**3GPP TSG-RAN WG4 Meeting # 98-e R4-210XXXX**

**Electronic Meeting, 25 Jan – 5 Feb., 2021**

**Agenda item: 6.3**

**Source:** Moderator (Nokia, Nokia Shanghai Bell)

**Title:** Email discussion summary for [98e][227] LTE feMob RRM

**Document for:** Information

# Introduction

*Briefly introduce background, the scope of this email discussion and provide some guidelines for email discussion if necessary.*

In RAN4#97e meeting, we have discussed the core requirements and performance requirements for LTE mobility enhancement, the agreements and the remaining open issues were captured in the 2nd round email discussion summary R4-2017297 and way forward R4-2017374. This email summary and WF will be the input for this topic in RAN4#98e meeting.

According to the meeting agenda, we will have 2 topics for discussion:

* Core requirements
* Performance requirements

*List of candidate target of email discussion for 1st round and 2nd round*

* 1st round: Discuss the core requirements and the test cases for performance requirements. Get agreement on the core requirements, Get agreement on the test cases for performance requirements if possible.
* 2nd round: Get agreements on the remaining open issues after 1st round discussion. Get agreement on the CRs for performance requirements.

# Topic #1: Core requirements

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [R4-2101207](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101207.zip) | Ericsson | Discussion paper on the synchronous condition for DAPS handover.  **Observation 1 :** Network does not know the exact timing condition at UE when DAPS HO is being performed  **Observation 2 :** It is important not to extend GP to facilitate DAPS operation, from an overhead perspective  **Proposal 1 :** Prior to random access procedure autonomous interruption is done in communication towards the target cell as necessary to enable the UE to have sufficient switching time, and after the random access procedure autonomous interruption is done in communication towards source cell as necessary to allow the UE to have sufficient switching time. |
| [R4-2101208](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101208.zip) | Ericsson | CR for correction on the synchronous condition for DAPS handover  Summary of change:   1. Add conditions for not expected to transmit / not expected to receive covering both source and target cell. 2. Add autonomous interruption allowance if these conditions are unspecified. |
| [R4-2101209](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101209.zip) | Ericsson | R17 mirror CR for R4-2101208 |
| [R4-2101697](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101697.zip) | Huawei, HiSilicon | CR for Correction on the synchronous condition for DAPS handover:  Summary of change:   1. Aligning with the clarification on asynchronous DAPS handover [R4-2017094]. For asynchronous DAPS handover, if the receive time difference exceeds the cyclic prefix length of that SCS, interruptions may occur depending on UE implementation. The duration and frequency of occurrence of such interruptions is not specified. |
| [R4-2101698](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101698.zip) | Huawei, HiSilicon | R17 mirror CR for R4-2101697 |

## Open issues summary

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

Based on the contributions, observations and proposals following list of sub-topics for further discussion and agreement have been identified:

1. Correction on synchronous condition for DAPS handover

### Sub-topic 1-1

*Sub-topic description:* Correction on synchronous condition for DAPS handover

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

**Issue 1-1: clarification on DL-to-UL and UL-to-DL switching time in DAPS handover**

* Proposals
  + Option 1: Prior to random access procedure autonomous interruption is done in communication towards the target cell as necessary to enable the UE to have sufficient switching time, and after the random access procedure autonomous interruption is done in communication towards source cell as necessary to allow the UE to have sufficient switching time.
* Recommended WF
  + Further discussion is needed for the DL-to-UL and UL-to-DL switching time in DAPS handover

**Issue 1-2: clarification on asynchronous DAPS handover**

* Proposals
  + Option 1: Aligning with the clarification on asynchronous DAPS handover [R4-2017094]. For asynchronous DAPS handover, if the receive time difference exceeds the cyclic prefix length of that SCS, interruptions may occur depending on UE implementation. The duration and frequency of occurrence of such interruptions is not specified.
* Recommended WF
  + Suggest to agree with option 1.

## Companies views’ collection for 1st round

### Open issues

|  |  |
| --- | --- |
| **Company** | **Comments** |
| Huawei | Issue 1-1 clarification on DL-to-UL and UL-to-DL switching time in DAPS handover:  Disagree with option 1.  the principles defined in TS38.211 are that the receiving/transmission before D2U/U2D switching is prioritized. However, the principles of Option 1 will be conflicted with the current principles. We suggest to use the same principles for UE to perform simultaneous D2U/U2D switching on both source and target cells, i.e. the receiving/transmission before D2U/U2D switching is prioritized.  NR emobility is discussing on this issue, we can use the same conclusion.Issue 1-2 clarification on asynchronous DAPS handover:  Support option 1. It is straight forward to make such clarification to align with NR [R4-2017094]  Others: |
| Ericsson | Issue 1-1: Option 1 (Ericsson proposal described in R4-2101207 and corresponding CR in R4-2101208.  A response to comment from Huawei:  Not sure about the background to “principles defined in TS38.211 are that the receiving/transmission before D2U/U2D switching is prioritized”. We interpret the principle as :   * DL2UL switch always prioritize DL (if exists)  over following (potential) UL transmission  IF there would be a switching constraint at all * UL2DL switch always prioritize UL (if exists) over following (potential) DL reception IF there would be a switching constraint at all   Issue 1-2: Option 1 is ok, since same text exist in NR DAPS already, but it is strange (also in NR) to have “For asynchronous…”, inside table for synchronous conditions. |
| Nokia | Issue 1-1: Agree with option 1. We can follow the NR mobility conclusion.  Issue 1-2: Agree with option 1. |

### CRs/TPs comments collection

*Major close-to-finalize WIs and Rel-15 maintenance, comments collections can be arranged for TPs and CRs. For Rel-16 on-going WIs, suggest to focus on open issues discussion on 1st round.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| R4-2101208 | Huawei: depends on the conclusion of open issue 1-1 |
| Nokia: CR can be come back after we have conclusion of issue 1-1. |
|  |
| R4-2101697 | Ericsson OK. |
| Nokia: OK. |
|  |

## 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:* |

*Recommendations on WF/LS assignment*

|  |  |  |
| --- | --- | --- |
|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
| #1 |  |  |

### CRs/TPs

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

|  |  |
| --- | --- |
| **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)

## Summary on 2nd round (if applicable)

*Moderator tries to summarize discussion status for 2nd round and provided recommendation on CRs/TPs/WFs/LSs Status update suggestion*

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| --- | --- |
| **CR/TP/LS/WF number** | **T-doc Status update recommendation** |
| XXX | *Based on 2nd round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

# Topic #2: Performance requirements

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [R4-2101699](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101699.zip) | Huawei, HiSilicon | CR for defining the test cases for TDD-TDD inter-frequency DAPS  Summary of change:  The following test cases for inter-frequency DAPS are defined:   1. TDD – TDD intra-band inter-frequency synchronous DAPS handover 2. TDD – TDD inter-band inter-frequency synchronous DAPS handover |
| [R4-2101700](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101700.zip) | Huawei, HiSilicon | R17 mirror CR for R4-2101699 |
| [R4-2102485](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102485.zip) | Nokia, Nokia Shanghai Bell | CR for adding test cases for LTE FDD-TDD inter-band inter-frequency synchronous DAPS handover.  Summary of change:  Add test cases:   1. E-UTRAN FDD – TDD inter-band inter-F synchronous DAPS HO test cases 2. E-UTRAN TDD – FDD inter-band inter-F synchronous DAPS HO test cases |
| [R4-2102486](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102486.zip) | Nokia, Nokia Shanghai Bell | R17 mirror CR for R4-2102485 |
| [R4-2102632](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102632.zip) | Ericsson | CR for addition of missing async FDD-TDD and TDD-FDD LTE interband interfrquency DAPS handover tests  Summary of change:  Add missing tests for TC4 and TC6   1. TC4: FDD – TDD inter-band inter-frequency asynchronous DAPS handover Ericsson 2. TC6: TDD – FDD inter-band inter-frequency asynchronous DAPS handover Ericsson |
| [R4-2102633](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102633.zip) | Ericsson | R17 mirror CR for R4-2102632 |

## Open issues summary

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

Provide comments on CRs directly in 2.3.2

## Companies views’ collection for 1st round

### Open issues

Provide comments on CRs directly in 2.3.2

### CRs/TPs comments collection

*Major close to finalize WIs and Rel-15 maintenance, comments collections can be arranged for TPs and CRs. For Rel-16 on-going WIs, suggest to focus on open issues discussion on 1st round.*

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| --- | --- |
| **CR/TP number** | **Comments collection** |
| R4-2101699 | Company A |
| Company B |
|  |
| R4-2102485 | Company A |
| Company B |
|  |
| R4-2102632 | 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:* |

*Suggestion on WF/LS assignment*

|  |  |  |
| --- | --- | --- |
|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
| #1 |  |  |

### CRs/TPs

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

|  |  |
| --- | --- |
| **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)

## Summary on 2nd round (if applicable)

*Moderator tries to summarize discussion status for 2nd round and provided recommendation on CRs/TPs/WFs/LSs Status update suggestion*

|  |  |
| --- | --- |
| **CR/TP/LS/WF number** | **T-doc Status update recommendation** |
| XXX | *Based on 2nd round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |