**3GPP TSG-RAN WG2 Meeting #110 R2-2006083**

**Electronic, 1 June– 12 June2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
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|  | 38.331 | **CR** | 1699 | **rev** |  | **Current version:** | 16.0.0 |  |
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| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network | **x** | Core Network |  |

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|  |
| ***Title:***  | Adding needForGapsInfoNR in HandoverPreparationInformation |
|  |  |
| ***Source to WG:*** | OPPO |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** | TEI16 |  | ***Date:*** | 2020-06-06 |
|  |  |  |  |  |
| ***Category:*** | F |  | ***Release:*** | *Rel-16* |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)Rel-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
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| ***Reason for change:*** | Based on the agreement in RAN2#110 meeting, RAN2 agreed that NeedForGap reporting, i.e. needForGapsInfoNR is forwarded to the target node during HO in HandoverPreparationInformation iner-node message. |
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| ***Summary of change:*** | Adding needForGapsInfoNR in HandoverPreparationInformation |
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| ***Consequences if not approved:*** | The needForGapsInfoNR IE in HandoverPreparationInformation is missing. |
|  |  |
| ***Clauses affected:*** | 11.2.2 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

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| The first of change |

### 11.2.2 Message definitions

Omit some text

#### – *HandoverPreparationInformation*

This message is used to transfer the NR RRC information used by the target gNB during handover preparation or UE context retrieval, e.g. in case of resume or re-establishment, including UE capability information. This message is also used for transferring the information between the CU and DU.

Direction: source gNB/source RAN to target gNB or CU to DU.

*HandoverPreparationInformation* message

-- ASN1START

-- TAG-HANDOVER-PREPARATION-INFORMATION-START

HandoverPreparationInformation ::= SEQUENCE {

 criticalExtensions CHOICE {

 c1 CHOICE{

 handoverPreparationInformation HandoverPreparationInformation-IEs,

 spare3 NULL, spare2 NULL, spare1 NULL

 },

 criticalExtensionsFuture SEQUENCE {}

 }

}

HandoverPreparationInformation-IEs ::= SEQUENCE {

 ue-CapabilityRAT-List UE-CapabilityRAT-ContainerList,

 sourceConfig AS-Config OPTIONAL, -- Cond HO

 rrm-Config RRM-Config OPTIONAL,

 as-Context AS-Context OPTIONAL,

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

AS-Config ::= SEQUENCE {

 rrcReconfiguration OCTET STRING (CONTAINING RRCReconfiguration),

 ...,

 [[

 sourceRB-SN-Config OCTET STRING (CONTAINING RadioBearerConfig) OPTIONAL,

 sourceSCG-NR-Config OCTET STRING (CONTAINING RRCReconfiguration) OPTIONAL,

 sourceSCG-EUTRA-Config OCTET STRING OPTIONAL

 ]],

 [[

 sourceSCG-Configured ENUMERATED {true} OPTIONAL

 ]]

}

AS-Context ::= SEQUENCE {

 reestablishmentInfo ReestablishmentInfo OPTIONAL,

 configRestrictInfo ConfigRestrictInfoSCG OPTIONAL,

 ...,

 [[ ran-NotificationAreaInfo RAN-NotificationAreaInfo OPTIONAL

 ]],

 [[ ueAssistanceInformation OCTET STRING (CONTAINING UEAssistanceInformation) OPTIONAL -- Cond HO2

 ]],

 [[

 selectedBandCombinationSN BandCombinationInfoSN OPTIONAL

 ]],

 [[

 configRestrictInfoDAPS-r16 ConfigRestrictInfoDAPS-r16 OPTIONAL,

 sidelinkUEInformationNR-r16 OCTET STRING OPTIONAL,

 sidelinkUEInformationEUTRA-r16 OCTET STRING OPTIONAL,

 ueAssistanceInformationEUTRA-r16 OCTET STRING OPTIONAL

]],

[[

needForGapsInfoNR-r16 NeedForGapsInfoNR-r16 OPTIONAL

]]

}

ConfigRestrictInfoDAPS-r16 ::= SEQUENCE {

 powerCoordination-FR1-r16 SEQUENCE {

 p-maxNR-Source-r16 P-Max OPTIONAL,

 p-maxNR-Target-r16 P-Max OPTIONAL,

 powerControlMode-r16 INTEGER (1..2) OPTIONAL

 } OPTIONAL,

 maxSCH-TB-BitsDL-r16 INTEGER (1..100) OPTIONAL,

 maxSCH-TB-BitsUL-r16 INTEGER (1..100) OPTIONAL

}

ReestablishmentInfo ::= SEQUENCE {

 sourcePhysCellId PhysCellId,

 targetCellShortMAC-I ShortMAC-I,

 additionalReestabInfoList ReestabNCellInfoList OPTIONAL

}

ReestabNCellInfoList ::= SEQUENCE ( SIZE (1..maxCellPrep) ) OF ReestabNCellInfo

ReestabNCellInfo::= SEQUENCE{

 cellIdentity CellIdentity,

 key-gNodeB-Star BIT STRING (SIZE (256)),

 shortMAC-I ShortMAC-I

}

RRM-Config ::= SEQUENCE {

 ue-InactiveTime ENUMERATED {

 s1, s2, s3, s5, s7, s10, s15, s20,

 s25, s30, s40, s50, min1, min1s20, min1s40,

 min2, min2s30, min3, min3s30, min4, min5, min6,

 min7, min8, min9, min10, min12, min14, min17, min20,

 min24, min28, min33, min38, min44, min50, hr1,

 hr1min30, hr2, hr2min30, hr3, hr3min30, hr4, hr5, hr6,

 hr8, hr10, hr13, hr16, hr20, day1, day1hr12, day2,

 day2hr12, day3, day4, day5, day7, day10, day14, day19,

 day24, day30, dayMoreThan30} OPTIONAL,

 candidateCellInfoList MeasResultList2NR OPTIONAL,

 ...,

 [[

 candidateCellInfoListSN-EUTRA MeasResultServFreqListEUTRA-SCG OPTIONAL

 ]]

}

-- TAG-HANDOVER-PREPARATION-INFORMATION-STOP

-- ASN1STOP

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| *HandoverPreparationInformation* field descriptions |
| ***as-Context***Local RAN context required by the target gNB or DU. |
| ***rrm-Config***Local RAN context used mainly for RRM purposes. |
| ***sourceConfig***The radio resource configuration as used in the source cell. |
| ***ue-CapabilityRAT-List***The UE radio access related capabilities concerning RATs supported by the UE. A gNB that retrieves MRDC related capability containers ensures that the set of included MRDC containers is consistent w.r.t. the feature set related information. |
| ***ue-InactiveTime***Duration while UE has not received or transmitted any user data. Thus the timer is still running in case e.g., UE measures the neighbour cells for the HO purpose. Value *s1* corresponds to 1 second, *s2* corresponds to 2 seconds and so on. Value *min1* corresponds to 1 minute, value *min1s20* corresponds to 1 minute and 20 seconds, value *min1s40* corresponds to 1 minute and 40 seconds and so on. Value *hr1* corresponds to 1 hour, *hr1min30* corresponds to 1 hour and 30 minutes and so on. |

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| *AS-Config* field descriptions |
| ***rrcReconfiguration***Contains the *RRCReconfiguration* configuration as generated entirely by the MN. |
| ***sourceRB-SN-Config***Contains the IE *RadioBearerConfig* as generated entirely by the SN. This field is only used when the UE is configured with SN terminated RB(s). |
| ***sourceSCG-Configured***Value *true* indicates that the UE is configured with NR or EUTRA SCG in source configuration. The field is only used in NR-DC and NE-DC and is included only if the fields *sourceSCG-NR-Config* and *sourceSCG-EUTRA-Config* are absent. |
| ***sourceSCG-EUTRA-Config***Contains the current dedicated SCG configuration in *RRCConnectionReconfiguration* message as specified in TS 36.331 [10] and generated entirely by the SN. In this version of the specification, the E-UTRA *RRCConnectionReconfiguration* message can only include the field *scg-Configuration* . This field is only used in NE-DC. |
| ***sourceSCG-NR-Config***Contains the current dedicated SCG configuration in *RRCReconfiguration* message as generated entirely by the SN. In this version of the specification, the *RRCReconfiguration* message can only include fields *secondaryCellGroup* and *measConfig*. This field is only used in NR-DC. |

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| *AS-Context* field descriptions |
| ***selectedBandCombinationSN***Indicates the band combination selected by SN in (NG)EN-DC, NE-DC, and NR-DC. |
| ***sidelinkUEInformationEUTRA***This field includes *SidelinkUEInformation* IE as specified in TS 36.331 [10]. |
| ***sidelinkUEInformationNR***This field includes *SidelinkUEInformationNR* IE. |
| ***ueAssistanceInformation***Includes for each UE assistance feature the information last reported by the UE, if any. |
| ***needForGapsInfoNR***Includes measurement gap requirement information of the UE for NR target bands. |

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| *RRM-Config* field descriptions |
| ***candidateCellInfoList***A list of the best cells on each frequency for which measurement information was available |
| ***candidateCellInfoListSN-EUTRA***A list of EUTRA cells including serving cells and best neighbour cells on each serving frequency, for which measurement results were available. This field is only used in NE-DC.  |

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| Conditional Presence | Explanation |
| *HO* | The field is mandatory present in case of handover within NR or UE context retrieval, e.g. in case of resume or re-establishment. The field is optionally present in case of handover from E-UTRA/5GC. Otherwise the field is absent. |
| *HO2* | The field is optionally present in case of handover within NR; otherwise the field is absent. |

NOTE 1: The following table indicates per source RAT whether RAT capabilities are included or not.

|  |  |  |  |
| --- | --- | --- | --- |
| Source RAT | NR capabilites | E-UTRA capabilities | MR-DC capabilities |
| NR | Included | May be included | May be included |
| E-UTRAN | Included | May be included | May be included |

NOTE 2: The following table indicates, in case of inter-RAT handover from E-UTRA, which additional IEs are included or not:

|  |  |  |  |
| --- | --- | --- | --- |
| Source system | sourceConfig | rrm-Config | as-Context |
| E-UTRA/EPC | Not included | May be included | Not included |
| E-UTRA/5GC | May be included, but only *radioBearerConfig* is included in the *RRCReconfiguration*. | May be included | Not included |

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| The end of change |