**3GPP TSG-RAN WG4 Meeting # 103-e R4-22XXXXX**

**Electronic Meeting, 09 – 20 May 2022**

**Agenda item:** 8.3 Issues arising from basket WIs but not subject to block approval

**Source:** Dominique Brunel (Skyworks Solutions Inc.)

**Title:** Draft initial email summary for [103-e][115] NR\_Baskets\_Part\_1…

**Document for:** Information

# Introduction

This email thread covers AI 8.3 and is for: band combinations:

* Band combinations “not for block approval”
* Band combinations Flagged BC from block approval that require consensus between experts
* Intra-band CA combinations needing MSD or MPR/A-MPR (incl NR-U ULCA)
* Band combinations aspects that require group discussion
* 1st round: target agreement on test points to enable CR and WF in 2nd round
	+ Topic #1: Critical intra-band combinations
	+ Topic #2: LB-LB combinations
	+ Topic #3: Flagged band combinations
	+ Topic #4: Inter-band combinations with intra-band ULCA in UL configuration
	+ Topic #5: Release independence for NE-DC
* 2nd round: Agreement on WF and CR/TPs

# Topic #1: Critical intra-band combinations

MSD for DC\_(n)3AA and DC\_n7(AA)

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2208002**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2208002.zip) DC\_(n)3AA MSD | Qualcomm Incorporated | Proposal 1: Consider MSD test points as shown in Table 2.2.

|  |
| --- |
| **EN-DC configuration / channel allocations /MSD** |
| **EN-DC configuration** | **E-UTRA/NR band** | **FC (UL)****(MHz)** | **Channel bandwidth****(MHz)** | **UL****allocation (LCRB)** | **FC (DL)****(MHz)** | **MSD****(dB)** | **Duplex mode** |
| DC\_(n)3AA | 3 | 1745 | 20 | N/A | 1840 | 5.3 | FDD |
|  | n3 | 1770 | 30 | 50 (RBend = 160) | 1865 | 0 |  |
| DC\_(n)3AA | 3 | 1747.5 | 15 | N/A | 1842.5 | 4.6 |  |
|  | n3 | 1770 | 30 | 50 (RBend = 160) | 1865 | 0 |  |
| DC\_(n)3AA | 3 | 1750 | 10 | N/A | 1845 | 3.4 |  |
|  | n3 | 1770 | 30 | 50 (RBend = 160) | 1865 | 0 |  |
| DC\_(n)3AA | 3 | 1745 | 20 | N/A | 1840 | 7.2 |  |
|  | n3 | 1770 | 30 | 12 (RBend = 160) | 1865 | 0 |  |
| DC\_(n)3AA | 3 | 1747.5 | 15 | N/A | 1842.5 | 8.1 |  |
|  | n3 | 1770 | 30 | 7 (RBend = 160) | 1865 | 0 |  |
| DC\_(n)3AA | 3 | 1750 | 10 | N/A | 1845 | 9.2 |  |
|  | n3 | 1770 | 30 | 2 (RBend = 160) | 1865 | 0 |  |

 |
| [**R4-2210233**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2210233.zip) Single Uplink MSD for DC\_(n)3AA | Skyworks Solutions Inc. | **Proposal: For DC\_(n)3AA, adopt the MSD for a single uplink operation as shown in** **Table 3.**Table 3: Reference sensitivity (MSD) for intra-band contiguous DC\_(n)3AA

|  |
| --- |
| EN-DC configuration / channel allocations /MSD |
| EN-DC configuration | E-UTRA/NR band | FC (UL)(MHz) | Channel bandwidth(MHz) | UL allocation (LCRB) | FC (DL)(MHz) | MSD(dB) |
| DC\_(n)3AA | 3 | N/A | 15 | N/A | 1842.5 | **[3.9]** |
| n3 | 1770.0 | 30 | [10 (RBstart = 150)] | 1865.0 | N/A |

 |
| [**R4-2208004**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2208004.zip) DC\_(n)7AA MSD | Qualcomm Incorporated | Proposal 1: If dual UL is chosen for DC\_(n)7AA, use the MSD as stated in Table 2-2.**Table 2-2: Reference sensitivity (MSD) for intra-band contiguous EN-DC**

|  |
| --- |
| **EN-DC configuration / channel allocations /MSD** |
| **EN-DC configuration** | **E-UTRA/NR band** | **FC (UL)****(MHz)** | **Channel bandwidth****(MHz)** | **UL****allocation (LCRB)** | **FC (DL)****(MHz)** | **MSD****(dB)** | **Duplex mode** |
| DC\_(n)7AA | 7 | 2525 | 20 | 20 (RBstart = 0) | 2645 | 18.1 | FDD |
|  | n7 | 2545 | 20 | 25 (RBend =88) | 2665 | 11.0 |  |
| DC\_(n)7AA | 7 | 2525 | 20 | 20 (RBstart = 0) | 2645 | 12.7 |  |
|  | n7 | 2545 | 20 | 25 (RBend =106) | 2665 | 15.8 |  |
| DC\_(n)7AA | 7 | 2525 | 20 | 5 (RBstart = 0) | 2645 | 12.0 |  |
|  | n7 | 2545 | 20 | 40 (RBend =106) | 2665 | 12.0 |  |

 |
| [**R4-2209560**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2209560.zip) TP for TR 37 717-11-11 to include CA\_n7(AA) | Ericsson, Telstra | Moderator: this seems to be a place holder to capture MSD from R4-2208004, will need revision as MSD is TBD. It seems dual UL A-MPR will be needed. Unclear why/if MSD for single UL is not needed. |

## Open issues summary

*Before e-Meeting, moderators shall summarize list of open issues, candidate options and possible WF (if applicable) based on companies’ contributions.*

### Sub-topic 1-1:

*Sub-topic description:* DC\_(n)3AA MSD

*Open issues and candidate options before e-meeting:* Different MSD test points and values are proposed by two companies

**Issue 1-1: DC\_(n)3AA MSD**

* Proposals

|  |
| --- |
| **EN-DC configuration / channel allocations /MSD** |
| **EN-DC configuration** | **E-UTRA/NR band** | **FC (UL)****(MHz)** | **Channel bandwidth****(MHz)** | **UL****allocation (LCRB)** | **FC (DL)****(MHz)** | **MSD****(dB)** | **Company** |
| DC\_(n)3AA | 3 | 1745 | 20 | N/A | 1840 | 5.3 | QCOM |
|  | n3 | 1770 | 30 | 50 (RBend = 160) | 1865 | 0 |  |
| DC\_(n)3AA | 3 | 1747.5 | 15 | N/A | 1842.5 | 4.6 |  |
|  | n3 | 1770 | 30 | 50 (RBend = 160) | 1865 | 0 |  |
| DC\_(n)3AA | 3 | 1750 | 10 | N/A | 1845 | 3.4 |  |
|  | n3 | 1770 | 30 | 50 (RBend = 160) | 1865 | 0 |  |
| DC\_(n)3AA | 3 | 1745 | 20 | N/A | 1840 | 7.2 |  |
|  | n3 | 1770 | 30 | 12 (RBend = 160) | 1865 | 0 |  |
| DC\_(n)3AA | 3 | 1747.5 | 15 | N/A | 1842.5 | 8.1 |  |
|  | n3 | 1770 | 30 | 7 (RBend = 160) | 1865 | 0 |  |
| DC\_(n)3AA | 3 | 1750 | 10 | N/A | 1845 | 9.2 |  |
|  | n3 | 1770 | 30 | 2 (RBend = 160) | 1865 | 0 |  |
| DC\_(n)3AA | 3 | N/A | 15 | N/A | 1842.5 | **[3.9]** | SKW |
|  | n3 | 1770.0 | 30 | [10 (RBstart = 150)] | 1865.0 | N/A |  |

* Recommended WF
	+ Companies and other experts agree on MSD test point definition in Rd1 and try to converge on MSD value in Rd2

### Sub-topic 1-2:

*Sub-topic description:* DC\_(n)7AA MSD

*Open issues and candidate options before e-meeting:*

* 2UL MSD
* moderator: need for 1UL MSD?
* A-MPR
* TP

**Issue 1-2a: 2UL MSD**

* Proposals

|  |
| --- |
| **EN-DC configuration / channel allocations /MSD** |
| **EN-DC configuration** | **E-UTRA/NR band** | **FC (UL)****(MHz)** | **Channel bandwidth****(MHz)** | **UL****allocation (LCRB)** | **FC (DL)****(MHz)** | **MSD****(dB)** | **Duplex mode** |
| DC\_(n)7AA | 7 | 2525 | 20 | 20 (RBstart = 0) | 2645 | 18.1 | FDD |
|  | n7 | 2545 | 20 | 25 (RBend =88) | 2665 | 11.0 |  |
| DC\_(n)7AA | 7 | 2525 | 20 | 20 (RBstart = 0) | 2645 | 12.7 |  |
|  | n7 | 2545 | 20 | 25 (RBend =106) | 2665 | 15.8 |  |
| DC\_(n)7AA | 7 | 2525 | 20 | 5 (RBstart = 0) | 2645 | 12.0 |  |
|  | n7 | 2545 | 20 | 40 (RBend =106) | 2665 | 12.0 |  |

* Recommended WF
	+ Discuss MSD test point and values for 2 UL MSD in view of a WF in rd2

**Issue 2-2b: Need for 1UL MSD**

* Proposals
* Recommended WF
	+ Moderator: agree if MSD is required for second DL channel or not

**Issue 2-2c: A-MPR**

* Proposals
* Recommended WF
	+ Moderator: A-MPR is need for 2UL, agree if WF is needed to complete the combination

**Issue 2-2c: TP**

* Proposals: review TP directly for missing point and comment in TP section
* Recommended WF
	+ Moderator: TP is incomplete so better have a WF to complete the band combination

## Companies views’ collection for 1st round

### Open issues

Sub topic 1-1 DC\_(n)3AA MSD

|  |  |
| --- | --- |
| **Company** | **Comments** |
| XXX | **Issue 1-1: DC\_(n)3AA MSD** |
| XXX | **Issue 1-1: DC\_(n)3AA MSD** |

Sub topic 1-2 DC\_(n)7AA MSD

|  |  |
| --- | --- |
| **Company** | **Comments** |
| XXX | **Issue 1-2a: 2UL MSD****Issue 1-2b: need for 1UL MSD****Issue 1-2c: A-MPR** |
| XXX | **Issue 1-2a: 2UL MSD****Issue 1-2b: need for 1UL MSD****Issue 1-2c: A-MPR** |
|  |  |

### CRs/TPs comments collection

*For close-to-finalize WIs and maintenance work, comments collections can be arranged for TPs and CRs. For ongoing WIs, suggest to focus on open issues discussion on 1st round.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| [**R4-2209560**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2209560.zip) TP for TR 37 717-11-11 to include CA\_n7(AA) | Company A |
| Company B |
|  |

## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

|  |  |
| --- | --- |
|  | **Status summary**  |
| **Sub-topic #1** | *Tentative agreements:**Candidate options:**Recommendations for 2nd round:* |

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provides recommendation on CRs/TPs Status update*

*Note: The tdoc decisions shall be provided in Section 3 and this table is optional in case moderators would like to provide additional information.*

|  |  |
| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation**  |
| XXX | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

## Discussion on 2nd round (if applicable)

# Topic #2: LB-LB combinations

In this LB-LB section the following is treated:

* 2 band LB-LB: Second test point for CA\_n18-n28 and its MSD
* 3 band LB-LB: DC\_12-30\_n5 and DC\_14-30\_n5

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2209252**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2209252.zip) second test point for CA\_n18-n28 MSD | Skyworks Solutions Inc. | Proposal on second test point introduction:• A second test point is only introduced for CA\_n18-n28 and not DC\_18-n28• The second test point is introduced in 38.101-1 only once the simplified cross band isolation table is in place (WC DL CBW only).Proposal: the CA\_n18-n28 second test point should be for:• Band n28 5MHz DL channel centered at 785.5 MHz• Band n18 15MHz UL channel centered at 822.5MHz and with 25RB at the bottom of the channel• This case is similar to 15 MHz band n5 UL MSD into n28 5MHz DL MSD case.Proposal: the CA\_n18-n28 second test point MSD value for 5 MHz n28A DL and 15 MHz n18 25RB UL is in the range of 13 to 18 dB. |
| [**R4-2207716**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2207716.zip) TP for TR 37.717-21-11 Addition of DC\_12-30\_n5 | AT&T | IMD3 products are produced by Band 12 and n5 that might fall in Rx of band 30Table 5.X.4-1: Reference sensitivity exceptions for Scell due to dual uplink operation for EN-DC in NR FR1 (three bands)

|  |
| --- |
| E-UTRA and NR Band / Channel bandwidth / NRB / MSD |
| EN-DCConfiguration | EUTRA / NR band | UL Fc (MHz) | UL/DL BW (MHz) | UL LCRB | DL Fc (MHz) | MSD (dB) | IMD order |
| DC\_12A-30A\_n5A | 12 | 702 | 5 | 25 | 732 | N/A | N/A |
| 30 | 2310 | 5 | 25 | 2355 | 18.8 | IMD3 |
| n5 | 826.5 | 5 | 25 | 871.5 | N/A | N/A |

 |
| [**R4-2207717**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2207717.zip) TP for TR 37.717-21-11 Addition of DC\_14-30\_n5 | AT&T | IMD5 products are produced by Band 14 and n5 that might fall in Rx of band 30Table 5.X.4-1: Reference sensitivity exceptions for Scell due to dual uplink operation for EN-DC in NR FR1 (three bands)

|  |
| --- |
| E-UTRA and NR Band / Channel bandwidth / NRB / MSD |
| EN-DCConfiguration | EUTRA / NR band | UL Fc (MHz) | UL/DL BW (MHz) | UL LCRB | DL Fc (MHz) | MSD (dB) | IMD order |
| DC\_14A-30A\_n5A | 14 | 795 | 5 | 25 | 765 | N/A | N/A |
| 30 | 2308 | 5 | 25 | 2353 | 5.9 | IMD5 |
| n5 | 827 | 5 | 25 | 872 | N/A | N/A |

 |

## Open issues summary

*Before e-Meeting, moderators shall summarize list of open issues, candidate options and possible WF (if applicable) based on companies’ contributions.*

### Sub-topic 2-1:

*Sub-topic description:* Second test point for CA\_n18-n28 MSD

*Open issues and candidate options before e-meeting:*

* Exceptional second test point
* Test point definition
* MS value

**Issue 2-1a: Restriction to CA\_n18-n28**

* Proposals
* A second test point is only introduced for CA\_n18-n28 and not DC\_18-n28
* The second test point is introduced in 38.101-1 only once the simplified cross band isolation table is in place
* Recommended WF
* To be discussed with proponent and experts in Rd1

**Issue 2-1b: CA\_n18-n28 test point definition**

* Proposals
* Band n28 5MHz DL channel centered at 785.5 MHz
* Band n18 15MHz UL channel centered at 822.5MHz and with 25RB at the bottom of the channel
* This case is similar to 15 MHz band n5 UL MSD into n28 5MHz DL MSD case
* Recommended WF
* Agree test point in Rd1

**Issue 2-1c: MSD value**

* Proposals
* the CA\_n18-n28 second test point MSD value for 5 MHz n28A DL and 15 MHz n18 25RB UL is in the range of 13 to 18 dB.
* Recommended WF
* Since the MSD value is a range, this may be further refined with experts or used as a WF for further analysis in next meeting

### Sub-topic 2-2:

*Sub-topic description:* DC\_12-30\_n5 and DC\_14-30\_n5

*Open issues and candidate options before e-meeting: MSD values for:*

* DC\_12-30\_n5 IMD3 MSD in n30
* DC\_14-30\_n5 IMD5 MSD in n30

**Issue 2-2a: DC\_12-30\_n5 IMD3 MSD in n30**

* Proposals
	+ See TP for comments
* Recommended WF
	+ MSD test point and values are commented in TP/CR section

**Issue 2-2b: DC\_14-30\_n5 IMD5 MSD in n30**

* Proposals
	+ See TP for comments
* Recommended WF
	+ MSD test point and values are commented in TP/CR section

## Companies views’ collection for 1st round

### Open issues

Sub topic 1-1 Second test point for CA\_n18-n28 MSD

|  |  |
| --- | --- |
| **Company** | **Comments** |
| XXX | **Issue 2-1a: Restriction to CA\_n18-n28****Issue 2-1b: CA\_n18-n28 test point definition****Issue 2-1c: MSD value** |
| XXX | **Issue 2-1a: Restriction to CA\_n18-n28****Issue 2-1b: CA\_n18-n28 test point definition****Issue 2-1c: MSD value** |

### CRs/TPs comments collection

*For close-to-finalize WIs and maintenance work, comments collections can be arranged for TPs and CRs. For ongoing WIs, suggest to focus on open issues discussion on 1st round.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| [**R4-2207716**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2207716.zip) TP for TR 37.717-21-11 Addition of DC\_12-30\_n5 | Company A |
| Company B |
|  |
| [**R4-2207717**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2207717.zip) TP for TR 37.717-21-11 Addition of DC\_14-30\_n5 | Company A |
| Company B |
|  |

## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

|  |  |
| --- | --- |
|  | **Status summary**  |
| **Sub-topic #2** | *Tentative agreements:**Candidate options:**Recommendations for 2nd round:* |

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provides recommendation on CRs/TPs Status update*

*Note: The tdoc decisions shall be provided in Section 3 and this table is optional in case moderators would like to provide additional information.*

|  |  |
| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation**  |
| XXX | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

## Discussion on 2nd round (if applicable)

# Topic #3: Flagged band combinations

Follow-up on combinations flagged last meeting: CA\_n28A-n40A-n41A

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2208707**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2208707.zip) TP for TR38.717-03-02\_CA\_n28A-n40A-n41A | ZTE Corporation | Table 5.1.132.4-1 3DL/2UL interband Reference sensitivity QPSK PREFSENS and uplink/downlink configurations

|  |  |
| --- | --- |
| Band / Channel bandwidth / NRB / Duplex mode | Source of IMD |
| NR CAConfiguration | NR band | UL Fc (MHz) | UL/DL BW (MHz) | UL CLRB | DL Fc (MHz) | MSD (dB) | Duplex mode |  |
| CA\_n28-n40-n41 | n28 | 710 | 5 | 25 | 765 | 7.6 | FDD | IMD4 |
|  | n40 | 2302.5 | 5 | 25 | 2302.5 | N/A | TDD | N/A |
|  | n41 | 2685 | 10 | 50 | 2685 | N/A | TDD | N/A |

 |
| [**R4-2208003**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2208003.zip) DC\_28\_n40-n41 MSDModerator: should be CA\_n28-n40-n41 | Qualcomm Incorporated | **Table 2-2**: IMD4 MSD

|  |  |
| --- | --- |
| Band / Channel bandwidth / NRB / Duplex mode | Source of IMD |
| NR CAConfiguration | NR band | UL Fc (MHz) | UL/DL BW (MHz) | UL CLRB | DL Fc (MHz) | MSD (dB) | Duplex mode |  |
| CA\_n28-n40-n41 | n28 | 710 | 5 | 25 | 765 | [7.6] | FDD | IMD4 |
|  | n40 | 2302.5 | 5 | 25 | 2302.5 | N/A | TDD | N/A |
|  | n41 | 2685 | 10 | 50 | 2685 | N/A | TDD | N/A |

 |

## Open issues summary

*Before e-Meeting, moderators shall summarize list of open issues, candidate options and possible WF (if applicable) based on companies’ contributions.*

### Sub-topic 3-1:

*Sub-topic description:* CA\_n28A-n40A-n41A IMD4 MSD

*Open issues and candidate options before e-meeting:* TP for CA and MSD value

**Issue 3-1: CA\_n28A-n40A-n41A IMD4 MSD**

* Proposals
	+ IMD4 MSD is 7.6dB
* Recommended WF
	+ Agree MSD with experts
	+ Comment other part of TP in TP section if needed

## Companies views’ collection for 1st round

### Open issues

Sub topic 3-1

|  |  |
| --- | --- |
| **Company** | **Comments** |
| XXX | **Issue 3-1: CA\_n28A-n40A-n41A IMD4 MSD** |
| XXX | **Issue 3-1: CA\_n28A-n40A-n41A IMD4 MSD** |

### CRs/TPs comments collection

*For close-to-finalize WIs and maintenance work, comments collections can be arranged for TPs and CRs. For ongoing WIs, suggest to focus on open issues discussion on 1st round.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| [**R4-2208707**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2208707.zip) TP for TR38.717-03-02\_CA\_n28A-n40A-n41A | Company A |
| Company B |
|  |

## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

|  |  |
| --- | --- |
|  | **Status summary**  |
| **Sub-topic #3** | *Tentative agreements:**Candidate options:**Recommendations for 2nd round:* |

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provides recommendation on CRs/TPs Status update*

*Note: The tdoc decisions shall be provided in Section 3 and this table is optional in case moderators would like to provide additional information.*

|  |  |
| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation**  |
| XXX | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

## Discussion on 2nd round (if applicable)

# Topic #4: Inter-band combinations with intra-band ULCA in UL configuration

Discussion of completion of inter-band band combinations with intra-band ULCA in UL configuration, additional TB rule and associated CRs

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2207989**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2207989.zip) Completion of inter-band band combinations with intra-band ULCA in UL configuration | Skyworks Solutions Inc. | **Proposal on IMD cases for UL NRCA:*** **CA\_n41C-n66A/CA\_n41C, CA\_n2A-n77(2A)/CA\_n77(2A), CA\_n3A-n77(2A)/CA\_n77(2A), CA\_n30A-n77(2A)/CA\_n77(2A), CA\_n66A-n77(2A)/CA\_n77(2A) and CA\_n41C-n77A/CA\_n41C DL/UL configuration IMD MSDs have already been treated and brackets can be removed in 38.101-1 [4]**

**Proposal on IMD cases for UL ENDC:*** **DC\_8A-(n)3AA/ DC\_(n)3AA DL/UL configuration needs DC\_(n)3AA band combination to be finalised. Provided this is the case, there is no IMD MSD required for DC\_8A-(n)3AA thanks to SUO only**
* **DC\_25A-(n)41CA with DC\_41A\_n41A UL configuration has IMD7 issue that is not specified, MSD from CA\_n25A-n41C with CA\_n41C can be reused and added in CR [5]**

**Proposal on triple beat cases:*** **DC\_3C\_n75A UL configuration is removed in 38.101-3 in [5] as it is not a valid configuration as n75 is an SDL band**
* **DC\_3C\_n5A and DC\_3C\_n28A need further analysis for triple beat MSD and are postponed to Release 18. UL configurations are removed from 38.101-3 [5]**
* **DC\_3A\_n41C IMD and triple beat MSD are introduced in 38.101-3 in [5] provided the rest of the TP is complete and triple beat analysis crosschecked by multiple companies following [1]**

**Proposal on missing ENDC fallbacks:*** **Add DC\_2A\_n2A (SUO only) UL configuration to in DC\_2A-5A\_n2A missing fallback for DC\_2A-5A-30A\_n2A and DC\_2A-5A-66A\_n2A in CR [5]**
* **DC\_1A-28A\_n7B/DC\_1A\_n7B DL/UL configuration: add DC\_1A\_n7B UL configuration to DC\_1A\_n7B BC in CR as no MSD [5]**
* **DC\_3C-28A\_n7B-n78A and DC\_1A-3C-28A\_n7B-n78A/3C\_n7B DL/UL configuration: since this is missing for a number of fallbacks, remove UL configuration 3C\_n7B from DC\_1A-3C-28A\_n7B-n78A in CR [5]**

**Proposal for CA\_n3A-n78(2A) with CA\_n78(2A) UL: no MSD is required****Proposal for CA\_n25A-n41C with CA\_n41C UL: the following test point and MSD in Table 9 is introduced in 38.101-1 [4]:**Table 9: IMD7 MSD for CA\_n41C in band n25

|  |  |
| --- | --- |
| Band / Channel bandwidth / NRB / Duplex mode | Source of IMD |
| NR CA band combination | NR band | UL Fc (MHz) | UL/DL BW (MHz) | UL CLRB | DL Fc (MHz) | MSD (dB) | Duplex mode |  |
| CA\_n25-n41 | n25 | N/A | 5 | N/A | 1992.5 | 8.5 | FDD | IMD7 |
|  | n41 | 2545 | 90 | 1 (RBstart=0) | 2545 | N/A | TDD | N/A |
|  |  | 2640 | 100 | 1 (RBstart=221) | 2640 |  |  |  |

**Proposal for DC\_1C\_n3A with DC\_1C\_n3A UL: the following test point and MSD in Table 11 is introduced in 38.101-3 in both Release 16 [6] and 17 [5]:**Table 11: IMD5 MSD for CA\_1C in band n3

|  |  |
| --- | --- |
| Band / Channel bandwidth / NRB / Duplex mode | Source of IMD |
| NR CA band combination | NR band | UL Fc (MHz) | UL/DL BW (MHz) | UL CLRB | DL Fc (MHz) | MSD (dB) | Duplex mode |  |
| DC\_1\_n3 | n3 | N/A | 5 | N/A | 1877.5 | 36 | FDD | IMD5 |
|  | 1 | 1950 | 20 | 1 (RBstart=0) | 2140 | N/A | TDD | N/A |
|  |  | 1970 | 20 | 1 (RBstart=67) | 2160 |  |  |  |

**Proposal on missing NRCA fallbacks:*** **Change UL configuration CA\_n46B-n48A to CA\_n46A-n48A in CA\_n46B-n48(2A) in CR [4] as CA\_n46B UL does not exist**
* **Change UL configuration to “-“ for CA\_n28A-n41A-n78(2A) as CA\_n78(2A) UL does not exist for CA\_n41A-n78(2A) in CR [4]**
* **Remove UL configuration CA\_n48B from CA\_n2A-n5A-n48B-n66A-n77A in CR [4] as UL configuration CA\_n48B does not exist in 2 band lower fallbacks**
* **Remove UL configuration CA\_n77C from CA\_n2A-n48A-n77C, CA\_n5A-n48A-n77C, CA\_n48A-n66A-n77C and CA\_n2A-n5A-n48A-n66A-n77C in CR [4] as UL configuration CA\_n77C does not exist in 2 band lower fallbacks**
 |
| [**R4-2207988**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2207988.zip) Additional criteria for triple beat issue detection | Skyworks Solutions Inc. | **Proposal on band groups distance criteria:*** **For the two-band case, triple beat MSD must be analysed only when the two simultaneous Tx/Rx UL bands are part of the same or adjacent band group as defined in Table 2**
* **For the three-band case, triple beat MSD must be analysed only when the third DL bands is simultaneous Tx/Rx with both UL bands and is part of the same or adjacent band group of one of the UL band as defined in Table 2**

Table 2: Band group definition for adjacent band-group criterion

|  |
| --- |
| **FR1 band group range** |
| **Name** | **FR1-1 (LB)** | **FR1-2 (MB)** | **FR1-3 (HB)** | **FR1-4 (VHB)** | **FR1-5 (UHB)** |
| **Range (MHz)** | **600-1000** | **1400-2200** | **2300-2700** | **3300-5000** | **5250-7125** |
| **Duplex mode** | **Mostly FDD** | **Mostly FDD** | **FDD and TDD** | **TDD only** | **TDD only** |

 |
| [**R4-2210108**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2210108.zip) Draft CR to TS 38.101-3 V17.5.0 on intra-band ULCA UL configurations | Skyworks Solutions Inc. | Moderator: Based on R4-2207989 CR can be checked in RD2 after technical discussion of R4-2207989 in Rd1. Other comment in CR section directly  |
| [**R4-2207993**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2207993.zip) Draft CR to TS 38.101-1 V17.5.0 on intra-band ULCA UL configurations | Skyworks Solutions Inc. | Moderator: Based on R4-2207989 CR can be checked in RD2 after technical discussion of R4-2207989 in Rd1. Other comment in CR section directly |

## Open issues summary

Analysis of missing requirements in 38.101-1 and 38.101-3 for inter-band combinations with intra ULCA and their treatment. Input to missing MSDs.

Additional rule for TB cases

### Sub-topic 4-1:

*Sub-topic description:* Analysis of missing requirements in 38.101-1 and 38.101-3 for inter-band combinations with intra ULCA

*Open issues and candidate options before e-meeting:* treatment of missing requirement and fallbacks.

**Issue 4-1a: IMD cases for UL NRCA and ENDC**

* Proposals
* CA\_n41C-n66A/CA\_n41C, CA\_n2A-n77(2A)/CA\_n77(2A), CA\_n3A-n77(2A)/CA\_n77(2A), CA\_n30A-n77(2A)/CA\_n77(2A), CA\_n66A-n77(2A)/CA\_n77(2A) and CA\_n41C-n77A/CA\_n41C DL/UL configuration IMD MSDs have already been treated and brackets can be removed in 38.101-1 [4]
* DC\_8A-(n)3AA/ DC\_(n)3AA DL/UL configuration needs DC\_(n)3AA band combination to be finalised. Provided this is the case, there is no IMD MSD required for DC\_8A-(n)3AA thanks to SUO only
* DC\_25A-(n)41CA with DC\_41A\_n41A UL configuration has IMD7 issue that is not specified, MSD from CA\_n25A-n41C with CA\_n41C can be reused and added in CR [5]
* Recommended WF
	+ Verify all the cases with experts and proponents

**Issue 4-1b: TB cases for ENDC**

* Proposals
* DC\_3C\_n75A UL configuration is removed in 38.101-3 in [5] as it is not a valid configuration as n75 is an SDL band
* DC\_3C\_n5A and DC\_3C\_n28A need further analysis for triple beat MSD and are postponed to Release 18. UL configurations are removed from 38.101-3 [5]
* DC\_3A\_n41C IMD and triple beat MSD are introduced in 38.101-3 in [5] provided the rest of the TP is complete and triple beat analysis crosschecked by multiple companies following [1]
* Recommended WF
	+ Verify all the cases with experts and proponents

**Issue 4-1c: missing fallbacks**

* Proposals
* Add DC\_2A\_n2A (SUO only) UL configuration to in DC\_2A-5A\_n2A missing fallback for DC\_2A-5A-30A\_n2A and DC\_2A-5A-66A\_n2A in CR [5]
* DC\_1A-28A\_n7B/DC\_1A\_n7B DL/UL configuration: add DC\_1A\_n7B UL configuration to DC\_1A\_n7B BC in CR as no MSD [5]
* DC\_3C-28A\_n7B-n78A and DC\_1A-3C-28A\_n7B-n78A/3C\_n7B DL/UL configuration: since this is missing for a number of fallbacks, remove UL configuration 3C\_n7B from DC\_1A-3C-28A\_n7B-n78A in CR [5]
* Change UL configuration CA\_n46B-n48A to CA\_n46A-n48A in CA\_n46B-n48(2A) in CR [4] as CA\_n46B UL does not exist
* Change UL configuration to “-“ for CA\_n28A-n41A-n78(2A) as CA\_n78(2A) UL does not exist for CA\_n41A-n78(2A) in CR [4]
* Remove UL configuration CA\_n48B from CA\_n2A-n5A-n48B-n66A-n77A in CR [4] as UL configuration CA\_n48B does not exist in 2 band lower fallbacks
* Remove UL configuration CA\_n77C from CA\_n2A-n48A-n77C, CA\_n5A-n48A-n77C, CA\_n48A-n66A-n77C and CA\_n2A-n5A-n48A-n66A-n77C in CR [4] as UL configuration CA\_n77C does not exist in 2 band lower fallbacks
* Recommended WF
	+ Verify all the cases with experts and proponents in rd1

### Sub-topic 4-2:

*Sub-topic description* MSD analysis for missing cases

*Open issues and candidate options before e-meeting:* Agree MSD values

**Issue 4-2a:** CA\_n3A-n78(2A) MSD

* Proposals
	+ CA\_n3A-n78(2A) with CA\_n78(2A) UL: no MSD is required
* Recommended WF
	+ Verify with experts

**Issue 4-2b:** CA\_n25A-n41C MSD

* Proposals

Table 9: IMD7 MSD for CA\_n41C in band n25

|  |  |
| --- | --- |
| Band / Channel bandwidth / NRB / Duplex mode | Source of IMD |
| NR CA band combination | NR band | UL Fc (MHz) | UL/DL BW (MHz) | UL CLRB | DL Fc (MHz) | MSD (dB) | Duplex mode |  |
| CA\_n25-n41 | n25 | N/A | 5 | N/A | 1992.5 | 8.5 | FDD | IMD7 |
|  | n41 | 2545 | 90 | 1 (RBstart=0) | 2545 | N/A | TDD | N/A |
|  |  | 2640 | 100 | 1 (RBstart=221) | 2640 |  |  |  |

* Recommended WF
	+ Verify MSD test point and value with experts in rd1

**Issue 4-2c:** DC\_1C\_n3A MSD

* Proposals

Table 11: IMD5 MSD for CA\_1C in band n3

|  |  |
| --- | --- |
| Band / Channel bandwidth / NRB / Duplex mode | Source of IMD |
| NR CA band combination | NR band | UL Fc (MHz) | UL/DL BW (MHz) | UL CLRB | DL Fc (MHz) | MSD (dB) | Duplex mode |  |
| DC\_1\_n3 | n3 | N/A | 5 | N/A | 1877.5 | 36 | FDD | IMD5 |
|  | 1 | 1950 | 20 | 1 (RBstart=0) | 2140 | N/A | TDD | N/A |
|  |  | 1970 | 20 | 1 (RBstart=67) | 2160 |  |  |  |

* Recommended WF
	+ Verify MSD test point and value with experts rd1

### Sub-topic 4-3:

*Sub-topic description* additional rule for triple beat

*Open issues and candidate options before e-meeting:* Agree rule on band group and distance

**Issue 4-3: band group distance criteria for triple beat**

* Proposals
* For the two-band case, triple beat MSD must be analysed only when the two simultaneous Tx/Rx UL bands are part of the same or adjacent band group as defined in Table 2
* For the three-band case, triple beat MSD must be analysed only when the third DL bands is simultaneous Tx/Rx with both UL bands and is part of the same or adjacent band group of one of the UL band as defined in Table 2

Table 2: Band group definition for adjacent band-group criterion

|  |
| --- |
| **FR1 band group range** |
| **Name** | **FR1-1 (LB)** | **FR1-2 (MB)** | **FR1-3 (HB)** | **FR1-4 (VHB)** | **FR1-5 (UHB)** |
| **Range (MHz)** | **600-1000** | **1400-2200** | **2300-2700** | **3300-5000** | **5250-7125** |
| **Duplex mode** | **Mostly FDD** | **Mostly FDD** | **FDD and TDD** | **TDD only** | **TDD only** |

* Recommended WF
	+ Confirm band group definition and rule with experts in rd1

## Companies views’ collection for 1st round

### Open issues

Sub topic 4-1 Analysis of missing requirements in 38.101-1 and 38.101-3 for inter-band combinations with intra ULCA

|  |  |
| --- | --- |
| **Company** | **Comments** |
| XXX | Issue 4-1a: IMD cases for UL NRCA and ENDCIssue 4-1b: TB cases for ENDCIssue 4-1c: missing fallbacks |
| XXX | Issue 4-1a: IMD cases for UL NRCA and ENDCIssue 4-1b: TB cases for ENDCIssue 4-1c: missing fallbacks |

 Sub topic 4-2 MSD analysis for missing cases

|  |  |
| --- | --- |
| **Company** | **Comments** |
| XXX | Issue 4-2a: CA\_n3A-n78(2A) MSDIssue 4-2b: CA\_n25A-n41C MSDIssue 4-2c: DC\_1C\_n3A MSD |
| XXX | Issue 4-2a: CA\_n3A-n78(2A) MSDIssue 4-2b: CA\_n25A-n41C MSDIssue 4-2c: DC\_1C\_n3A MSD |

Sub topic 4-3 additional rule for triple beat

|  |  |
| --- | --- |
| **Company** | **Comments** |
| XXX | Issue 4-3: band group distance criteria for triple beat |
| XXX | Issue 4-3: band group distance criteria for triple beat |

### CRs/TPs comments collection

*For close-to-finalize WIs and maintenance work, comments collections can be arranged for TPs and CRs. For ongoing WIs, suggest to focus on open issues discussion on 1st round.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| [**R4-2210108**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2210108.zip) Draft CR to TS 38.101-3 V17.5.0 on intra-band ULCA UL configurations | Company A |
| Company B |
|  |
| [**R4-2207993**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2207993.zip) Draft CR to TS 38.101-1 V17.5.0 on intra-band ULCA UL configurations | Company A |
| Company B |
|  |

## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

|  |  |
| --- | --- |
|  | **Status summary**  |
| **Sub-topic #4** | *Tentative agreements:**Candidate options:**Recommendations for 2nd round:* |

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provides recommendation on CRs/TPs Status update*

*Note: The tdoc decisions shall be provided in Section 3 and this table is optional in case moderators would like to provide additional information.*

|  |  |
| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation**  |
| XXX | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

## Discussion on 2nd round (if applicable)

# Topic #5: Release independence for NE-DC

CR introducing NE-DC release independence from R15

Moderator the CR is commented direction in the CR section

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2208284**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2208284.zip) CR for release independent of Rel.17 NE-DC FR1 and FR2 combinations | CHTTL, CMCC, SGS Wireless, Samsung | Based on the agreed CR R4-2119830, it was agreed that NE-DC can be supported from Rel-15 in release independence manner. Currently the information is not included in the latest 38.307 yet.Specify inter-band NE-DC within FR1 and inter-band NE-DC including FR2 combinations introduced in Rel.17 to be release independent from Rel.15.Note that the content for the inter-band NE-DC within FR1 is same as the agreed but missed implemented RAN4 CR R4-2119830. |

## Open issues summary

## Companies views’ collection for 1st round

### Open issues

### CRs/TPs comments collection

*For close-to-finalize WIs and maintenance work, comments collections can be arranged for TPs and CRs. For ongoing WIs, suggest to focus on open issues discussion on 1st round.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| [**R4-2208284**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2208284.zip) CR for release independent of Rel.17 NE-DC FR1 and FR2 combinations | Company A |
| Company B |
|  |

## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

|  |  |
| --- | --- |
|  | **Status summary**  |
| **Sub-topic #5** | *Tentative agreements:**Candidate options:**Recommendations for 2nd round:* |

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provides recommendation on CRs/TPs Status update*

*Note: The tdoc decisions shall be provided in Section 3 and this table is optional in case moderators would like to provide additional information.*

|  |  |
| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation**  |
| XXX | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

## Discussion on 2nd round (if applicable)

# Recommendations for Tdocs

## 1st round

**New tdocs**

|  |  |  |  |
| --- | --- | --- | --- |
| **New Tdoc number** | **Title** | **Source** | **Comments** |
|  | WF on … | YYY |  |
|  | LS on … | ZZZ | To: RAN\_X; Cc: RAN\_Y |
|  |  |  |  |

**Existing tdocs**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tdoc number** | **Revised to** | **Title** | **Source** | **Recommendation**  | **Comments** |
| [**R4-2208002**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2208002.zip)  |  | DC\_(n)3AA MSD | Qualcomm Incorporated | Agreeable, Revised, Merged, Postponed, Not Pursued |  |
| [**R4-2210233**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2210233.zip)  |  | Single Uplink MSD for DC\_(n)3AA | Skyworks Solutions Inc. |  |  |
| [**R4-2208004**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2208004.zip)  |  | DC\_(n)7AA MSD | Qualcomm Incorporated |  |  |
| [**R4-2209560**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2209560.zip)  |  | TP for TR 37 717-11-11 to include CA\_n7(AA) | Ericsson, Telstra |  |  |
| [**R4-2209252**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2209252.zip)  |  | second test point for CA\_n18-n28 MSD | Skyworks Solutions Inc. |  |  |
| [**R4-2207716**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2207716.zip)  |  | TP for TR 37.717-21-11 Addition of DC\_12-30\_n5 | AT&T |  |  |
| [**R4-2207717**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2207717.zip)  |  | TP for TR 37.717-21-11 Addition of DC\_14-30\_n5 | AT&T |  |  |
| [**R4-2208707**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2208707.zip)  |  | TP for TR38.717-03-02\_CA\_n28A-n40A-n41A | ZTE Corporation |  |  |
| [**R4-2208003**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2208003.zip)  |  | DC\_28\_n40-n41 MSD | Qualcomm Incorporated |  |  |
| [**R4-2207989**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2207989.zip)  |  | Completion of inter-band band combinations with intra-band ULCA in UL configuration | Skyworks Solutions Inc. |  |  |
| [**R4-2207988**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2207988.zip)  |  | Additional criteria for triple beat issue detection | Skyworks Solutions Inc. |  |  |
| [**R4-2210108**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2210108.zip)  |  | Draft CR to TS 38.101-3 V17.5.0 on intra-band ULCA UL configurations | Skyworks Solutions Inc. |  |  |
| [**R4-2207993**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2207993.zip)  |  | Draft CR to TS 38.101-1 V17.5.0 on intra-band ULCA UL configurations | Skyworks Solutions Inc. |  |  |
| [**R4-2208284**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_103-e/Docs/R4-2208284.zip)  |  | CR for release independent of Rel.17 NE-DC FR1 and FR2 combinations | CHTTL, CMCC, SGS Wireless, Samsung |  |  |

Notes:

1. Please include the summary of recommendations for all tdocs across all sub-topics incl. existing and new tdocs.
2. For the Recommendation column please include one of the following:
	1. CRs/TPs: Agreeable, Revised, Merged, Postponed, Not Pursued
	2. Other documents: Agreeable, Revised, Noted
3. For new LS documents, please include information on To/Cc WGs in the comments column
4. Do not include hyper-links in the documents

## 2nd round

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tdoc number** | **Revised to** | **Title** | **Source** | **Recommendation**  | **Comments** |
| R4-22xxxxx |  | CR on … | XXX | Agreeable, Revised, Merged, Postponed, Not Pursued |  |
| R4-22xxxxx |  | WF on … | YYY | Agreeable, Revised, Noted |  |
| R4-22xxxxx |  | LS on … | ZZZ | Agreeable, Revised, Noted |  |
|  |  |  |  |  |  |

Notes:

1. Please include the summary of recommendations for all tdocs across all sub-topics.
2. For the Recommendation column please include one of the following:
	1. CRs/TPs: Agreeable, Revised, Merged, Postponed, Not Pursued
	2. Other documents: Agreeable, Revised, Noted
3. Do not include hyper-links in the documents

# Annex

Contact information

|  |  |  |
| --- | --- | --- |
| **Company** | **Name** | **Email address** |
| Skyworks Solutions Inc. | Dominique Brunel | Dominique.brunel@skyworksinc.com |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Note:

1. Please add your contact information in above table once you make comments on this email thread.
2. If multiple delegates from the same company make comments on single email thread, please add you name as suffix after company name when make comments i.e. Company A (XX, XX)