wbb-lmp-vs-fss-co-ch) |
| Attachment 09 | 3GPP WBB LMP vs FSS | [ECC PT1(24)008 Annex 1 App 1.3.4](https://api.cept.org/documents/ecc-pt1/81277/ecc-pt1-24-008-annex-1-app-1_3_4_ericsson_wbb-lmp-vs-fss-co-ch) |
| Attachment 10 | 3GPP WBB LMP vs FSS | [ECC PT1(24)060 Annex 12 App 1.3.5](https://api.cept.org/documents/ecc-pt1/81633/ecc-pt1-24-060-annex-12-app-1_3_5_luxembourg_wbb-lmp-vs-fss-co-ch) |
| Attachment 11 | 3GPP WBB LMP vs FSS | [ECC PT1(24)008 Annex 1 App 1.3.6](https://api.cept.org/documents/ecc-pt1/81279/ecc-pt1-24-008-annex-1-app-1_3_6_germany_wbb-lmp-vs-fss-co-ch) |
| Attachment 12 | 3GPP WBB LMP vs FSS | [ECC PT1(24)060 Annex 12 App 1.3.7](https://api.cept.org/documents/ecc-pt1/81634/ecc-pt1-24-060-annex-12-app-1_3_7_ericsson_wbb-lmp-vs-fss-co-ch) |
| Attachment 13 | DECT-2020 NR vs other radio applications | [ECC PT1(24)060 Annex 12 App 1.4](https://api.cept.org/documents/ecc-pt1/81635/ecc-pt1-24-060-annex-12-app-1_4_dect-forum_dect-nr-studies) |
| Attachment 14 | 3GPP WBB LMP vs VGOS | [ECC PT1(24)008 Annex 1 App 1.5.1](https://api.cept.org/documents/ecc-pt1/81282/ecc-pt1-24-008-annex-1-app-1_5_1_germany_wbb-lmp-vs-gow-co-ch) |
| Attachment 15 | 3GPP WBB LMP vs MFCN | [ECC PT1(24)008 Annex 1 App 2.1.1](https://api.cept.org/documents/ecc-pt1/81283/ecc-pt1-24-008-annex-1-app-2_1_1_nokia_wbb-lmp-vs-mfcn-unsynch) |
| Attachment 16 | 3GPP WBB LMP vs MFCN | [ECC PT1(24)008 Annex 1 App 2.1.2](https://api.cept.org/documents/ecc-pt1/81284/ecc-pt1-24-008-annex-1-app-2_1_2_orange_wbb-lmp-vs-mfcn-unsynch) |
| Attachment 17 | 3GPP WBB LMP vs MFCN | [ECC PT1(24)060 Annex 12 App 2.1.3](https://api.cept.org/documents/ecc-pt1/81636/ecc-pt1-24-060-annex-12-app-2_1_3_orange_wbb-lmp-vs-mfcn-100m-unsynch) |
| Attachment 18 | 3GPP WBB LMP vs MFCN | [ECC PT1(24)008 Annex 1 App 2.1.4](https://api.cept.org/documents/ecc-pt1/81286/ecc-pt1-24-008-annex-1-app-2_1_4_qualcomm_wbb-lmp-vs-mfcn-semi-synch) |
| Attachment 19 | 3GPP WBB LMP vs MFCN | [ECC PT1(24)008 Annex 1 App 2.1.5](https://api.cept.org/documents/ecc-pt1/81287/ecc-pt1-24-008-annex-1-app-2_1_5_orange_wbb-lmp-vs-mfcn-indoor) |
| Attachment 20 | 3GPP WBB LMP vs MFCN | [ECC PT1(24)067 Annex 04 App 2.1.6](https://api.cept.org/documents/ecc-pt1/82169/ecc-pt1-24-067_annex-04_app-2_1_6_france_wbb-lmp-vs-mfcn-unsynch) |
| Attachment 21 | 3GPP WBB LMP vs MFCN | [ECC PT1(24)008 Annex 1 App 2.1.7](https://api.cept.org/documents/ecc-pt1/81289/ecc-pt1-24-008-annex-1-app-2_1_7_ericsson_wbb-lmp-vs-mfcn-unsynch) |
| Attachment 22 | DECT-2020 NR vs MFCN | [ECC PT1(24)008 Annex 1 App 2.2](https://api.cept.org/documents/ecc-pt1/81291/ecc-pt1-24-008-annex-1-app-2_2_dect-forum_dect-nr-vs-mfcn) /  [ECC(24)025](https://api.cept.org/documents/ecc/82194/ecc-24-025_update-on-studies-between-dect-2020-nr-and-adjacent-mfcn-below-3_8-ghz) |

# TABLE of comments

## List A

| **Comment number** | **Section number**  **Clause** | **Paragraph**  **Figure**  **Table** | **Type of comment**  (General,  Technical or  Editorial) | **Comment** | **Proposed change** | **Accepted/rejected by PT1** |
| --- | --- | --- | --- | --- | --- | --- |
| SWE1- SWE19 |  |  |  | See annex | See annex |  |
| D/1 | Page 2, 0 Exec. Summary | 1th para | Grammar | should be presence | This Report supports the work … |  |
| Orange/1 | 0 | Second paragraph | Editorial | Adjavcent band co-existence studies | Add: co-existence technical |  |
| D/2 | Page 2, 0 Exec. Summary | starlets under 1 and 2 | Editorial | proposed to be moved in two footnotes | \*Studies on RA are provided in a separate ECC Report on [XYZ] [1].  \*\*As parameters for WAIC above 4.2 GHz were not provided, no studies have been performed. |  |
| DF/1 | 0 | Bullet 2 | General | RadAlts and WAIC are not studied in this report | Delete “ with Radio altimeters (RA)\* and Wireless Avionics Intra-Communications (WAIC)\*\* on board aircraft in the frequency band 4.2-4.4 GHz”  Consequential deletion to \* and \*\* text, and add:  “Adjacent band studies between WBB LMP and radio altimeters (RA) are provided in ECC Report [XYZ] [1]. As parameters for WAIC above 4.2 GHz were not provided, no studies have been performed.” |  |
| D/3 | Page 2, 0 Exec. Summary | para below starlets | Grammar |  | Further, in this Report it is assumed that: |  |
| DF/2 | 0 | Para starts “This Report includes…” | Edit |  | Add “a” to sentence to read:  This Report includes also a coexistence study between WBB LMP and VLBI Global Observing System (VGOS) stations operating in a few CEPT countries… |  |
| DF/3 | 0 | Power levels and antenna heights… | Edit | Reword paragraph and highlight TPC | The maximum power level for WBB terminals (Mobile, Nomadic, IoT, Machine, FWA) of 28 dBm EIRP is considered and Transmitter Power Control (TPC) activation is applied. For DECT-2020 NR the maximum power level is 23 dBm EIRP with a channel bandwidth of 6.912 MHz. It is noted that for DECT-2020 NR, the technical specification mandates that all radio devices within the network shall employ TPC, including the fixed radio device (or 'base station' in traditional cellular networks). |  |
| GSOA/1 | 0 | Paragraph 11 | General | To remove capital letters in “Power Control” | For the purpose of studies, the following maximum power levels for 3GPP WBB LMP have been defined: low power with 31 dBm/100 MHz EIRP and medium power with up to 49 dBm/100 MHz or up to 51 dBm/100 MHz EIRP. The power level for WBB terminals (Mobile, Nomadic, IoT, Machine, FWA) of 28 dBm EIRP is considered and power control activation is obligatory. For DECT-2020 NR the power level is 23 dBm EIRP with a channel bandwidth of 6.912 MHz. For studies involving WBB medium power base stations, a range of antenna heights, up to 30 m above the ground, was studied and for studies involving WBB low power outdoor base stations maximum antenna height of 10 m above ground was studied. |  |
| GSOA/2 | 0 | Paragraph 16 | General | Change of wording to indicate that mitigation techniques could be considered during coordination on a case by case basis. The original text implied that mitigation techniques would always be available to facilitate coexistence. The new text also makes reference to the development of a recommendation which would provide guidance for coordination for administrations. | Nevertheless, appropriate mitigation techniques could be considered during coordination on a case by case basis to facilitate coexistence between WBB and FS/FSS systems, both at national level and with the neighbouring countries. CEPT is developing recommendations for administrations to provide guidance for coordination between these services. |  |
| GSOA/3 | 0 | Paragraph 24 | General | Different terms are used to refer to the development of a Recommendation for guidance to administrations to implement WBB LMP nationally. Proposal to use “recommendations” instead of “toolbox”. Guidelines could also be an appropriate term instead of toolbox. | CEPT is developing recommendations for administrations to provide guidance on the approach to coexistence in the band. There may be also a need to further develop relevant cross border recommendations. |  |
| FIN/1 | 0 Executive summary | Synchronisation of WBB LMB | General | The paragraph defines that two WBB LMP technologies have been considered. One based on 3GPP specs. and one based on DECT-2020 NR. Then it should be clarified here, that synchronisation. can only be supported for WBB LMP NETWORKS that are based on 3GPP specs not just different WBB LMP. | While both technologies can support unsynchronised operation, synchronisation between different WBB LMP networks can be only supported for WBB LMP networks based on 3GPP technical specifications. |  |
| ER/1 | 0 | Synchronisation of WBB LMP | General | Adding some details on DECT functionality. Ref section 6.4.3.1 (last para) of draft report. | **Current text:** “To note, two WBB LMP technologies have been considered, one based on 3GPP technical specifications and the other based on DECT-2020 NR technical specifications. While both technologies can support unsynchronised operation, synchronisation between different WBB LMP can be only supported for WBB LMP based on 3GPP technical specifications. Synchronised operation of WBB LMP with MFCN below 3800 MHz is only possible for WBB LMP based on 3GPP technical specifications. The study results of these two technologies are presented separately.  **Proposed replacement text:** “To note, two WBB LMP technologies have been considered, one based on 3GPP (LTE/NR) technical specifications and the other based on DECT-2020 NR+ technical specifications. Both technologies need special arrangement/ working principle between their systems to coexist. For example for 3GPP based WBB LMP, TDD frame synchronisation between different WBB LMP systems can improve coexistence. Whereas, DECT uses Listen Before Talk (LBT) protocol and other techniques to synchronize to avoid collision with other transmissions in a network. However, these two technologies cannot synchronize with each other based on the different method used for synchronization. Synchronised operation of WBB LMP with MFCN below 3800 MHz is only possible for WBB LMP based on 3GPP technical specifications. Therefore, study results of these two technologies are presented separately.” |  |
| FIN/2 | 0 Executive summary | Power levels and antenna heights studied for WBB LMP | General | Add "base stations" in the first sentence to clarify that the power levels indicated apply to BS. | For the purpose of studies, the following maximum power levels for 3GPP WBB LMP base stations have been defined: low power with 31 dBm/100 MHz EIRP and medium power with up to 49 dBm/100 MHz or up to 51 dBm/100 MHz EIRP. |  |
| ER/2 | 0 | Power levels and antenna heights studied for WBB LMP | Editorial | Add ‘BS’ with low and medium power in the last line. | “Covering both AAS and non-AAS scenarios for medium power BS and only non-AAS for low power BS.” |  |
| FIN/3 | 0 Executive summary | Power levels and antenna heights studied for WBB LMP | General | Clarification in the third sentence, that in DECT, there are no distinction between BS and MS. | All DECT-2020 NR devices are the same, i.e., there is no distinction between 'base station' equipment or 'user device' equipment and the power level is 23 dBm EIRP with a channel bandwidth of 6.912 MHz. |  |
| UK/1 | 0  Executive Summary | Power levels and antenna heights studied for WBB LMP  Para 1 | General | The current categorisation of WBB terminals contains both *types* of terminals (fixed, mobile), and *use cases* for the terminals (FWA, IoT). However, the *use case* is not relevant when defining a WBB terminal, so this categorisation should *only* capture the *types* of terminals that fall under the definition. | WBB terminals (fixed/installed, and mobile/nomadic) |  |
| FIN/4 | 0 Executive summary | Power levels and antenna heights studied for WBB LMP | General | Modify the last sentence to indicate that the 10 m antenna height applies also to DECT equipment. | For studies involving WBB medium power base stations, a range of antenna heights, up to 30 m above the ground, was studied and for studies involving outdoor WBB low power base stations and DECT-2020 NR, a maximum antenna height of 10 m above ground was studied. |  |
| D/4 | Page 2, 0 Exec. Summary | last para | Editorial | Bullets for better reading proposed | * low power with 31 dBm/100 MHz EIRP and * medium power with up to 49 dBm/100 MHz or up to 51 dBm/100 MHz EIRP. * The power level for WBB terminals (Mobile, Nomadic, IoT, Machine, FWA) of 28 dBm EIRP is considered and Power Control activation is obligatory. * For DECT-2020 NR the power level is 23 dBm EIRP with a channel bandwidth of 6.912 MHz. * For studies involving WBB medium power base stations, a range of antenna heights, up to 30 m above the ground, was studied and   for studies involving WBB low power outdoor base stations maximum antenna height of 10 m above ground was studied |  |
| Orange/2 | 0 | Page 3 and Page 4 | General | Several texts are proposed to improve and clarify the description | * As attached document |  |
| D/5 | Page 3, 0 Exec. Summary | 1th para | Editorial | two times comma missing | * …(including geographical separation, frequency separation etc.) depending … (EIRP, antenna height, antenna gain, emission and reception masks, etc.), covering both … |  |
| I/1 | **0** | Paragraph 2 Page 3 | Editorial | The real terrain hinders or favours protection, not data | * because real terrain can not only hinder, but also favour propagation |  |
| LUX/1 | 0 | In-band coexistence of WBB LMP with FS and FSS  Paragraph 3 | General | To avoid two consecutive words “coexistence” | * In addition, due to the large separation distances that may be necessary depending of the configuration of the two systems, coexistence… |  |
| I/2 | 0 | Paragraph 5 Page 3 | General | Text proposal to better clarify that mitigation techniques could be used when needed and on a case by case basis during coordination.  In addition it seems appropriate to mention at this point that CEPT will provide guidelines for such coordination. | * Nevertheless, appropriate mitigation techniques could be considered during coordination on a case by case basis to facilitate coexistence between WBB and FS/FSS systems, both at national level and with the neighbouring countries. CEPT is developing recommendations for administrations to provide guidance for coordination between these services. |  |
| UK/2 | 0  Executive Summary | In-band coexistence of WBB LMP with FS and FSS  Para 1 | Editorial | Editorial changes to improve readability. | Regarding FS coexistence, one of the studies shows the importance that real terrain data are taken into account in the coexistence assessments, because the impact of real terrain data on spectrum propagation can result in not only reduced, but also increased separation distances required between WBB LMP and FS, |  |
| UK/3 | 0  Executive Summary | In-band coexistence of WBB LMP with FS and FSS  Para 1 | Technical | The separation distances and exclusion zones determined in this ECC Report are calculated using MCL for a worst-case realistic scenario, which for example assumes that the WBB LMP BS antenna is azimuthally angled towards the victim FS or FSS, and transmitting at maximum licenced power.  Therefore, further coordination mechanisms such as azimuthal offset of the WBB BS antenna away from the FS victim receiver, or reduced transmit power at the WBB BS, could allow for deployment of a WBB LMP BS within the exclusion zone determined in this ECC Report.  Additional text has been added to clarify what is meant by “exclusion zone” to ensure that this nuance is captured. | and therefore impact the areas in which WBB LMP BS deployments need to be excluded in lieu of any further coordination mechanisms[[1]](#footnote-2) (exclusion zones) accordingly. |  |
| UK/4 | 0  Executive Summary | In-band coexistence of WBB LMP with FS and FSS  Para 2, 3, 4 | Editorial | Editorial changes to improve readability. | Based on the analyses, it is not possible to define generic technical conditions that guarantee the protection of FS, including its long-term development. Instead, a case-by-case analysis is required. In addition, due to the large separation distances that may be necessary, coexistence between FS and both low and medium power WBB systems may require cross border coordination and related bilateral or even multilateral agreements among neighbouring countries on a case-by-case basis.  It is also not possible to define generic technical conditions that guarantee the protection of FSS, including its long-term development, but instead a case-by-case analysis is needed. In addition, due to the large separation distances that may be necessary, coexistence between FSS and both low and medium power WBB systems may require cross border coordination and related bilateral or even multilateral agreements among neighbouring countries on a case-by-case basis.  Nevertheless, appropriate mitigation techniques can be applied to facilitate coexistence between WBB and FS/FSS systems, both at national level and with the neighbouring countries. |  |
| LUX/2 | 0 | Second last paragraph | General | Proposal to use “recommendations” instead of “toolbox”. | CEPT is developing a recommendations for administrations to provide guidance on the approach to coexistence in the band. |  |
| D/6 | Page 3, 0 Exec. Summary | 3rd para | General | words missing, shorten the sentences for better reading. | Based on the analyses of the studies, it is not possible to define generic technical conditions that guarantee the protection of FS, including its long-term development. A case-by-case analysis is needed. In addition, due to the large separation distances … be managed at national level only. It may require cross border coordination |  |
| D/7 | Page 3, 0 Exec. Summary | 4rd para | General | shorten the sentences for better reading. | It is also not possible to define generic technical conditions that guarantee the protection of FSS, including its long-term development. A case-by-case analysis is needed. In addition, due to the large separation distances that may be necessary for coexistence, coexistence between FSS and both low and medium power WBB systems cannot always be managed at national level only. It but may require cross border coordination…. |  |
| ER/19 | 0 | Semi-synchronised operation of WBB LMP | General | Additional text proposed is highlighted in yellow. | “Studies were also performed for semi-synchronised operation with DL to UL modifications for WBB LMP operating based on 3GPP technical specifications, showing that it can ensure the same protection of MFCN base stations below 3.8 GHz as synchronised operation considering BS to BS interference. This approach could be considered on a case-by-case basis. It could better facilitate coexistence with some limitations on UL/DL sequences on WBB LMP frame structure providing higher uplink capacity but with possible constraints on WBB LMP uplink performance.” |  |
| UK/5 | 0  Executive Summary | Studies on WBB LMP networks with no synchronisation to other WBB LMP nor to MFCN  Para 3, 4 | Editorial | Editorial changes to improve readability. | Some studies show that coordination between unsynchronised 3GPP WBB LMP networks and MFCN networks below 3.8 GHz could be reduced through the definition of out of band emission limits, receiver blocking levels and/or frequency separation requirements. The following were investigated:   * 60 MHz frequency separation for WBB MP to accommodate MFCN blocking; * out of band emission level of -45 dBm/MHz conducted per BS (sector) below 3800 MHz for LP and MP non-AAS BS (sector) and -45 dBm/MHz TRP per BS for MP AAS BS (sector); * WBB LMP receiver blocking level of -15 dBm below 3800 MHz for wanted signal level: P\_ref\_sens +6 dB.   In addition to the above technical conditions, studies identified the following possible components for coordination processes which could improve co-existence between WBB LMP and MFCN (below 3.8 GHz): to be considered for impoving   * Pfd or field strength values at the WBB LMP local area network coverage border; * physical separation between WBB LMP and MFCN Macro BSs; * synchronisation or semi-synchronisation between MFCN and WBB LMP networks. |  |
| ER/3 | 0 | Studies on WBB LMP networks with no synchronisation to other WBB LMP nor to MFCN | General | Add the proposed text in the end of 2nd para. | “However, coordination on case-by-case basis is required”. |  |
| ER/4 | 0 | Studies on WBB LMP networks with no synchronisation to other WBB LMP nor to MFCN | General | Replacement text for 3rd para  Study 3 shows: When the WBB LMP BS and 5G MFCN smallcell BS are deployed in the same street in outdoor area or in the same indoor area, synchronization or other coordination measures are required.  More strict Requirement for rural areas.  Separation distances are larger then cell size in study 7 considering I/N -6 criteria. | **Current text :** Some studies show that for the unsynchronised operation between 3GPP WBB LMP and MFCN (below 3.8 GHz) out of band emission and receiver blocking levels and frequency separation will reduce the need for coordination between WBB LMP and MFCN. ~~The following were investigated:~~  ~~§ 60 MHz frequency separation for WBB MP to accommodate MFCN blocking;~~  ~~§ out of band emission level of -45 dBm/MHz conducted per BS (sector) below 3800 MHz for LP and MP non-AAS BS (sector) and -45 dBm/MHz TRP per BS for MP AAS BS (sector);~~  ~~§ WBB LMP receiver blocking level of -15 dBm below 3800 MHz for wanted signal level: P\_ref\_sens +6 dB.~~  **Proposed text :** “ The studies considering unsynchronised operation between WBB LMP and MFCN (below 3.8 GHz) shows that lower out of band emission and frequency separation of at least 60 MHz can facilitate the coexistence and reduce the size of coordination distance required between the two services. However, coordination of unsynchronized WBB LMP and MFCN in all scenarios may not be possible, synchronization or other coordination measures will be required.  And remove striked text as shown above. |  |
| Nokia/9 | 0 Executive summary | Section: Studies on WBB LMP networks with no synchronisation to other WBB LMP nor to MFCN | General/Technical | Related to the comment above, it is worth mentioning that while the in-band transmit power of WBB LMP BS is specified as EIRP for both non-AAS and AAS systems, the unwanted emissions studied are also specified as EIRP for both non-AAS and AAS systems, while the conditions investigated to address coexistence issues were based on conducted power and TRP for non-AAS and AAS systems respectively.  The logic in the ECC Report 358 regarding the EIRP, OOB emissions and BEM limits for AAS and non-AAS antennas, seems to follow an abstractly unified approach when selecting the suitable parameter to model or describe the performance of WBB LMP BS. ECC Decision (11)06 considers that for non-AAS antennas the most suitable parameter to describe their performance is EIRP, while for AAS antennas the most suitable parameter to describe their performance is TRP | As such, for technical consistency, we propose to translate the conducted power levels described in this section to EIRP levels for non-AAS and translate the EIRP levels to TRP for AAS. |  |
| DF/4 | 0 | Studies on WBB LMP networks with no synchronisation to other WBB LMP nor to MFCN | Technical | To capture that fact that TPC is considered. Add bullet after bullet 2 (in set of 4 bullets) | the effect of TPC to mitigate interference into MFCN below 3.8 GHz from DECT-2020 NR and 3GPP terminals (including FWA terminals at 10 m antenna height). Studies show that when TPC is deployed in WBB LMP devices it can reduce the probability of interference into MFCN and its impact i.e. on throughput loss; |  |
| FIN/5 | 0 Executive summary | Studies on WBB LMP networks with no synchronisation to other WBB LMP nor to MFCN | General | Clarification for the reason on unsynchronous operation in the first sentence of first paragraph. | For the various type of use-cases there may be various needs of UL/DL resources and different technologies resulting in unsynchronised operation. |  |
| FIN/6 | 0 Executive summary | Studies on WBB LMP networks with no synchronisation to other WBB LMP nor to MFCN | General | Provide description of study results between WBB LMP networks in the second paragraph. | Indoor-only, outdoor-only and outdoor/indoor deployment scenarios have been considered. The analysis of in-band and adjacent band operation demonstrate the feasibility of unsynchronised WBB LMP operation in the frequency band 3.8-4.2 GHz. Study results are presented in the form of separation distances necessary to obtain defined I/N protection criterion and uplink throughput loss. One study also proposed field strength values not to be exceeded at the WBB LMP local area network licensed area edge for co-channel and adjacent channel cases for consideration by national regulators. |  |
| D/8 | Page 3, 0 Exec. Summary | last but not least para | General | better wording proposded | The following technical issues were investigated: …   * out of band emission level of -45 dBm/MHz conducted power per BS (sector) below 3800 MHz for LP and MP non-AAS BS and   out of band emission level of -45 dBm/MHz TRP per BS (sector) for MP AAS BS ; |  |
| D/9 | Page 3, 0 Exec. Summary | last para | Grammar | please insert two times “the” | In addition to the above technical conditions, studies identified possible components for the coordination process to ensure the co-existence between… |  |
| D/10 | Page 4, 0 Exec. Summary | first para | Grammar | delete one time the “s” and delete the other time the “s” because it´s plural, delete scenario (double) | Adjacent channel coexistence between synchronized WBB LMP networks, when operating based on 3GPP technical specifications, is considered covered by 3GPP/ETSI standardisation and thus is not studied in this Report. This assumption also accounts for adjacent channel operation of these WBB LMP networks in the frequency band 3.8-4.2 GHz synchronised with MFCN below 3.8 GHz. Such synchronized coexistence scenarios across the frequency band 3.4-4.2 GHz for non-AAS take part |  |
| ER/5 | 0 | Adjacent channel coexistence for WBB LMP networks with synchronisation to other WBB LMP and MFCN | General | Add also AAS as highlighted yellow. | Such synchronized coexistence scenarios across the frequency band 3.4-4.2 GHz for non-AAS and AAS scenario takes part of possible coordination solutions for WBB LMP based on 3GPP technical specifications |  |
| Nokia/1 | 0 Executive summary | Section: Adjacent channel coexistence for WBB LMP networks with synchronisation to other WBB LMP and MFCN | Editorial | Propose rewording the title | Previous title  *Adjacent channel coexistence for WBB LMP networks with synchronisation to other WBB LMP and MFCN*  New title:  *Adjacent channel coexistence for synchronised WBB LMP networks with other WBB LMP and MFCN* |  |
| Nokia/2 | 0 Executive summary | Section: Adjacent channel coexistence for WBB LMP networks with synchronisation to other WBB LMP and MFCN | Editorial | Propose rewording the second sentence of the paragraph | Previous sentence:  *This assumption also accounts for adjacent channel operation of these WBB LMP networks*  New sentence substituting “channel” with “band”, making the sentence:  *This assumption also accounts for adjacent band operation of these WBB LMP networks…* |  |
| DF/5 | 0 | Adjacent channel coexistence for WBB LMP networks with synchronisation to other WBB LMP and MFCN | Technical | To highlight the fact than synchronisation does not benefit all interference mechanisms | Add paragraph:  It is noted that synchronisation is only an effective mitigation when considering base-to-base or terminal-to-terminal adjacent channel interference. When considering base station interference into adjacent channel terminal receivers, or terminal interference into adjacent channel base station receivers, synchronisation provides no benefit to coexistence. This is also the case for semi-synchronised operation. |  |
| I/3 | 0 | Paragraph 4 Page 4 | General | It is preferable to use the same terms to refer to the guidelines to be provided by CEPT, otherwise there is a risk of misunderstandings and it seems that they are different things. It is suggested to always use “recommendations” or “guidelines” | CEPT is developing recommendationsfor administrations to provide guidance on the approach to coexistence in the band. There may be also a need to further develop relevant cross border recommendations. |  |
| UK/6 | 0  Executive Summary | Semi-synchronised operation of WBB LMP  Para 1 | General | Clarifying that the semi-synchronisation mentioned in this paragraph is a specific sub-case of semi-synchronisation, and is defined later in the document. | Studies were also performed for semi-synchronised operation with DL to UL modifications for WBB LMP operating based on 3GPP technical specifications (as defined in Section 2.1.4), showing that this particular specific sub-case of semi-synchronised operation can ensure the same protection of MFCN base stations below 3.8 GHz as synchronised operation. |  |
| UK/7 | 0  Executive Summary | Other aspects regarding the shared use of the frequency band 3.8-4.2 GHz for WBB LMP  Para 1, 2 | Editorial | Editorial changes to improve readability. | There is a balance to be struck between how much coordination an Administration is able to carry out at a local level between WBB LMP networks and incumbent services, and how restrictive the harmonised technical conditions on WBB LMP need to be. Some of the technical conditions that were studied in this report would reduce to a certain extent the amount of coordination needed when assigning frequencies to WBB LMP installations.  In order to facilitate the deployment of terrestrial wireless broadband systems providing local-area network connectivity, administrations may want to be able to complement certain aspects of their use of the band 3.8-4.2 GHz to national and/or local level circumstances, managing the remaining coordination requirements not addressed by the harmonised technical conditions (for example through the definition of synchronisation and/or frequency separation requirements). CEPT is developing a toolbox for administrations to provide guidance on the approach to coexistence in the band. There may be also a need to further develop relevant cross border recommendations. |  |
| Nokia/3 | 0 Executive summary | Section: Other aspects regarding the shared use of the frequency band 3.8-4.2 GHz for WBB LMP | General/Editorial | Propose to reword the last sentence of the first paragraph | In the first paragraph of this section, the last sentence says “*some of the technical conditions that were studied in this report would reduce to a certain extent the amount of coordination needed”*  When reading this sentence, the word “some” implies that there were technical conditions studied, which do not aim to reduce coordination. Then the question is which technical conditions these are and what is the reason of having those conditions, if they don’t have an impact on coordination  Suggestion either to specify which are these technical conditions, or to delete the word “some” and the words “to a certain extent” |  |
| Nokia/4 | 0 Executive summary | Section: Other aspects regarding the shared use of the frequency band 3.8-4.2 GHz for WBB LMP | General/Editorial | In the 2nd paragraph, regarding the text within the parenthesis.  The studies have identified (as concluded in Section 7.1.8) *“the need for frequency separation for unsynchronised WBB LMPs to protect MFCN below 3.8 GHz”*. The way this frequency separation aspect is used in this parenthesis, is complementing the text in the sense that it may be used as a complementary mitigation to manage coordination. The studies however show that frequency separation is needed for unsynchronised WBB LMP operation to protect MFCN. | We propose to delete the text “and/or frequency separation requirements”  Previous sentence  *“in order to manage remaining coordination cases not addressed by the harmonised technical conditions (for example on synchronisation and/or frequency separation requirements)”*  New sentence  *“in order to manage remaining coordination cases not addressed by the harmonised technical conditions (for example synchronisation requirements)”* |  |
| D/11 | Page 4, 0 Exec. Summary | 3rd para | Grammar | start administration with a small letter | There is a balance to be struck on how much coordination an administration |  |
| D/12 | Page 4, 0 Exec. Summary | last but not least para | Editorial | comma missing | …3.8-4.2 GHz to national circumstances in order to manage… |  |
| Orange/3 | Table of content | Page 5, 6, 7 | General | The company and country names are removed | Removal of company and country names |  |
| FIN/7 | List of abbreviations |  | Editorial | There is no need to put low/medium power into parenthesis.  The terminology is clearly defined int the Section 1 first paragraph. WBB LMP equals "Terrestrial wireless broadband systems providing local-area low/medium power network connectivity". | Terrestrial wireless broadband systems providing local-area (i.e. low/medium power) network connectivity à Terrestrial wireless broadband systems providing local-area low/medium power network connectivity  Proposal to delete parenthesis (i.e. ) See above. |  |
| D/13 | Page 8, List of abbreviations | 6th row | Editorial | term “2020” is missing | …Telecommunications-2020 New Radio |  |
| D/14 | Page 8, List of abbreviations |  | General | abbreviation “TDD” is missing | TDD - Time division duplex |  |
| DF/6 | List of Abbreviations |  | Edit | Add TPC to abbreviations | TPC – Transmitter Power Control |  |
| D/15 | Page 9, Introduction | 1th para | editorial | it is proposed to change the order for better reading | …broadband systems (WBB systems) providing local-area network connectivity with base stations operating at low/medium power (here and after with abbreviation WBB LMP)… |  |
| D/16 | Page 9, Introduction | 2nd para, 2nd bullet | editorial | insert “these” for better reading | …the protection and the future evolution and development of these incumbent users sharing this band… |  |
| GSOA/4 | 1 | Paragraph 1 | Editorial | Editorial change to split list of sharing studies to separate in-band and adjacent band studies. | … results of:   * sharing and compatibility studies between WBB LMP networks; * sharing and compatibility studies between WBB LMP networks and incumbent users in the 3.8-4.2 GHz frequency band, notably receiving satellite earth stations in the fixed satellite service and terrestrial fixed links to ensure the protection and the future evolution and development of incumbent users sharing this band and; * sharing and compatibility studies between WBB LMP networks and spectrum users in adjacent bands (such as MFCN below 3.8 GHz). |  |
| I/4 | 1 | Paragraph 1  Page 9 | Editorial | It is clearer to have separate bullet points for in-band studies and those in adjacent bands. | … results of:   * sharing and compatibility studies between WBB LMP networks; * sharing and compatibility studies between WBB LMP networks and incumbent users in the 3.8-4.2 GHz frequency band, notably receiving satellite earth stations in the fixed satellite service and terrestrial fixed links to ensure the protection and the future evolution and development of incumbent users sharing this band and,   sharing and compatibility studies between WBB LMP networks and spectrum users in adjacent bands (such as MFCN below 3.8 GHz). |  |
| Orange/4 | 1 | Page 9, second paragraph | Editorial | The second paragraph is reformulated | The adjacent band co-existence study between WBB LMP in 3.8-4.2 GHz band and Radio Altimeters in 4.2-4.4 GHz band is described in a separate ECC Report [1] |  |
| FIN/8 | 2.1.1 Synchronised operation |  | General | It is better to use wording that reflects clearly to the common phase lock reference like used in ECC Report 296 and ECC Recommendation (20)03. | … involved as well as synchronising the beginning of the frame across all networks. à involved as well as synchronising the beginning of the frame across all networks i.e., a common phase clock reference. |  |
| Orange/5 | 2.1 | Page 11: Second paragraph | General | In this study report, BEM is not defined. | Replace “BEM” by “protection to MFCN” |  |
| FIN/9 | 2.1.2 Unsynchronised operation |  | General | Also, here it is necessary to say clearly that in this operation mode a different phase clock is used. | This might happen if the TDD networks either do not align all DL and UL transmissions or do not synchronise at the beginning of the frame i.e., different phase clock reference. |  |
| D/17 | Page 10, Definitions | 2.1.4 Semi-synchronised…, 1th para, last sentence | editorial | shorten the sentence/start with a new sentence | UL to DL modifications. This case is not considered |  |
| ER/6 | 2.1.4 | First para, first line | General | Addition of text highlighted in yellow. | **Current text:** In this Report, a specific sub-case of semi-synchronised operation, in which only DL to UL modifications are allowed to WBB LMP network compared to MFCN network, is considered  **Proposed Text:** In this Report, a specific sub-case of semi-synchronised operation, in which only DL to UL modifications are allowed to WBB LMP network compared to MFCN network frame structure, is considered. |  |
| DF/7 | 2.1.4 | after bullets | Technical | To highlight the fact than synchronisation does not benefit all interference mechanisms | However, it is noted that synchronisation (or semi-synchronisation) is only effective when considering base-to-base or terminal-to-terminal adjacent channel interference. When considering base station interference into adjacent channel terminal receivers, or terminal interference into adjacent channel base station receivers, synchronisation provides no benefit to coexistence. |  |
| LUX/4 | 2.1.4 | Paragraph 4 | General | Editorial change to split list of sharing studies to separate in-band and adjacent band studies. | However, for some cases, especially if the required separation distance for unsynchronised operation is a challenge, synchronisation might be necessary. For those cases, additional frame structure flexibility is achieved by employing semi-synchronised operation. |  |
| LUX/5 | 2.1.4 | Second last paragraph | General | Clarifying the frame structure of MFCN | Compared to synchronised operation the benefit is the possibility to employ more UL resources than provided by the defined frame structure of the MFCN network below 3800 MHz. |  |
| LTU/1 | 2.1.4 | 2nd paragraph | Editorial | Text in brackets is superfluous, it is proposed to be deleted | The approach could be implemented with either one of the frame structures recommended in ECC Recommendation (20)03 [2]. |  |
| D/18 | Page 11, Definitions | 2.1.4 Semi-syncrhonised…, last para | editorial | change “on” in “in” | …is realized in the same way… |  |
| Nokia/5 | 2.1.4 Semi-synchronised operation with DL to UL modifications for WBB LMP | First paragraph | Editorial | Propose editorial in the last two sentences of the first paragraph | Edit 1:  Previous text  *“However, WBB LMP network will receive additional BS-to-BS cross-interference”*  New text  *“However, WBB LMP network could receive additional BS-to-BS cross-interference”*  Edit 2  Previous text  *“Semi-synchronised operation is also possible”*  New text  *“Although semi-synchronised operation is also possible”* |  |
| FIN/10 | 2.1.4 Semi-synchronised operation with DL to UL modifications for WBB LMP | Last paragraph | General | Again, here it is necessary to add text on the phase clock. | It should be noted that semi-synchronisation is realized on the same way as synchronised operation and simply requires setting the corresponding network parameters related to the DL to UL modifications in the frame structure of the WBB LMP. A common phase clock reference, as for synchronised operation is required. |  |
| D/19 | Page 11, Definitions | 2.2 Licensed area | Grammar/editorial | formulation of a whole sentence | The licensed area is a geographical zone bounded by a pfd/field strength not to be exceeded at the receiving antenna of the base station to be protected. |  |
| LUX/6 | 2.2 | Paragraph 1 | General | Clarification of licenced area, which does not apply necessary to base stations only | Licensed area is geographical zone bounded by specific conditions to be met (e.g. a pfd/field strength not to be exceeded) at the receiving antenna of the station to be protected. |  |
| Orange/6 | 2.2 | Page 11: first paragraph | General | The licensed area usually is not defined by pfd or field strength | Modify the paragraph as “Licensed area is geographical zone a local area network is authorized.” |  |
| ER/7 | 2.2 | 1 | General | In the UK, a Latitude/Longitude for the BS is given in the application.  For LP the licensed area is a 50 m radius circle  For MP there does not seem to be a licensed area definition. Maybe there is.  Licensed area would be expected to be included in the license, or in some other way be publicly available. | The licensed area needs a definition which either is valid for both LP and MP, or separately defines licensed area for LP and MP. |  |
| D/20 | Page 12, 3 Allocations… | 1th sentence | Grammar | Plural | Allocation of services and applications according to ECO Frequency Information System ([EFIS](https://efis.cept.org/)) for the frequency range 3400-4400 MHz are provided in Table 1. |  |
| I/5 | 3 | Paragraph 1 Page 12 | General | it is proposed to specify that the allocations refer to the ECA table to be found in EFIS because it is more correct | Allocation of services and application according to ECA Table [3] in ECO Frequency Information System (EFIS) for frequency range 3400-4400 MHz are provided in Table 1. |  |
| I/6 | 3 | Table 1 Page12 | Technical | Proposal to include in Table 1 the information that the band 3800-4200 MHz is allocated on a secondary basis in the Radio Regulations in Region 1 and that in some CEPT countries the mobile service may be on secondary basis.  In fact if in the ECA table there is an allocation to the mobile as primary status, it means that there are at least 15 CEPT countries that have the mobile as primary in the band, but the rest could have the mobile as secondary according to the RR. | Note1: The band 3800-4200 MHz is allocated on a secondary basis in the Radio Regulations [4] in Region 1 to the mobile service and in some CEPT countries the mobile service may be on secondary basis. |  |
| D/21 | Page 12, 3 Allocations… | Table 1 | General | Better to split the last part of the table in two, one for 3.4-3.8 and the other for 4.2-4.4 GHz |  |  |
| LUX/7 | 3.1.1 | Paragraph 1 | General | Clarification of the regulatory framework under which FSS is used and editorial edit. | For decades and in accordance with the Article 5 of the ITU-R Radio Regulation, the FSS has utilized the 3400-4200 MHz and 5850-6725 MHz frequency bands for space-to-Earth (downlink) and Earth-to-space (uplink) links, respectively. FSS earth stations in CEPT countries have mainly been used in the 3600-3800 MHz and 3800-4200 MHz bands, rather than the lower 3400-3600 MHz band. |  |
| Nokia/6 | 3.1.1 Fixed satellite service | 3rd paragraph | General/Editorial | The end of the penultimate sentence of the 3rd paragraph says:  *“mobile backhauling and video contribution and distribution”*  What is meant by video contribution? | Propose deleting the word *“contribution”* in the penultimate sentence of the 3rd paragraph.  Previous sentence  *“mobile backhauling and video contribution and distribution”*  New sentence  *“mobile backhauling and video distribution”* |  |
| Nokia/7 | 3.1.1 Fixed satellite service | 4th paragraph | Editorial | Reference link of the reference [8] is missing. | If no such reference is available, we propose deleting the whole sentence as otherwise it is not justifiable information |  |
| LUX/7 | 3.1.1 | Paragraph 4 | General | The reference provided in the annex of the list of references seems to not be right | C-band IoT terminals [8] in other |  |
| GSOA/5 | 3.1.1 | Paragraph 5 | General | Proposed text to highlight a possible future satellite application for which 3.8-4.2 GHz could be interesting based on international discussions. | These national frameworks provide visibility and legal certainty for the future development of earth stations in the 3800-4200 MHz band while also ensuring the development of 5G in the 3400-3800 MHz band. It is therefore important to consider all potential evolution of the use of the band by future satellite applications, one example being Direct-to-Device (D2D) applications, for which the C-band represents a band of interest in the future as shown through contributions to the WRC-23. |  |
| LUX/8 | 3.1.1 | Last Paragraph | General | This change is proposed because based on the work done so far, there has not been any clear proposal of conditions to preserve the band for long-term development of FSS | As the 3800-4200 MHz band is the only remaining part of the C-band for downlink communication, CEPT has assessed the requirements for the protection of FSS in the band and CEPT needs to propose the conditions to preserve this band for the long-term development of FSS in accordance with the objectives of the EC mandate. |  |
| FIN/11 | 3.1.1 Fixed satellite service |  | Editorial | First two paragraphs are not needed, too promotional text. See FS Sections for comparison. Also, third paragraph should be aligned more to follow style in FS section. | Delete two first paragraphs and rephrase third paragraph.  FSS has a co-primary allocation in the 3.8-4.2 GHz frequency band. This frequency band provides wide geographic coverage over continents and resistance to rain fade. This band is used for services provided to inter-tropical regions, and many earth stations are located in Europe for inter-continental communications. Applications include connectivity for enterprises and public institutions, mobile backhauling, and video contribution and distribution. |  |
| FIN/12 | 3.1.3 VLBI (Very Long Baseline Interferometry) stations | First paragraph | General | Finnish RAS community proposed to add Metsähovi in Finland also into list of RAS stations. Where such measurements are done. | (Wettzell in Germany, Ny-Ålesund in Norway, Flores and Santa Maria in Portugal, Gran Canaria and Yebes in Spain, Onsala in Sweden, Metsähovi in Finland and Matera in Italy |  |
| D/22 | Page 13, 3.1.3 VLBI | second para | Editorial | comma missing | The start frequencies of these VGOS stations, like type VGOS-992 A8, is 3960.4 MHz (Block A) (see Report ITU-R RA.2507 |  |
| D/23 | Page 13, 3.2.1 MFCN | second para | Grammar | insert “the” | The band 3400-3800 MHz has been auctioned in the majority of CEPT countries… |  |
| D/24 | Page 14, 3.2.1 MFCN | first para | editorial | Start “base station” with small letters | AAS base stations |  |
| DF/8 | 3.2.1 | 1st para | Edit | Editorial changes and reference to EC Implementing Decision on MFCN (number of EC Decision to be provided) | The 3400-3800 MHz band is harmonised for MFCN in CEPT (and in the EU in accordance with EC Decision [Ref]) and is recognised to be the 5G primary band in Europe. |  |
| FIN/13 | 3.2.1 MFCN |  | General | Make last sentence clearer | It is crucial, that the MFCN service is adequately protected. à It is crucial, that the MFCN service is adequately protected from possible interferences caused by WBB LMP deployments. |  |
| DF/9 | 3.2.2 | 1st para | Edit | Editorial correction | As a result a limited number of FSS earth stations have been maintained in the band below 3800 MHz. |  |
| D/25 | Page 14, 3.2.2 Fixed satellite service | first para | editorial/Grammar | insert “the” and delete on “l” in below | in the band below |  |
| D/26 | Page 14, 3.2.3 Aeronautical mobile (R) | first para | editorial | adjust spelling and abbreviation | for Wireless Avionics Intra-Communications (WAIC) |  |
| D/27 | Page 14, 3.2.4 Aeronautical radionavigaton | first para | editorial | delete the blanks in the frequency numbers | …the frequency band 4200-4400 MHz is globally allocated … |  |
| D/28 | Page 14, 3.2.4 Aeronautical radionavigaton | second para | editorial | abbreviaton in the section above | In addition, the frequency band is shared with WAIC systems. |  |
| D/29 | Page 15, 4 Terrestrial Wireless Broadband… | first para | Grammar | Singular | As described in the EC mandate, this WBB LMP application is aimed at… |  |
| ER/8 | 4.1 | Entire section | General | Table 2 refers to “[Review of the use case requirements in the 3.8-4.2 GHz band via Ofcomm's Shared Access framework](https://www.techuk.org/resource/uk-spf-report-review-of-use-case-requirements-in-the-3-8-4-2ghz-band-via-ofcom-s-shared-access-licence-framework.html)” by Analysys Mason in 2023.  On page 9 in the Analysys Mason report you find “Figure 3.1: 5G use cases [Source: "Ensuring wireless connectivity needs are met" study prepared by Analysys Mason and Oxera on behalf of DCMS, 2022]”.  Figure 3.1, which already is a compilation from another source, has been used as basis for compiling Table 2. That is why there are general 5G use cases in Table 2. Then there are modifications, for example for the construction class, site survey originally included drones. | Delete Table 2 and connected text. Proposal below from text in the Mandate  5G is a key enabler of the digitalisation of “vertical industries” such as transport, logistics, automotive, health, energy, smart factories, media and entertainment. Deployments of terrestrial wireless broadband systems provide local-area network connectivity (with base stations operating at low/medium power) with focus on vertical users and other terrestrial wireless use cases. |  |
| DF/10 | 4.1 | Para after Table 2 | General | Provide reference to other use case study in Annex 3, plus editorial amendment | It should be noted that vertical industries will have different connectivity requirements. Some use-cases may be time-critical in nature and have strict requirements, such as strict latency and reliability requirements as well as requirements for flexible UL/DL ratios. For example, one use case study for wireless video used in Programme Making and Special Events showed equipment used the uplink biased 2:7 TDD frame structure compared with the 3:1 frame structure used by MFCN (see Annex 3.2). |  |
| DF/11 | 4.1 | 2nd Para after Table 2 | General | Hanging paragraph  “The wide range of local use-cases, used across different industrial and non-industrial environments both indoors and outdoors, will benefit from harmonised technical conditions” | Propose delete or amend appropriately |  |
| FIN/14 | 4.1 Use cases | Last paragraph | Editorial | Add frequency range 3.8-4.2 GHz in the end for improved readability. | ANNEX 3 presents an example use-case, requiring coverage of a given industrial site, demonstrating how different BS deployment configurations can affect the coverage and deployment complexity of WBB LMP networks in the frequency band 3.8-4.2 GHz. |  |
| FIN/15 | 4.2.1 3GPP 5G NR | Table 3 | General | Add other scenarios in Deployment scenario row, shouldn't it cover all cases e.g., Urban/Sub-urban/Rural, see Tables 32, 33 and 34. Now Medium power column is misleading, since other scenarios has been studied. | These can be shown as in Tables 32, 33 and 34. Rural outdoor/indoor etc. for LP and perhaps Rural, sub-urban, urban for MP column. |  |
| LTU/2 | 4.2.1 | Table 4 | General | Explanation of Pmax is missing. It is proposed to reuse from Table 5. | Note: Pmax is the maximum mean carrier power in dBm for the base station measured as e.i.r.p. per carrier, interpreted as per antenna |  |
| Orange/7 | 4.2.1 | Table 4 | Technical | Table 4 is valid only for non-AAS | Romove AAS from the title of Table 4 |  |
| Nokia/8 | Section 4.2.1 3GPP 5G NR | Table 4 and Table 5 | Technical/Editorial | The out-of-block and out-of-band emissions in those tables represent values of the out-of-block and out-of-band emissions of non-AAS antennas as per ECC Decision (11)06. The out-of-block and out-of-band emission levels for AAS antennas in ECC Decision (11)06 are specified as TRP. As demonstrated in previous inputs to PT1 meetings (e.g. in [ECC PT1(23)217](ECC%20PT1(23)217)) the use of TRP is a more representative way of specifying the unwanted emissions levels of AAS antennas. In addition, the unwanted EIRP levels of non-AAS antennas, as specified in Tables 4 and 5, may not be achievable in practice by AAS antennas which use different antenna configurations and patterns. | Suggest to include a note in Table 4 and Table 5, highlighting the acknowledgment that the use of EIRP is not a fully representative way of defining the unwanted emissions for AAS antennas and that the use of such EIRP values in those Tables aimed to compare the coexistence situation between non-AAS and AAS antennas using the same unwanted emission levels, even though they may not be achievable by AAS in practice |  |
| Orange/8 | 4.2.1 | Table 5 | Technical | Table 5 is valid only for non-AAS  The last line was not valid for small cell WBB LMP | Romove AAS from the title of Table 5  Delete the last line |  |
| Orange/9 | 4.2.1 | Paragraph below Table 5 | Technical | The explanation on per antenna for AAS is not correct  A new sentence on AAS BS mask from 3GPP TS38.104 should be added | Delete one sentence.  Add:  The WBB MP AAS BS emission mask from 3GPP TS38.104 was used in the studies. |  |
| Orange/9 | 4.2.1 | Paragraph below Table 5 | Technical | The explanation on per antenna for AAS is not correct  A new sentence on AAS BS mask from 3GPP TS38.104 should be added | Delete one sentence.  Add:  The WBB MP AAS BS emission mask from 3GPP TS38.104 was used in the studies. |  |
| ER/20 | 4.2.1 | Table 5 | General | Text to be added under table 5 to be consistent with CEPT report. Text added in CEPT report during the joint FM60/CG4GHz meeting 17-18 April. | “For WBB MP AAS BS the emission mask in TRP from 3GPP TS 38-104 was used.” |  |
| Orange/17 | 4.2.1 | Paragraph below Table 5 | Technical | The explanation on per antenna for AAS is not correct  A new sentence on AAS BS mask from 3GPP TS38.104 should be added | Delete one sentence.  Add:  The WBB MP AAS BS emission mask from 3GPP TS38.104 was used in the studies. |  |
| LTU/3 | 4.2.1 | Table 6 | General | Improvement how to account for MIMO processing gain when addressing NF | 13 (subtract 5 for MIMO processing gain) dB  10 (subtract 5 for MIMO processing gain) dB |  |
| D/30 | Page 17, 4.2.1 3GPP 5G NR | Table 6, 4rd row, last column | General | comment “check WP5D guidance” – is this comment still necessary? |  |  |
| D/31 | Page 17, 4.2.1 3GPP 5G NR | Table 6, 4rd row and last but two row | General | wording has to be checked and possible corrected |  |  |
| GSOA/6 | 4.2.1 | Table 8 | Editorial |  | Note: The combination of power and antenna gain should be such that the maximum defined EIRP per sector/BS is not exceeded. |  |
| LTU/4 | 4.2.1 | Table 9 | General | 3GPP standard reference is missing | Note 1: From 3GPP standard  Note 2: From 3GPP standard |  |
| D/32 | Page 19, 4.2.1 3GPP 5G NR | Table 9, Headline of the Table | General | First time that the abbreviation WBS is used. Isn´t it the same like WBB? Please align it. |  |  |
| Orange/10 | 4.2.1 | Table 9 | Technical | More explanation on the frequency offset is needed | Add new texts on the frequency offset for ACLR, in-band blocking, and out of band blocking |  |
| D/33 | Page 20, 4.2.1 3GPP 5G NR | second para | Grammar | change “on” to “of” | The studies have been developed on the basis of an incremental approach |  |
| D/34 | Page 20, 4.2.1 3GPP 5G NR | Table 10, Headline | General | It seems not longer necessary to mention the first step here. Deletion proposed | Parameters for the incremental studies for non-AAS and AAS Medium Power BS |  |
| D/35 | Page 20, 4.2.2 DECT-2020 NR | first para | Grammar | quotation mark for “base station” is missing and better use “and” instead of “or” | …there is no distinction between base station' equipment and 'user device' equipment. |  |
| DF/12 | 4.2.2.1 | 1st para | Edit | Improvement to text | Table 11 summarises the technical parameters of DECT devices used in studies. These parameters are taken from the ETSI TS 103 636-2 v1.4.1 [7], with modified noise figures due to higher frequencies. The requirements in the specification apply to all DECT-2020 NR devices as no distinction between 'base station' equipment or 'user device' equipment. Devices within a DECT-2020 NR network may be considered a radio device fixed terminal (RDFT) or radio device portable terminal (RDPT) and can dynamically change their roles depending on the network’s needs. Consequently, only a single set of parameters for DECT-2020 NR is considered, i.e. all technical parameters for radio devices in Table 11 apply equally to all devices in the WBB LMP network. |  |
| Orange/12 | 4.2.2 | Paragraph above Table 12  Paragraph above Table 15 | Technical | Table 13, 14 frequency offsets are different from Table 12 | Add table 13 and 14 in the text |  |
| Orange/13 | 4.2.2 | End of the section | Technical | Out of band blocking is missing | Out of band blocking should be added |  |
| DF/13 | 4.2.2.1 | Table 11 | Edit | Add row for TPC  Editorial correction on Rx receiving level | Transmitter Power Control - In the range -40 dBm to Max EIRP (23 dBm)  20 dB to reference sensitivity  20 dB to reference sensitivity |  |
| Orange/11 | 4.2.2 | Table 11 | Technical | dBm should be replaced by dB | Replace dBm by dB |  |
| ER/16 | 5.1.1 | Table 18 | General | The column “Generic case” has no explanation and is used as comparison with the case studies. This is the only place in the document that a “generic case” is referenced, so it is unclear what it is referring to. | An explanation should be provided. |  |
| LTU/5 | 5.1.1 | Last paragraph | Editorial | Adjustment to the text | A suitable case study should be accompanied with the reasonings on the assumptions. |  |
| LTU/6 | 5.2.1.1 | Tables 23 and 24, Title | Editorial | Adjustment of the titles of tables | Table 23: Antenna characteristics for 5G commercial AAS base station to be used in the coexistence studies  Table 24: 5G commercial characteristics and deployment related parameters |  |
| D/36 | Page 24, 5.1.1.1 und 5.1.1.2 | Headline | Editorial | Rephrasing title- structure like FSS part, Old sentence not needed anymore | *System parameters for PtP FS systems*  *FS long term protection criteria* |  |
| D/37 | Page 24, 5.1.1.2 | 1th para | Editorial | please delete the space in percent | …that occur for less than 1 percent of the time |  |
| D/38 | Page 24, 5.1.1.2 | 2nd para | Grammar | Singular: please delete the “s” of reasoning | A suitable case study could be submitted with the reasoning on the assumptions |  |
| GSOA/7 | 5.1.2.2 | Table 22 | General | Last part of the note under the table reflects an outdated matter for WRC-23 cycle discussion between WP4A and WP5D. This is no longer relevant. | NOTE: Studies using these short-term protection criteria could be assessed on the basis that these values were put forward by WP 4A to facilitate and complete the work for WRC-23 agenda items and these values may evolve in the future based on inputs to the ITU-R. |  |
| D/39 | Page 26, 5.1.2.2 | Note in the table | General/Editorial | The link to the relevant document is missing |  |  |
| D/40 | Page 26, 5.2.1.1 | Table, 3rd row | Editorial | Please insert the Link to the relevant Table of the Annex 3 |  |  |
| DF/14 | 5.2.1.1 | Table 23, 1.1 – Antenna pattern | General | Text reads:  “Refer to the extended AAS model in Table A of Annex 3”  But this is not the correct reference | Correct reference in table |  |
| Orange/14 | 5.2.1.1 | Table 23 | General | Annex 3 of this report does not provide AAS antenna parameters | Delete “Table A of Annex 3” |  |
| D/41 | Page 26, 5.2.1.1 | Table, 2nd to 4th row, 2nd column | Editorial | For better reading insert some brackets () |  |  |
| D/42 | Page 29, 5.3.1 | Table 25, 3rd row, last column | Editorial | the term “land rural” is not necessary, ITU-R P.1546-6 contains only the following wording : “Where the receiving/mobile antenna is on land in a rural or open environment the correction is given  by equation (28b) for all values of h2 with R2’ set to 10 m |  |  |
| D/43 | Page 31 | Table 27, Between WBB LMP and FS as well as FSS | General | Indoor cases were also studied | WBB LP (outdoor & indoor) |  |
| LTU/15 | 6 |  | General | VGOS study is only referenced in the Annex 1 (section A1.5) and not summarised in the main body, hence it is proposed to create a **new** **section** with the short summary, as for other studies, for completeness. | **6.5 Between 3GPP WBB LMP and other applications**  **6.5.1 Study 1 – Sharing study between WBB LMP and VGOS in 3.8-4.2 GHz**  Detailed study can be found in Attachment 14.  Separation distances for the protection of the GOW from WBB LMP base stations (BS) are calculated via worst case Minimum Coupling Loss (MCL). The protection criterion of -135 dBm/MHz is used.  The results in this sharing study indicate that the maximum required separation distances to protect the GOW from WBB LMP may go up to 125 km for medium power BS and up to 100 km for low power BS for a worst-case scenario. The results for the medium power BS also show that a cross-border interference could occur. |  |
| Orange/15 | 6 | Whole section | General | Company/country names related to the studies should be deleted | Delete company/country names |  |
| LTU/9 | 6.1.1 | Figure 2, title | Editorial | To correct that figures are for both LP and MP | Figure 2: The minimum separation distance between two WBB LMPs to satisfy the I/N=-6dB protection criterion |  |
| D/44 | Page 32, 6.1.1 | Table 28 | Editorial | Name of table missing -> taken from text above | **Table 28: High level WBB LMP operational and deployment parameters** |  |
| D/45 | Page 32, 6.1.1 | 1th para below Table 28 | Grammar/editorial | Plural. Shorten the sentence for better reading. | …where the dynamic nature of WBB LMP services were captured. … , ,creating an interference CDF. For each separation… |  |
| Orange/16 | 6.1.1 | Table 28 | Editorial | Table title was missing | Add Table title |  |
| LTU/10 | 6.1.2 |  | Editorial | Improvement of readability | See Annex |  |
| DF/15 | 6.1.2 | 5th para | Edit | Editorial | The separation distance D corresponding to 5%, 10%, 20%, and 30% throughput loss for each case was obtained |  |
| DF/16 | 6.1.2 | Bullet 1 after Table 31 | Technical | To reflect the fact that synchronisation does not address all interference mechanisms | 1) Synchronisation between two neighbouring local area networks which may address base-to-base or terminal-to-terminal adjacent channel interference only |  |
| D/46 | Page 33, 6.1.2 | second para, 3rd row | Grammar | after a comma start with small letters | …is modelled by a single BS, two neighbouring local area networks are… |  |
| D/47 | Page 33, 6.1.2 | para below figure 3 | General | Rephrasing of the sentence necessary | The BS-to-BS link propagation model for this case was Recommendation ITU-R P.452 [14] as well as Recommendation ITU-R P.2108 [10] with 50% Clutter loss |  |
| D/48 | Page 34, 6.1.2 | 1th para, second last sentence | Grammar | “an” instead of “a” | …from the WBB LMP BS and is simulated with an omni-directional 0 dBi antenna… |  |
| D/49 | Page 34, 6.1.2 | 1st bullet below the 1th para | General | complete the definition, Pr is missing | F is the frequency in MHz and is the median power level in dBm |  |
| D/50 | Page 34, 6.1.2 | 2nd para | Grammar | start “local area” with small letters, “an” instead of “a” | at the local area network cell coverage edge with an omni-directional antenna |  |
| FIN/16 | 6.1.2 Study 2 | Table 29 and Table 30 | General | These tables relate to coordination between different local area networks, co-channel and adjacent channel. Tables don't necessarily relate to coordination between neighbouring countries, so why not be simple and use Co-channel instead of Non-preferential frequency and Adjacent channel instead of Preferential channel as in table 34.  Using two different terms confuse reader, since the notes below the tables describes exactly the same. | Align terminology with table 34. |  |
| ER/9 | 6.1.2 | Table 29 and 30 | General | Both tables have same heading. | Difference needs to be cleared between two tables. And correct the table no 28 to 31 in text under table 30. |  |
| D/51 | Page 34, 6.1.2 | last para, below table 30 | Grammar | start “field strength” with small letters | the field strength values |  |
| D/51 | Page 35, 6.1.2 | Table 31, Header of the table, right column | Grammar | start “value” with small letters | Field strength value (dBµV/m/5 MHz) |  |
| D/52 | Page 35, 6.1.2 | last para | Editorial | insert “and” between the percentages | …throughput losses of 10%, 20%, and 30% … |  |
| DF/17 | 6.1.3 | Table 32 | General | Separation distances from Orange's study do not seem to come from the study referenced in para 6.1.2 (and linked in the annex 1.1.2) | Provide correct reference |  |
| Orange/18 | 6.1.3 | Paragraph below Table 32 | Technical | No additional requested separation distance more than 250m | Add a text: more than 250m |  |
| Orange/19 | 6.1.3 | Paragraph above Table 34 | Editorial | To be considered is enough | Delete “by national regulators” |  |
| D/53 | Page 38, 6.2.1 | second last para | General | Studied height is missing (for comparison reasons) | …to a co-frequency FS receiver (50 m above ground for generic case, 80 m for real deployment/average height and 180 m for real deployment/worst case). |  |
| D/54 | Page 38, 6.2.1 | last para | General | Height clarification | …to protect FS (80 m antenna height) from WBB LMP |  |
| LTU/11 | 6.2.2 |  | Editorial | Use term “terrain” instead of “altimetry” | See Annex |  |
| UK/8 | 6.2.2  Study 2 | Para 2 | Technical | See UK/3.  Additional comment:  The study from Italy uses the maximum licenced WBB LMP BS power with the antenna set with 0deg downtilt and azimuthally aligned with the victim BS.  Therefore, further coordination mechanisms such as azimuthal offset of the WBB BS antenna away from the FS victim receiver, or reduced transmit power at the WBB BS, could allow for deployment of a WBB LMP BS within the exclusion zone determined in this study.  To clarify that further coordination could allow WBB LMP BS deployments within the exclusion zone determined in this study, additional text is added. | (i.e. geographical area where WBB BS transmitters are not allowed in lieu of any further coordination mechanisms[[2]](#footnote-3)) |  |
| I/7 | 6.2.2 | Paragraph 7 Page 39 | Editorial | There is a minus sign which must be deleted. | the flat terrain and the real terrain elevation, some conclusions can be drawn:   The altimetry of the real terrain should be taken into account in the coexistence assessments on a case-by-case basis. |  |
| I/8 | 6.2.2 | Paragraph 10 Page 39 | General | Text proposal to better clarify that mitigation techniques could be used when needed and on a case by case basis during coordination. | taking into account the use of appropriate mitigation techniques that could facilitate coexistence on a case by case basis. |  |
| I/9 | 6.2.4 | Paragraph 1 Page 41 | **Editorial** | The real terrain hinders or favours protection, not data | because real terrain can not only hinder, but also favour propagation |  |
| UK/9 | 6.2.4  Summary and Conclusions | Para 3 | Editorial | Editorial changes to improve readability. | One of the studies shows the importance that real terrain data are taken into account in the coexistence assessments, because the impact of real terrain data on spectrum propagation can result in not only reduced, but also increased separation distances required between WBB LMP and FS, |  |
| I/10 | 6.2.4 | Paragraph 3 Page 41 | General | See comment I/1 | Nevertheless, appropriate mitigation techniques could be considered during coordination on a case by case basis to could be considered during coordination on a case by case basis to facilitate coexistence between WBB and FS systems, both at national level and with the neighbouring countries. |  |
| UK/10 | 6.2.4  Summary and Conclusions | Para 3 | Technical | See UK/3. | and therefore impact the areas in which WBB LMP BS deployments need to excluded in lieu of any further coordination mechanisms[[3]](#footnote-4) (exclusion zones) accordingly. |  |
| UK/11 | 6.2.4  Summary and Conclusions | Para 4, 5 | Editorial | Editorial changes to improve readability. | In conclusion, according to the analyses, it is not possible to define generic technical conditions that guarantee the protection of FS, including its long-term development. Instead, a case-by-case analysis is required. In addition, due to the large separation distances that may be necessary, coexistence between FS and both low and medium power WBB systems may require cross border coordination and related bilateral or even multilateral agreements among neighbouring countries on a case-by-case basis.  Nevertheless, appropriate mitigation techniques can be applied to facilitate coexistence between WBB and FS systems, both at national level and with the neighbouring countries. |  |
| GSOA/8 | 6.2.4 | Paragraph 5 | General | See comment GSOA/2 | Nevertheless, appropriate mitigation techniques could be considered during coordination on a case by case basis to facilitate coexistence between WBB and FS systems, both at national level and with the neighbouring countries. |  |
| ER/9 | 6.3.1 | Table 36 | Editorial | - | Change ‘long term’ to ‘short term’ in last column. |  |
| LTU/13 | 6.3.2 |  | Editorial | Instead of abbreviation ES to use full term “earth station” | See Annex |  |
| GSOA/9 | 6.3.2 | Table 37 | General | Values of clutter loss used are needed | FSS ES Receiver  30% at all times  WBB LMP  50% (urban)  0% (rural) |  |
| GSOA/10 | 6.3.2 | Figure 4 | General | The values of separation distance provided in the figure are quite lower compared to those of other studies. Is the clutter loss the main reason? | Figure 4: The minimum separation distance to satisfy the I/N=-10.5dB FSS ES long-term protection criterion |  |
| GSOA/11 | 6.3.2 | Paragraph 3 | General |  | The attenuation loss due to the terrain and buildings was determined using Recommendation ITU-R P.452-16 [14] and the terrain path profile. The terrain path profile was computed using a combination of the SRTM database (1 Arcsec resolution) and the French IGN building database (5 m resolution). |  |
| GSOA/12 | 6.3.4 | Paragraph 2 | Editorial | Deletion of duplicated word | The results of this single-entry study indicate that separations distances ranging |  |
| GSOA/13 | 6.3.4 | Paragraph 3 | Technical | Consistency between assumptions and results needs to be verified. | Assuming clutter is present at one end of the propagation path and considering that the WBB base station and the FSS earth station are pointing towards each other, the results indicate that the longest separation distance is approximately 16.5 km for medium-power WBB base stations without AASs (corresponding to a maximum EIRP of 49 dBm/5 MHz). |  |
| GSOA/14 | 6.3.5 | Last paragraph | General | The identified protection measures are needed | Based on the assumptions considered in this study, the analysis concluded that specific actions or measures could be implemented, as appropriate, to facilitate the deployment of LMP 5G systems while protecting existing and future use of FSS systems. |  |
| GSOA/15 | 6.3.7 | Last paragraph | Editorial | Acronym to be detailed | … (up to approximately 11.4 km for the DLR FSS ES case). |  |
| GSOA/16 | 6.3.8 | Paragraph 1 | General | Clarification of what is meant “with one sited clutter” with a footnote | 6 Clutter loss is applied at one end of the propagation path (29-31 dB of attenuation) |  |
| GSOA/17 | 6.3.8 | Paragraph 5 | General | See comment GSOA/2 | Appropriate mitigation techniques could be considered during coordination on a case by case basis to facilitate coexistence between WBB and FSS systems, both at national level and with the neighbouring countries. |  |
| LTU/14 | 6.4 | Title | Editorial | The adjustment of section headings and some other minor editorials. It is proposed to remove the heading for subsection 6.4.1 as it does not reflect the content | See Annex |  |
| DF/18 | 6.4.3.1 | 1st para | Edit | Editorial improvement | In the co-channel case with 100 MHz 3GPP WBB channels, one 6.912 MHz DECT-2020 NR interferer has been assumed to be operating in each 10 MHz of the 100 MHz 3GPP WBB channel to assess the effect of aggregated interference from DECT-2020 NR, which represents the theoretical worst case and not necessarily experienced in practice. |  |
| ER/10 | 6.4.3.1 | Last para, last line | General | May increase collision as 3GPP systems do not use LBT mechanism. | **Current text:** These polite protocols would enhance spectrum sharing but have not been considered in the MCL analyses.  **Proposed text:** These polite protocols may enhance spectrum sharing but have not been considered in the MCL analyses. |  |
| LUX/9 | 6.3.5 | Paragraphs 3 and 4 | Editorial | The two paragraphs should be in bullet format | * A static analysis that provides a clear picture of the various parameters impacting the interference received by the FSS ES from WBB LMP BS and allows identifying possible ways to mitigate the interference by applying site specific adjustments.   A statistical case study analysis which explores site-specific configuration for two locations of FSS hubs and allows assessing the impact of the terrain and environment around the FSS ES in the received interference, including considering both long-term and short-term interferences. |  |
| LUX/10 | 6.3.5 | Last paragraphs | General | Clarification of the mitigation techniques that could be used to facilitate the sharing as they could be useful for the elaboration of the ECC Recommendation for guidance to administrations.  Redrafting and restructuring of the paragraphs. | Based on the assumptions considered in this study, the analysis shows that where there is a necessity to protect an FSS ES, the following specific actions or measures could be implemented, as appropriate:   * Blocks of vegetation or building that stand in the direct line between the two antennas create clutter loss that attenuates the power of interfering signal. Therefore, it is beneficial to avoid positioning a WBB LMP BS antenna at any place where there is line of sight and direct visibility with an FSS earth station. * Deploying the lower power of the WBB BS at the lowest altitude above ground level benefits the sharing result and reduces the separation required between WBB LMP and FSS ES. * Avoiding pointing the WBB LMP towards the FSS earth station reduces the level of interference received at the FSS receiver, thus reducing the required separation distance. It is therefore suitable to position the WBB LMP BS antenna so that it does not point in the direction of the FSS earth station that would be seen, in the best case, from the backside lobe where the BS antenna gain is the lowest. * Using terrain data could enhance the analysis and define more accurate conditions of operation of the two systems. * Free space model can be used for fast assessment, when the distance between FSS ES and LMP BS is lower than the distance to the horizon for the assumed antenna heights (in this study this distance will correspond to15 km). * Finally, the study concludes that a coordination distance of 40km around an FSS ES location, with no consideration of terrain, is suitable to protect FSS ES receivers. Below that distance the use of one or combination of some of the various mitigation techniques mentioned above could be implemented on a case by case basis to minimize the interference received, reduce the required separation distance between the WBB LMP and the FSS earth stations and facilitate the deployment of LMP 5G systems while protecting existing and future use of FSS systems. |  |
| UK/12 | 6.3.8  Summary and Conclusions | Para 2, 4, 5 | Editorial | Editorial changes to improve readability. | Some studies show that the real terrain should be taken into account in the coexistence assessments, because the impact of real terrain data on spectrum propagation can result in not only reduced, but also increased separation distances required between WBB LMP and FSS. Resulting separation distances from those studies range in 5.3-17.2 km for WBB Low Power stations and 17.5-70 km for WBB Medium Power stations when considering long term protection criterion. One study considering the real terrain and the short-term protection criteria indicated separation distances of up to 9.3 km for WBB LP and 35 km for WBB MP for one earth station example.  The results of Study 5 suggest a coordination distance around an FSS ES location of 40km is suitable to protect FSS ES receivers, below which the use of one or combination of some of the various mitigation techniques presented in that study could be implemented to minimize the interference received and reduce the required separation distance between the WBB LMP and the FSS earth station.  According to the analyses, it is not possible to define technical conditions that guarantee the protection of FSS, including its long-term development, but instead a case-by-case analysis is needed. In addition, coexistence between FSS and both low and medium power WBB systems may require cross border coordination and related bilateral or even multilateral agreements among neighbouring countries on a case-by-case basis.  Appropriate mitigation techniques can be applied to facilitate coexistence between WBB and FSS systems, both at national level and with the neighbouring countries. |  |
| I/11 | 6.3.8 | Paragraph 4  Page 49 | General | See comment I/1 | Appropriate mitigation techniques could be considered during coordination on a case by case basis to facilitate coexistence between WBB and FSS systems, both at national level and with the neighbouring countries. |  |
| D/56 | Page 47, 6.3.8 Summary and Conclusions | Table 38 | General/editorial | please check the content of the table, 4rd column "no clutter" twice. Is this correct? |  |  |
| D/57 | Page 51, 6.4.6 Conclusions for DECT-202 NR | last para | editorial | delete twice “for” before DECT… | between DECT-2020 NR WBB LMP and 3GPP WBB LMP networks, and between DECT-2020 NR WBB LMP… |  |
| D/58 | Page 52, 6.5 | new section inserted | General/editorial | Whole summary is missing- last time seen: Minutes - ECC PT1(24)060\_Annex 12 from 29.01.2024 (approved besides brackets), according to other studies | * 1. **CCompatibility studies with other applications**      1. **Study 1 – between WBB LMP and VGOS in 3.8-4.2 GHz [Germany]**   Study is in A1.5.1.  The results in the sharing study between the Geodetic Obseratory Wettzell (GOW) type VGOS-992 and WBB LMP BS indicate that the maximum required separation distances to protect the GOW from WBB LMP may go up to 125 km for medium power BS and up to 100 km for low power BS for a worst-case scenario. The results for the medium power BS also show that a cross-border interference could occur.  The study recognizes that for the moment these observations, which are operating in the spectrum bands of the 2-14 GHz range, have no radio astronomy allocation in 3.8-4.2 GHz and therefore cannot claim interference protection on international or European level. [Nevertheless, administrations are urged to take all practicable steps to protect these observatory operations from harmful interference.] Measures to minimise restrictions on WBB LMP roll-out could be, such as:  restricting the transmitter power of the WBB LMP BS;  reducing the antenna height of the WBB LMP BS;  adjusting the antenna elevation angle of the WBB LMP BS;  adjusting the direction of the antenna of the WBB LMP BS (away from Wettzell). |  |
| LTU/7 | 6, 7 |  | General | Remove contributors affiliations from the sections 6 and 7 | See Annex |  |
| LTU/8 | 6, 7 |  | General | Add reference to the relevant Attachment | See Annex |  |
| D/59 | Page 53, 7.1.1 | 1th para | Editorial | Shorten the sentence for better reading. Furthermore second sentence Singular. | …using Monte-Carlo simulations. The protection threshold for 5G MFCN BS and WBB LMP BS is I/N=-6 dB. |  |
| D/60 | Page 53, 7.1.1 | 2nd para, 2nd sentence | Editorial/Grammar | “full stop” missing | …were sourced from the agreed parameters for studies. Non-AAS… |  |
| UK/13 | 7.1.1  Study 1 [Nokia] | Para 2 | Technical | The analysis and results in A2.1.1 rely on the out-of-band emissions mask defined in Table 5 of this document, so it is not correct to say that no BEM elements are contained in the study results. Proposed to resolve this by deleting this sentence. |  |  |
| LTU/16 | 7.1.1 | 4th paragraph | Editorial | Improved readability | The results of the study indicate that to satisfy the I/N protection criterion of MFCN, the separation distances between MFCN BS and WBB LP BS are below 250 m when both are located at an urban environment and approximately 850 m when both are located in a rural environment. Separation distance between MFCN BS and WBB MP networks with EIRP 49dBm/100MHz and 51dBm/100MHz located in urban and dense sub-urban environments is below 250 m. When both networks were located in rural environments, the separation distance to protect MFCN services was approximately 1 km. |  |
| D/61 | Page 54, 7.1.1 | para below Table 41 | editorial, grammar | “full stop” missing | …creating an interference CDF. For each separation distance… |  |
| D/62 | Page 54, 7.1.1 | econd para below Table 41 | editorial, general | the word “beween” has to be deleted | …the separation distances for a Low Power WBB LMP BS are… |  |
| D/63 | Page 54 to 55, 7.1.1 | Figure 5 to 7 | General | Titles missing |  |  |
| LTU/17 | 7.1.2 | 2nd paragraph | Editorial | The sentence refers to another study for comparison but the section should remain within its objective hence it is proposed to delete the comparison | This study provides Monte-Carlo simulations results of interference from WBB LMP BS to 5G MFCN BS by modelling the local area network as a single BS and 5G MFCN network as a single BS. The 5G MFCN BS out-of-band blocking characteristics used in the simulation is a type 1-H (-15 dBm7 at frequency offset from the band edge). This single BS to single BS simulation scenario does not take into account the inter-cell interference within 5G MFCN network. |  |
| DF/19 | 7.1.2 | 3rd para | General | Text notes that the study itself does not adequately model the scenario. If this is the case what is the relevance of this study in the report? | To note. No proposal |  |
| DF/20 | 7.1.2 | 5th para | General + edit | Three points separated into numbered bullet points to aid readability.  Correct MPCN to MFCN  Add text to note synch and semi-synch does not address all interference mechanisms | 1. For unsynchronised operation between WBB LMP in 3800-3860 MHz and 5G MFCN below 3800 MHz is difficult without coordination; 2. The LMP BS with in-band power level <= 30 dBm/100 MHz in 3860-4200 MHz can co-exist with 5G MFCN below 3800 MHz in unsynchronised operation without coordination;   synchronization or semi-synchronization between WBB LMP and 5G MFCN is a good solution to ensure a good co-existence when considering BS-to-BS or terminal-to-terminal interference |  |
| D/64 | Page 56, 7.1.2 Study 2 [Orange] | last para of section 7.1.2 | Editorial/general | number of the study has not be inserted, from our understanding the word “co-existence” is missing | The conclusions of this study are that: 1) For unsynchronised operation between WBB LMP in 3800-3860 MHz and 5G MFCN below 3800 MHz co-existence is difficult |  |
| LTU/18 | 7.1.3 |  | General | Removing the word “regulatory” as the study should provide the results of simulations | See Annex |  |
| D/65 | Page 56, 7.1.3 Study 3 [Orange] | first para | Editorial | shorten the sentence for better reading | …the victim 5G MFCN BS is placed in the centre of this network cluster.,In this way … |  |
| DF/21 | 7.1.3 | 3rd para | Edit | Two points separated into numbered bullet points to aid readability. | WBB low power non-AAS BS with an EIRP of 31 dBm/100 MHz with an antenna gain of 12 dBi is considered. Two types of WBB medium power base stations are considered:   1. Non-AAS BS with transmit power of 49 dBm/100 MHz EIRP and 51 dBm/100 MHz EIRP with an antenna gain of 16 dBi; 2. AAS BS with 4x4 AAS antenna configuration (antenna gain 18.5 dBi), the AAS BS transmit power of 49 dBm/100 MHz EIRP (30.5 dBm/100 MHz TRP) and 51 dBm/100 MHz EIRP (32.5 dBm/100 MHz TRP). |  |
| D/66 | Page 56 to 57, 7.1.3 Study 3 [Orange | Introductory sentence of the different tables | General | It has to be discussed if we can use here the word “regulatory” |  |  |
| LTU/19 | 7.1.3 | Tables 43 and 44 | General | Aligning table headers and OOBE column wrt to “per cell” text |  |  |
| D/67 | Page 57, 7.1.3 Study 3 [Orange] | Sentence below Table 43 | Editorial | please correct the typo “MP” (medium power) | …an OOBE of WBB MP AAS BS should be -54 dBm/MHz TRP |  |
| DF/22 | 7.1.3 | Bullet 4 between Tables 44 and 45 | Edit | To note 10 m antenna height for terminals were studied.  Synchronisation is not relevant here as the analysis is into the BS receiver, and an adjacent synchronised terminal will have maximum interference as it will be transmitting while the adjacent channel BS is in receive mode | The regulatory technical conditions for WBB LMP terminals, operating with antenna heights up to 10 m, in 3800-4200 MHz with 5G MFCN below 3800 MHz - Table 45 |  |
| LTU/20 | 7.1.3 | 3rd paragraph | General | The sentence is proposed to be incorporated into Table 43 as the note to be associated with the OOBE for AAS BS case. In addition the text has been amended to clarify the applicability of values for the specific environment following the study assumptions. | See Annex |  |
| LTU/21 | 7.1.3 | 4th paragraph | General | This seems a repetition of what is provided at the beginning of section and in Tables 42-45 (but in different form) hence it is proposed to keep only the material in tables and delete the paragraph |  |  |
| D/68 | Page 57, 7.1.3 Study 3 [Orang]e | last two para´s | General | From our understanding this study was updated. All information are now in the introduction part of this section. Therefore the deletion of the last two paragraphs of this section is proposed. |  |  |
| LTU/22 | 7.1.3 | 5th paragraph | General | If the study has not been updated before launching public consultations it is suggested to keep only the factual information in the report. | It should be that two major European 5G MFCN vendors have confirmed that the 5G AAS MFCN BSs deployed in Europe within 3400-3800 MHz belong to another category (1-H) more robust to interference due to blocking.. |  |
| I/12 | 7.1.4 | Paragraph 2  Page 58 | General | See comment I/2  Proposal to replace “toolbox” with “guidelines” or “recommendations” | The particular semi-synchronisation could be further investigated as part of relevant guidelines in order to implement this approach on case-by-case basis in order to ensure more efficient usage of the spectrum as appropriate. |  |
| DF/23 | 7.1.4 | Para above Table 46 & Table 46 | General | Reduction of separation distances given in percentages. Would be useful to include the actual distances. Could not find these tabled in the study | Propose separation distance values are added. |  |
| D/69 | Page 58, 7.1.4 Study 4 [Qualcomm] | para below Table 46 | Editorial | Delete the “l” | , the tolerable interference |  |
| GSOA/18 | 7.1.4 | Paragraph 6 | General | Propose to replace “toolbox” with “guidelines” | The particular semi-synchronisation could be further investigated as part of relevant guidelines in order to implement this approach on case-by-case basis in order to ensure more efficient usage of the spectrum as appropriate. |  |
| D/70 | Page 59, 7.1.5 Study 5 [Orange] | first sentence | Editorial | Please formulate a sentence. | The study is based on 5% throughput loss. |  |
| D/71 | Page 59, 7.1.5 Study 5 [Orange] | second para, 2nd sentence | Grammar | Plural | …in different rooms on the same floor or on different floors |  |
| D/72 | Page 59, 7.1.6 Study 6 [France] | first sentence | Editorial | Please formulate a sentence. | Study is in A2.1.6 . |  |
| D/73 | Page 59, 7.1.6 Study 6 [France] | second para | Editorial | delete the dash between “Study” and “6” and insert a space.  Add an “and” instead of a dash | The Study 6 proposed a combination of WBB LMP out-of-band emission level and blocking requirement |  |
| LTU/23 | 7.1.6 | Table 48 | General | Convert table into bullets | The examples of the calculated field strength levels at border of WBB LMP licensed area to be measured at the 5G MFCN BS antenna height are:  34.5 dBµV/m/ 100 MHz for urban environment  32.8 dBµV/m/ 100 MHz for suburban environment  32.2 dBµV/m/ 100 MHz for rural environment |  |
| D/74 | Page 60, 7.1.6 Study 6 [France] | Table 48, Headline and Header in Table 48, right column | Editorial | please write Field Strength instead of the abbreviation in order to avoid a confusion with FS which is the abbreviation for Fixed Service | **Table 48: Field strength value at border of WBB licensed area to be measured at the 5G MFCN BS antenna height**  **Field strength below 3800 MHz** |  |
| LTU/24 | 7.1.6 | Table 48 | Editorial | Pending resolution of comment LTU/23, correct, if table remains, the format of the units (using text instead of equation) | dBµV/m/ 100 MHz |  |
| D/75 | Page 60, 7.1.6 Study 6 [France] | Table 49 and 50, right column, second row | Editorial | replace the word “desens” which does not exists with desensitization | -15 dBm at 6 dB desensitisation |  |
| D/76 | Page 60, 7.1.7, Study 7 [Ericsson] | 1th para | Editorial | Please start”Monte” with a capital letter | In this study a Monte-Carlo analysis |  |
| D/77 | Page 61, 7.1.7, Study 7 [Ericsson] | 4th para of this section | Grammar | add the “d” at synchronized | For efficient use of spectrum synchronized operation |  |
| LTU/25 | 7.1.7 | 6th paragraph | General | The paragraph compares some assumptions with other studies. Either to be deleted or moved to the section 7.1.8 with appropriate adjustments to fit that section |  |  |
| ER/11 | 7.1.7 | Para 6 | General | The para to be removed, nothing to do with study conclusion. Assumprions of the study are clearly mentioned in para 1. Furthermore, the section is dedicated for result of a specific study in question not comparison with other studies. | **Para to be removed:** ~~Study 7 is quite similar to the Study 2 with Monte-Carlo simulations of interference from WBB LMP BS to 5G MFCN by modelling the local area network with a single BS and 5G MFCN network as a single BS, this single BS to single BS simulation scenario does not take into account the inter-cell interference within 5G MFCN network, the simulation results are worse than that of the Study 3 where the 5G MFCN network is modelled as multi-sites (cluster of 19 tr-sector sites: 57 cells) cellular network. Both Study 2 and Study 7 considered the 5G MFCN BS type 1-H with an out of band blocking level of -15 dBm at frequency off\_set of 60 MHz. Study 7 considered a 5G MFCN BS receiver 5 dB noise figure, while the study 2 used a 5G MFCN BS noise figure of 3 dB.~~ |  |
| LTU/26 | 7.1.8 | “Issue 1” | General | Square brackets around the text. Remove the square brackets or remove the text within the square brackets together with the brackets | [if the reference throughput (over which the loss is calculated) did not cover the intra-network intercell interference and the associated conclusion (e.g. -43dBm/5 MHz TRP for WBB MP AAS, -40dBm/MHz EIRP for WBB LMP non-AAS) would appear to be very pessimistic and then not realistic.] |  |
| LTU/27 | 7.1.8 | “Issue 2” | General | To be consistent with the resolution of comment LTU/20 | See comment LTU/20 for consistent approach |  |
| UK/14 | 7.1.8  Summary and Conclusions | Issue 2  Para 1 | Editorial | Editorial changes to improve readability, including removing duplication of references to receiver blocking and 60 MHz separation. | Study 7 suggests that defining only a strict BEM will not solve the interference problems from unsynchronised WBB LMPs to MFCN below 3.8 GHz, as the MFCN receiver blocking also needs to be considered. Study 3 and Study 7 conclude that, to prevent unsynchronised WBB LMPs causing interference to MFCN below 3.8 GHz due to the MFCN receiver blocking, a 60 MHz frequency separation is needed between the two networks. Study 3 suggests that for Medium Power AAS BS operating in 3860-4200 MHz, an OOBE of -35 dBm/MHz TRP can provide sufficient protection, but in Rural Areas with large cell size of 5G MFCN network, an OOBE of WBB MR AAS BS should be -54 dBm/MHz TRP. |  |
| ER/12 | 7.1.8 | Para 3, Issue 3  Issue 2 and 1 | General | - | **Current text:** Issue 3: Need for defining blocking levels below 3.8 GHz for WBB LMPs to ensure they are not impacted by the emissions of MFCN below 3.8 GHz  **Proposed text :** Need to define Better Rx blocking levels below 3.8 GHz for WBB LMP BS to avoid blocking of WBB Rx from MFCN transmission below 3.8 GHz incase of unsynchronized operation.  Issue 2 should become issue 1 as agreed in all studies i.e. 60 Mhz needed to avoid MFCN blocking. |  |
| D/78 | Page 62, 7.1.8 Summary and Conclusions | 2nd bullet below table 53 | General | square brackets have to be solved |  |  |
| ER/17 | 7.1.8 | Table 53 | General | Change table 53 title and text above the table.  The unwanted emission level proposed are to ease the coexistence not as protection criteria of MFCN. | **Current title:** The conclusions from Study 3, Study 6 and Study 7 regarding the need for lower unwanted emissions for WBB LMPs to protect MFCN below 3.8 GHz  **Proposed title:**  Proposed unwanted emissions for WBB LMPs BS to facilitate coexistence with MFCN below 3.8 GHz for unsynchronized scenario.  Table 53 should be updated with underlying assumptions and resulting separation distances, modified table provided below. |  |
| ER/18 | 7.1.8 | Table 53 | General | Text to be added below table 53 | **From Issue 2 move this text under table 53”** Analysis in Study 3 suggests that for Medium Power AAS BS operating in 3860-4200 MHz, an OOBE of -35 dBm/MHz TRP can provide sufficient protection, but in Rural Areas with large cell size of 5G MFCN network, an OOBE of WBB MR AAS BS should be -54 dBm/MHz TRP.  **Also add:** Furthermore studies also highlight scenarios where unsynchronzied,operation will not be feasible, synchronization or other coordination measures are required. (ref study 3) |  |
| Orange/20 | 7.1.8 | Table 55 | General | The additional requirement of unwanted emissions will facilitate the co-existence | To replace “to reduce coordination cases” by “to facilitate the co-existence” |  |
| D/79 | Page 63, 7.1.8 Summary and Conclusions | Table 55, second row, left column | General | more precise wording proposed | -45 dBm/MHz conducted power per BS (sector) for LP & MP non-AAS BS (Sector)  -45 dBm/MHz TRP per BS (sector) for MP AAS BS |  |
| LTU/28 | 7.1.8 | Table 57 | General | Alignment of table caption and heading with Table 48 | See comment LTU/23 for consistent approach |  |
| Orange/21 | 7.2.1 | Table 58 | Technical | The results in Table 58 are difficult to understand. NFD was not defined nor described in section 4.2.2 | Further clarification is needed, otherwise delete this table. |  |
| I/13 | 7.1.8 | Paragraph 4  Page 63 | General | See comment I/2  Proposal to replace “toolbox” with “guidelines” or “recommendations” | CEPT is developing recommendations for administrations to provide guidance on the approach to coexistence in the band. |  |
| UK/15 | 7.1.8  Summary and Conclusions | Issue 4  Para 1 | General | See UK/1. | WBB terminals (fixed/installed, and mobile/nomadic) |  |
| ER/13 | 7.1.8 | Issue 1 (unwanted emissions below 3.8 GHz): | General | Remove bullets below table 53 on study 7. For following reason :   * The results of the studies are not comparable, one is conducted values and other is EIRP. * There is evidence from one study that more stringent values required in rural area.   Other study finds with proposed conducted level and 60 MHz GB the separation distance should be minimum 350 for MP which is more than 200 m cell radius considered in the same study. How coordination points are reduced in this case ? and for sub-urban/ rural envirnoment separation distance is higher. | * ~~Study 7 considered throughput loss metric for the MFCN and the Monte-Carlo simulation was performed over a single MFCN Macro BS isolated from the network i.e. without calculating intra-network inter-cell interference (i.e. interference caused from adjacent cells of the same MFCN) in the assessment of the throughput loss.~~ * ~~Such approach may result in overestimating the degradation of the MFCN throughput. [if the reference throughput (over which the loss is calculated) did not cover the intra-network intercell interference and the associated conclusion (e.g. -43dBm/5 MHz TRP for WBB MP AAS, -40dBm/MHz EIRP for WBB LMP non-AAS) would appear to be very pessimistic and then not realistic.]~~ |  |
| ER/14 | 7.1.8 | Issue 3 (blocking levels below 3.8 GHz for WBB LMP receivers) | General | - | **Current text :** Study 6 suggests that to avoid interference from MFCN below 3.8 GHz, WBB LMP receivers should have blocking level of -15 dBm at 6 dB desensitisation below 3.8 GHz.  **Proposed text :** Study 6 suggests that to avoid blocking from MFCN below 3.8 GHz, unsynchronized WBB LMP receivers should have blocking level of -15 dBm at 6 dB desensitisation below 3.8 GHz. |  |
| ER/15 | 7.1.8 | Conclusions | General. | Repetition of text.  No need of this sub section FM60 task. In study 6 cell size urban is 200 m and separation distance required min 350 m. How the coordination is reduced ? separation distance for other scenarios is even higher. | Change heading from conclusion to further considerations.  Remove table 54, 55 and 56. Everything explained with proposed values in issue 1 to 4. Text after table 56 can be kept. |  |
| UK/16 | 7.1.8  Summary and Conclusions | Conclusions  Para 1 and Table 54 | General | While studies 2 and 3 suggest a particular WBB terminal power limit to aid in coexistence, no studies highlight particular WBB BS power limits to aid in coordination.  WBB BS power is not highlighted as one of the four issues identified by the studies.  Therefore, the WBB BS powers given are simply the assumptions used in the studies.  No specific WBB BS power limits should be given as levels which reduce the need for coordination.  While the UK does not see it necessary to note WBB BS power in this section, if any mention of WBB BS power is deemed necessary by the group, then this should simply be a high level statement of “reducing the WBB BS power limit would also reduce the need for coordination. | As a result of the studies, the following technical conditions for unsynchronised WBB LMPs in 3.8-4.2 GHz could be used to reduce the need for coordination with MFCN BS below 3.8 GHz.  Studies 2 and 3 suggested a WBB terminal power limit to reduce the need for coordination - Table 54.  Table 54: Terminal In-block power limit in 3800-4200 MHz   |  |  |  | | --- | --- | --- | |  |  |  | |  |
| UK/17 | 7.1.8  Summary and Conclusions | Conclusions  Table 54 | General | See UK/1. | |  |  |  | | --- | --- | --- | | WBB Terminals (fixed/installed, and mobile/nomadic) | 28 dBm EIRP | Power Control activation is obligatory | |  |
| UK/18 | 7.1.8  Summary and Conclusions | Conclusions  Para 2 | Editorial | Editorial changes to improve readability, clarify which studies this suggestion comes from, and clarify what technical condition could be suggested in future ECC guidance to reduce the need for coordination | Studies 3, 6 and 7 suggested lower out of band emission level below 3800 MHz (to protect MFCN). Studies 3 and 7 assumed minimum separation distance of 100 m, while Study 6 assumed conditions with smaller cell sizes, which will reduce the coordination cases - Table 55. |  |
| UK/19 | 7.1.8  Summary and Conclusions | Conclusions  Para 3 | Editorial | Editorial changes to improve clarify which studies this suggestion comes from. | Study 6 suggested a receiver blocking level below 3800 MHz (to tolerate interference from MFCN) - Table 56. |  |
| UK/20 | 7.1.8  Summary and Conclusions | Conclusions  Para 5 | Editorial | Editorial changes to improve readability | Through physical separation: |  |
| UK/21 | 7.1.8  Summary and Conclusions | Conclusions  Para 6 | Editorial | Editorial changes to improve readability. | In order to facilitate the deployment of terrestrial wireless broadband systems providing local-area network connectivity, administrations may want to be able to complement certain aspects of their use of the band 3.8-4.2 GHz to national and/or local level circumstances, managing the remaining coordination requirements not addressed by the harmonised technical conditions (for example through the definition of synchronisation and/or frequency separation requirements). CEPT is developing a toolbox for administrations to provide guidance on the approach to coexistence in the band. |  |
| GSOA/19 | 7.1.8 | Last paragraph | General | Similar to comment GSOA/3 | CEPT is developing recommendations for administrations to provide guidance on the approach to coexistence in the band. |  |
| D/80 | Page 64, 7.2 | Editors Note | General | Has to be resolved |  |  |
| SWE20 | 7.2 | Entire chapter |  | This study deviates from agreed methodology and only examines interference from one single transmitting DECT station.  While conclusions from 3GPP-based studies emphasize the necessity of coordination with MFCNs, this study assumes a completely random placement of a DECT devices, lacking any coordination or minimum distance from a MFCN base station. Given that this study does no attempt to analyze the cumulative interference from a local area network, deriving meaningful conclusions on co-existence with adjacent MFCN is difficult Nevertheless, it anything the results suggest that similar considerations would apply to DECT networks, necessitating geographical and/or frequency separation.  During the PT1 work, when this study was scrutinized and criticized, the DECT Forum opted not to justify its methodology but rather pointed to the use of methodologies in some prior studies (referring to irrelevant SRD-studies and a DECT study from 2004).  Despite its limited impact on the overall conclusions of the report, Sweden stresses the importance for the ECC to maintain a standard of quality control. Consequently, Sweden asserts the significance of withholding the study from publication in an official ECC Report | Do not include the study “Between DECT-2020 NR and MFCN below 3.8” |  |
| SWE21 – SWE24 | 7.2 |  |  | If ECC do decide to keep this study, Sweden proposes the changes SWE22 - SWE 25 | See Annex |  |
| DF/24 | 7.2.1 | 1st para | Edit | Editorial to improve text | This analysis adopts a Monte Carlo approach to assess the risk, from a statistical basis, of interference into MFCN on the basis that the location of MFCN base stations may not be known i.e.no geographical separation distance between WBB LMP and MFCN can be assumed. |  |
| DF/25 | 7.2.1 | 2nd para | Edit | Editorial to improve text | The analysis applies the agreed technical and propagation parameters and the protection requirements for the MFCN base station receiver. Net Filter Discrimination is used to combine the DECT-2020 NR transmitter spectrum emission mask (from Table 14) and MFCN receiver mask (based on values taken from the relevant parameters in this report from Table 25) into an NFD value |  |
| D/81 | Page 64, 7.2.1 Summary | 2nd para, last sentence | Grammar/editorial | sustantive/nouns | As the frequency separation increases the integration of the transmitter and receiver masks changes accordingly, with the NFD levelling off at 3915 MHz. |  |
| DF/26 | 7.2.1 | 3rd para | Edit | Editorial to improve text | The study assumes outdoor operation of 6.912 MHz bandwidth DECT-2020 NR operating in the centre of the 10 MHz channel raster at 23 dBm e.i.r.p. (0 dBi antenna gain) with transmission power control giving a range of EIRP from -40 dBm to 23 dBm (see ETSI TR 103 943 V1.1.1 (2024-01) [9]) |  |
| DF/27 | 7.2.1 | 4th para | Edit | Editorial to improve text | The DECT-2020 NR device is also randomly placed within the base station service area and the interference from DECT-2020 NR at the base station receiver is calculated based on the agreed parameters set out in this Report. |  |
| DF/28 | 7.2.1 | 5th – 7th para plus numbered list and equation | Edit | Update to text to summarise revised and corrected study presented to 63rd ECC | At each snapshot the parameters that can change within the Monte Carlo simulation are:   1. Victim antenna relative gain, i.e. the base station gain in the direction of the DECT-2020 NR radio device. 2. Transmit power of the DECT-2020 NR radio device via transmission power control. 3. Pathloss between DECT-2020 NR radio device and MFCN base station (ITU-R Recs P.452 and P. 2108 losses are independently variable).   To statistically characterise the risk of interference the simulation is carried out for 500,000. The probability where the interference from DECT-2020 NR device exceeds the protection threshold of -6 dB I/N at the base station receiver is given by:  Probability of interference = ∑Snapshots where protection criterion is exceeded / ∑Snapshots  As can be seen in Table 58, the analysis indicates that for DECT-2020 NR operating with TPC at 3.805 GHz the probability where DECT-2020 NR transmitters exceed the protection criterion of -6 dB I/N for MFCN is 1.76% and improves to 0.515% as the frequency separation is increased to 3.915 GHz (where the NFD levels off). |  |
| DF/29 | 7.2.1 | Table 58 | Edit | Title of table amended and table updated with new values based on revised and corrected study | **Table 58: Probability of DECT-2020 NR radio device exceeds -6 dB I/N at the MFCN base station receiver (Urban Macro case)**  See Annex for updated table 58 |  |
| D/82 | Page 65, 7.2.1 Summary | Table 58, Editors notes | General | Have to be resolved |  |  |
| GSMA/1 | 7.2.1 | Last paragraph | General/Technical | The current conclusion in draft ECC Report 358 is limited to a specific MFCN cell radius of 600 m and only deploys a single MFCN UE. In the annexed new study it can be seen that for smaller MFCN sizes and with more than one active UE the interference are reaching unacceptable levels. | [Change as it should appear in the working document]  Add the following additional text at the end of the current last paragraph.  However, a subsequent study indicates that the probability of interference increases to unacceptable levels when the MFCN MNO's cell sizes decreases and/or more active MFCN UEs are deployed, hence more work is needed to address this in the planned guidelines. |  |
| GSMA/2 | 7.2.1 | Last paragraph | General/Technical | In case the ‘new DECT Study’ as presented at ECC#63 is accepted to replace the current study. The same comment as above is still valid also, there is a new last sentence which clearly is not correct and needs deletion.  Also, delete the word ‘very’ in the first line of the last paragraph. This is subjective and we do not believe 1.74 % is very low. | In the first line of the last Paragraph; delete the word ‘very’.  Add the following additional text at the end of the current last paragraph and delete current last sentence of the paragraph.  However, a subsequent study indicates that the probability of interference increases to unacceptable levels when the MFCN MNO's cell sizes decreases and/or more active MFCN UEs are deployed, hence more work is needed to address this in the planned guidelines. |  |
| DF/30 | 7.2.2 | Conclusion | Edit | Conclusion added on study | Within a DECT-2020 NR network, all devices have the same technical characteristics even if they have different roles within the network, and all devices implement TPC regardless of whether they are a ‘base station’ (sink node) or ‘terminal’ (router or leaf node). All messages, including beacon transmissions are adjusted to cover the 'next hop' devices and not to cover as wide an area as possible. Consequently, within a DECT-2020 NR network the average radio device transmit power is much lower than the maximum transmitter output power, and an average out-of-band emission (OOBE) level would be much lower than the specified OOBE level. This is an inherent feature of the automatic interference management capability of DECT-2020 NR to reduce transmitted power and therefore reduce the risk of interference to other users.  The results of this study indicate a low probability of interference into MFCN from DECT-2020 NR WBB LMP devices operating at a maximum of 23 dBm e.i.r.p. and employing transmission power control. When this study is coupled with results from Study 3, which conclude that radio devices operating at 28 dBm EIRP with an antenna height of 10 m can coexist with MFCN providing that TPC is used (see Table 45), the effectiveness of TPC to mitigate interference is demonstrated.  On the basis of this study (and Study 3), it is concluded that DECT-2020 NR operating at 23 dBm with TPC does not present a risk of harmful interference into MFCN. As the technical specification for DECT-2020 NR requires TPC in all devices, this conclusion holds for devices operating as 'base stations' and 'terminals'. |  |
| D/83 | Page 67, A1.5.1, Study [Germany] | Link to the study | General | comment (via Link) in the Study has to be discussed, proposed to be deleted. Study is approved. |  |  |
| LTU/29 | Annex 1, Annex 2 |  | General | After converting individual appendices into the attachments and adding references to them into sections 6 and 7 there is no need to keep Annexes 1 and 2 | Delete Annexes 1 and 2 |  |
| LTU/30 | Annex 1 | 1st paragraph | General | Same text is incorporated in 3rd paragraph therefore it is a duplication and not required. |  |  |
| LTU/31 | Annex 3 |  | General | Change langue from using third person into using general | See Annex |  |
| GSOA/20 | Annex 3 | All parts | General | It is proposed to use the last paragraph of section 4.1 as introductory text of the annex and put the remaining part of the annex in a dedicated document.  That would avoid emphasizing a specific contribution and would provide same consideration to the various inputs. | This Annex presents an example use-case, requiring coverage of a given industrial site, demonstrating how different BS deployment configurations can affect the coverage and deployment complexity of WBB LMP networks in the frequency band.  Detailed elements are provided in Document ECC PT1(XX)YYY . |  |
| GSOA/21 | Annex 4 | All parts | General | Remove hyperlinks to the references given that most references do not have hyperlink | Remove hyperlinks to the references |  |
| I/14 | Annex 4 | Page 85 | Editorial | Proposal to add references to the Radio Regulations and the ECA Table that are mentioned in section 2 | [3] European Table of Frequency Allocations and Applications (ECA) Table  [4] ITU Radio Regulations, Edition of 2020 |  |
| LTU/32 | Appendices |  | General | Remove cover pages, references to PT1 documents, comments and references to the CG activities, correct grammar and spelling | See Attachments |  |

1. Further coordination could include azimuthal offset of the WBB BS antenna away from the FS victim receiver, additional downtilt on WBB BS antenna, reduced transmit power at the WBB BS, etc. [↑](#footnote-ref-2)
2. Further coordination could include azimuthal offset of the WBB BS antenna away from the FS victim receiver, reduced transmit power at the WBB BS, etc. [↑](#footnote-ref-3)
3. Further coordination could include azimuthal offset of the WBB BS antenna away from the FS victim receiver, additional downtilt on WBB BS antenna, reduced transmit power at the WBB BS, etc. [↑](#footnote-ref-4)