**3GPP TSG-RAN WG2 Meeting #110 electronic Draft R2-2005751**

**Elbonia, June 1st – 12th 2020**

**Agenda item:** 6.9.4

**Source:** Intel Corporation

**Title:** Summary of discussion][214][MOB] UE capability CRs for NR mobility (Intel)

**Document for:**  Discussion and decision

# Introduction

This is the summary of below offline discussion:

* [AT110-e][214][MOB] UE capability CRs for NR mobility (Intel)

Scope:

* + - 38.306 and 38.331 CRs for LTE capabilities based on agreements in this meeting

Intended outcome:

* + - Agreed CR to 38.331 CR in R2-2005762 for NR UE capability signalling
		- Agreed CR to 38.306 in R2-2005763 for NR capability descriptions

 Deadlines for providing comments and for rapporteur inputs:

* + - Deadline for companies' feedback: Wednesday 2020-06-10 12:00 UTC
		- Deadline for rapporteur's version for agreement: Thursday 2020-06-11 10:00 UTC

Rapporteur would suggest to resolve open issues first and then check CRs, and therefore setup a early deadline for open issues:

Open issues deadline for companies' feedback: Friday 2020-06-05 12:00 UTC

# Discussion

## RAN1/4 capabilities

RAN2 have agreed:

**Agreements (NR)**

12a introduce separate capabilities for intraFreq and interFreq as below:

 Per Band/per BC (for intraFreq capabilities), I.e. put under BandParameters-v16xy:

 intraFreqDiffSCS-DAPS-r16;

 intraFreqAsyncDAPS-r16

 intraFreqMultiUL-TransmissionDAPS-r16

Per BC (for interFreq capabilities), i.e. put under CA-ParametersNR-v16xy:

 interFreqDiffSCS-DAPS-r16

 interFreqAsyncDAPS-r16

 interFreqMultiUL-TransmissionDAPS-r16.

12b All UEs supporting DAPS support these capabilities (can discuss signalling details and naming):

 SyncDAPS-r16

 SingleUL-TransmissionDAPS-r16

 intraFreqTwoTAGs-DAPS-r16 (with 2 TAGs)

 (for interFreq since RAN2 agreed to “Reuse CA capability “supportedNumberTAG” for DAPS handover.)

8a Remove UplinkPowerSharingDAPS-HO

8b Add separate capabilities for 21-2, 21-2a, 21-2b as semiStaticPowerSharingDAPS-Mode1, semiStaticPowerSharingDAPS-Mode2 and dynamicPowersharingDAPS.

8c RAN2 thinks that these apply only for multiple UL supporting UEs,

10 Remove pdcch-BlindDetectionSource and pdcch-BlindDetectionTarget from RAN2 agreed capabilities.

11 Add syncDAPS and simultaneous UL transmission based on RAN4 latest capability table.

13 Introduce separate capabilities for intraFreq and interFreq for power sharing capabilities.

* Wait for RAN1 conclusion on ul-TransCancellationDAPS.

The open issue is whether IOT bits are needed for below mandatory features under DAPS, and any comments on the fields name:

 SyncDAPS-r16

 SingleUL-TransmissionDAPS-r16

 intraFreqTwoTAGs-DAPS-r16 (with 2 TAGs)

**Question 1: Do companies see the need to have IOT bits for syncDAPS, singleUL-TransmissionDAPS and intraFreqTwoTAGs-DAPS? Any comments on the fields name?**

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| --- | --- | --- |
| **Company** | **IOT bits or not?** | **Remark**  |
| Nokia | Yes | No strong view on the field names. |
| MediaTek | Yes | We are fine with the field names. |

## RAN2 capabilities

We discussed RAN2 capability in the meeting. The main open issue is whether we need capability on the support of 2 trigger events for same execution condition. In addition, some companies commented we do not need capability on CHO in FDD-TDD or FR1-FR2 cases since they can be inferred from handoverFDD-TDD, handoverFR1-FR2.

I assume P1/3/4 should be easily agreed.

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| ***Proposal 1: the CHO capable UE must support maximum 8 candidate cells;******Proposal 3: Introduce cpc-r16 to indicate the support of CPC;******Proposal 4: the CPC capable UE must support maximum 8 candidate cells;*** |

**Question 2: Do companies agree the P1/3/4 as above in the email discussion 930?**

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| --- | --- | --- |
| **Company** | **Yes/No** | **Remark**  |
| BT | Yes |  |
| Nokia | Yes | Discussed already in the online session and in [930] thread. |
| Futurewei | Yes |  |
| MediaTek | Yes |  |

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| ***Proposal 2: For CHO, introduce additional capability on the support of 2 trigger events for same execution condition;******Proposal 5: For CPC, introduce additional capability on the support of 2 trigger events for same execution condition;*** |

**Question 3: Do companies agree the P2/5 as above in the email discussion 930 on the support of 2 trigger events for the same execution condition?**

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| **Company** | **Yes/No** | **Remark**  |
| BT | No | We consider two trigger events as part of CHO and not an optimization. We consider CHO and CPC should follow the same approach CPC. |
| Futurewei | Yes | Two trigger event function is a new optional feature of optimization and more efforts are required to conduct the feature properly, if configured. It is better to be a separate UE capability. |
| MediaTek | No | Our understanding is that the support of 2 trigger events is a must, rather than a capability for CHO. CPC should follow the same rule. |

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| ***Proposal 6: For CHO, introduce separate capabilities cho-FDD-TDD-r16 and cho-FR1-FR2-r16;*** |

**Question 4: Do companies agree the P6 as above in the email discussion 930 on the support of FDD/TDD HO and FR1/FR2 HO?**

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| **Company** | **Yes/No** | **Remark**  |
| BT | No - cho-FDD-TDD-r16Yes - cho-FR1-FR2-r16 | No for cho-FDD-TDD-r16. We consider handovers a basic feature so for FR1, CHO between FDD and TDD should be mandatory supported if UEs support CHO.Yes for cho-FR1-FR2-r16. For IOT tests. |
| Nokia | No | We did not manage to provide our view on that in [930]. The answer is ‘No’, as we assume any UE supporting CHO and handoverFDD-TDD/handoverFR1-FR2, will also support CHO in FDD-TDD and FR1-FR2 case. Do you assume a different UE implementations? |
| Futurewei | No | Do not need separate capabilities. We have similar view as Nokia. If a UE capable for HO between TDD and FDD it should be capable/CHO between TDD and FDD. If a UE is capable for HO between FR1 and FR2, it shall support the CHO between FR1 and FR2. This should be default capability for every UE supporting HO in both cases. |
| MediaTek | No | Agree with Nokia. The support of TDD/FDD and FR1/FR2 handover for CHO should be the same for legacy handover.  |

# Summary

To be added:

# Reference

[1] R2-2004663 [109b#930] UE capabilities for NR mobility Intel Corporation

[2] R2-2005311 Report of email discussion [Post109bis-e][963][NR16] UE capabilities Intel Corporation, NTT DoCoMo