**3GPP TSG-RAN WG2 Meeting #117-e *R2-220xxxx***

**Online, 21st Feb. – 03rd Mar. 2022**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **36.331** | **CR** | **4766** | **rev** | **1** | **Current version:** | **16.7.0** |  |
|  | | | | | | | | |
| *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:*** | Minor changes collected by Rapporteur | | | | | | | | | |
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| ***Source to WG:*** | Samsung | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NB\_IOTenh3-Core | | | | |  | ***Date:*** | | | 2021-02-24 |
|  |  | | | |  | |  | | |  |
| ***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 can be 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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
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| ***Reason for change:*** | | The changes included in this CR aim to correct minor errors in the specification.   * In 5.3.16.2, some bullets with “4>” have indent error. * *PUR-NRSRP-ChangeThreshold-r16* is a NB-IoT specific IE. the suffix ‘-NB’ is missing. * There is no ASN.1 field called *pur-ResponseWindowSize*. The mention of this in NB-IoT in the field description of *pur-ResponseWindowTimer* was intended to mean the field *pur-ResponseWindowTimer*. | | | | | | | | |
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| ***Summary of change:*** | | This CR includes the following change:   1. In 5.3.16.2, correct the style for some bullets with “4>”. 2. Change *PUR-NRSRP-ChangeThreshold-r16* to *PUR-NRSRP-ChangeThreshold-NB-r16*. 3. Field descrition of *pur-ResponseWindowTimer* in *PUR-Config-NB* is corrected.   **Impact analysis**  Impacted functionality:  None i.e. these minor corrections do not involve any functional changes  Inter-operability:  No interoperability issue (as no functional change). | | | | | | | | |
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| ***Consequences if not approved:*** | | Miscellaneous non-controversial errors will remain in the specification. | | | | | | | | |
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| ***Clauses affected:*** | | 5.3.16.2, 6.7.3.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

#### 5.3.16.2 Initiation

Except for NB-IoT, upon initiation of the procedure, the UE shall:

1> if T309 is running for the Access Category:

2> consider the access attempt as barred;

1> else if timer T302 is running and the Access Category is neither '2' nor '0':

2> consider the access attempt as barred;

1> else:

2> if the Access Category is '0':

3> consider the access attempt as allowed;

2> else if *SystemInformationBlockType25* is not broadcasted:

3> consider the access attempt as allowed;

2> else if *ab-PerRSRP* is included:

3> if the *establishmentCause* received from higher layers is set to a value other than *emergency*:

4> if *ab-PerRSRP* is set to *thresh0*:

5> consider access to the cell as barred when in enhanced coverage as specified in TS 36.304 [4];

4> else if *ab-PerRSRP* is set to *thresh1*:

5> if the measured RSRP is less than the first entry in *rsrp-ThresholdsPrachInfoList*:

6> consider access to the cell as barred;

5> else:

6> consider that only the resources indicated for the first CE level are configured;

4> else if *ab-PerRSRP* is set to *thresh2*:

5> if the measured RSRP is less than the second entry in *rsrp-ThresholdsPrachInfoList*:

6> consider access to the cell as barred;

5> else:

6> consider that only the resources indicated for the first and second CE levels are configured;

4> else if *ab-PerRSRP* is set to *thresh3*:

5> if the measured RSRP is less than the third entry in *rsrp-ThresholdsPrachInfoList*:

6> consider access to the cell as barred;

5> else:

6> consider that only the resources indicated for the first, second, and third CE levels are configured;

2> if the Access Category is not '0', and *SystemInformationBlockType25* is broadcasted, and access to the cell is not barred due to *ab-PerRSRP*:

3> if *SystemInformationBlockType25* includes *uac-BarringPerPLMN-List* and the *uac-BarringPerPLMN-List* contains an *UAC-BarringPerPLMN* entry with the *plmn-IdentityIndex* corresponding to the PLMN selected by upper layers (see TS 24.501 [95]):

4> select the *UAC-BarringPerPLMN* entry with the *plmn-IdentityIndex* corresponding to the PLMN selected by upper layers;

4> in the remainder of this procedure, use the selected *UAC-BarringPerPLMN* entry (i.e. presence or absence of access barring parameters in this entry) irrespective of the *uac-BarringForCommon* included in *SystemInformationBlockType25;*

3> else if *SystemInformationBlockType25* includes *uac-BarringForCommon*:

4> in the remainder of this procedure use the *uac-BarringForCommon* (i.e. presence or absence of these parameters) included in *SystemInformationBlockType25*;

3> else:

4> consider the access attempt as allowed;

3> if *uac-BarringForCommon* is applicable or the *uac-AC-BarringListType* indicated that *uac-ExplicitAC-BarringList* is used:

4> if the corresponding *UAC-BarringPerCatList* contains a *UAC-BarringPerCat* entry corresponding to the Access Category:

5> select the *UAC-BarringPerCat* entry;

5> if the uac-BarringInfoSetList contain a *UAC-BarringInfoSet* entry corresponding to the *uac-barringInfoSetIndex* in the *UAC-BarringPerCat*:

6> select the *UAC-BarringInfoSet* entry;

6> perform access barring check for the Access Category as specified in 5.3.16.5, using the *UAC-BarringInfoSet* as "UAC barring parameter";

5> else:

6> consider the access attempt as allowed;

4> else:

5> consider the access attempt as allowed;

3> else if the *uac-AC-BarringListType* indicated that *uac-ImplicitAC-BarringList* is indicated:

4> select the *uac-BarringInfoSetIndex* corresponding to the Access Category in the *uac-ImplicitACBarringList;*

4> if the *uac-BarringInfoSetList* contain the *UAC-BarringInfoSet* entry corresponding to the selected *uac-BarringInfoSetIndex*:

5> select the *UAC-BarringInfoSet* entry;

5> perform access barring check for the Access Category as specified in 5.3.16.5, using the *UAC-BarringInfoSet* as "UAC barring parameter";

4> else:

5> consider the access attempt as allowed;

3> else:

4> consider the access attempt as allowed;

1> if the access barring check was requested by upper layers:

2> if the access attempt is considered as barred:

3> if timer T302 is running:

4> if timer T309 is running for Access Category '2':

5> inform the upper layer that access barring is applicable for all access categories except categories '0', upon which the procedure ends;

4> else:

5> inform the upper layer that access barring is applicable for all access categories except categories '0' and '2', upon which the procedure ends;

3> else:

4> inform upper layers that the access attempt for the Access Category is barred, upon which the procedure ends;

2> else:

3> inform upper layers that the access attempt for the Access Category is allowed, upon which the procedure ends;

1> else:

2> the procedure ends;

For NB-IoT, upon initiation of the procedure, the UE shall:

1> if T309 is running for the Access Category:

2> consider the access attempt as barred;

1> else:

2> if the Access Category is '0':

3> consider the access attempt as allowed;

2> else if *ab-Barring-5GC* in *MasterInformationBlock-NB* / *MasterInformationBlock-TDD-NB* is set to *FALSE*:

3> consider the access attempt as allowed;

2> else:

3> if *SystemInformationBlockType14-NB* includes *uac-BarringCommon*:

4> in the remainder of this procedure, use the *UAC-BarringCommon* as *UAC-Barring*;

3> else if *SystemInformationBlockType14-NB* includes *uac-BarringPerPLMN-List* and the *uac-BarringPerPLMN-List* contains an *UAC-Barring* entry with the *plmn-IdentityIndex* corresponding to the PLMN selected by upper layers (see TS 24.501 [95]):

4> select the *UAC-Barring* entry with the *plmn-IdentityIndex* corresponding to the PLMN selected by upper layers;

4> in the remainder of this procedure, use the selected *UAC-Barring* entry as *UAC-Barring*;

3> else:

4> consider the access attempt as allowed;

3> if *UAC-Barring* is applicable:

4> if one or more Access Identities are indicated according to TS 24.501 [95]; and

4> if for at least one of these Access Identities the corresponding bit in the *uac-BarringForAccessIdentity* is set to zero:

5> consider the access attempt as allowed;

4> else if the *UAC-BarringPerCatList* contains a *UAC-BarringPerCat* entry corresponding to the Access Category:

5> select the *UAC-BarringPerCat* entry;

6> perform access barring check for the Access Category as specified in 5.3.16.5, using the *uac-BarringForAccessIdentity* and the *UAC-BarringPetCat* entry as "UAC barring parameter";

5> else:

6> consider the access attempt as allowed;

1> if the access barring check was requested by upper layers:

2> if the access attempt is considered as barred:

3> inform upper layers that the access attempt for the Access Category is barred, upon which the procedure ends;

2> else:

3> inform upper layers that the access attempt for the Access Category is allowed, upon which the procedure ends;

1> else:

2> the procedure ends;

#### 6.7.3.2 NB-IoT Radio resource control information elements

– *PUR-Config-NB*

The IE *PUR-Config-NB* is used to specify PUR configuration.

***PUR-Config-NB* information element**

-- ASN1START

PUR-Config-NB-r16 ::= SEQUENCE {

pur-ConfigID-r16 PUR-ConfigID-NB-r16 OPTIONAL, --Need OR

pur-TimeAlignmentTimer-r16 INTEGER (1..8) OPTIONAL, --Need OR

pur-NRSRP-ChangeThreshold-r16 SetupRelease {PUR-NRSRP-ChangeThreshold-NB-r16}

OPTIONAL, --Need ON

pur-ImplicitReleaseAfter-r16 ENUMERATED {n2, n4, n8, spare} OPTIONAL, --Need OR

pur-RNTI-r16 C-RNTI OPTIONAL, --Need ON

pur-ResponseWindowTimer-r16 ENUMERATED {pp1, pp2, pp3, pp4, pp8, pp16, pp32, pp64}

OPTIONAL, --Need ON

pur-StartTimeParameters-r16 SEQUENCE {

periodicityAndOffset-r16 PUR-PeriodicityAndOffset-NB-r16,

startSFN-r16 INTEGER (0..1023),

startSubframe-r16 INTEGER (0..9),

hsfn-LSB-Info-r16 BIT STRING (SIZE(1))

} OPTIONAL, --Need ON

pur-NumOccasions-r16 ENUMERATED {one, infinite},

pur-PhysicalConfig-r16 SEQUENCE {

carrierConfig-r16 CarrierConfigDedicated-NB-r13,

npusch-NumRUsIndex-r16 INTEGER (0..7),

npusch-NumRepetitionsIndex-r16 INTEGER (0..7),

npusch-SubCarrierSetIndex-r16 CHOICE {

khz15 INTEGER (0..18),

khz3dot75 INTEGER (0..47)

},

npusch-MCS-r16 CHOICE {

singleTone INTEGER (0..10),

multiTone INTEGER (0..13)

},

p0-UE-NPUSCH-r16 INTEGER (-8..7),

alpha-r16 ENUMERATED {al0, al04, al05, al06,

al07, al08, al09, al1},

npusch-CyclicShift-r16 ENUMERATED {n0, n6},

npdcch-Config-r16 NPDCCH-ConfigDedicated-NB-r13

} OPTIONAL, -- Need ON

...,

[[

pur-PhysicalConfig-v1650 SEQUENCE {

ack-NACK-NumRepetitions-r16 ACK-NACK-NumRepetitions-NB-r13

} OPTIONAL --Need ON

]]

}

PUR-NRSRP-ChangeThreshold-NB-r16 ::= SEQUENCE {

increaseThresh-r16 NRSRP-ChangeThresh-NB-r16,

decreaseThresh-r16 NRSRP-ChangeThresh-NB-r16 OPTIONAL --Need OP

}

NRSRP-ChangeThresh-NB-r16 ::= ENUMERATED {dB4, dB6, dB8, dB10, dB14, dB18, dB22, dB26, dB30, dB34, spare6, spare5, spare4, spare3, spare2, spare1}

-- ASN1STOP

| *PUR-Config-NB* field descriptions |
| --- |
| ***ack-NACK-NumRepetitions***  Number of repetitions for the ACK NACK resource unit carrying HARQ response to NPDSCH, see TS 36.213 [23], clause 16.4.2. If this field is absent and no value was configured via *pur-Config*, the value of *ack-NACK-NumRepetitions* used for HARQ response to NPDSCH containing this *RRCConnectionRelease-NB* message applies. |
| ***alpha***  Parameter: *αc*(3). See TS 36.213 [23], clause 16.2.1.1.1. |
| ***carrierConfig***  Carrier used for PUR. |
| ***hsfn-LSB-Info***  LSB of the H-SFN corresponding to the last subframe of the first transmission of *RRCConnectionRelease* message containing *pur-Config*. |
| ***npdcch-Config***  NPDCCH configuration for PUR. |
| ***npusch-CyclicShift***  Parameter: . See TS 36.211 [21], clause 10.1.4.1.2. Value *n0* corresponds to value 0 and value *n6* corresponds to value 6. |
| ***npusch-MCS***  Index to tables specified in TS 36.213 [23], Table 16.5.1.2-1 and Table 16.5.1.2-2 for single tone and multi tone respectively, that defines modulation and TBS index for NPUSCH for PUR. |
| ***npusch-NumRepetitionsIndex***  Index to a table specified in TS 36.213 [23], Table 16.5.1.1-3, that defines number of repetitions for NPUSCH for PUR. |
| ***npusch-NumRUsIndex***  Index to a table specified in TS 36.213 [23], Table 16.5.1.1-2, that defines number of resource units for NPUSCH for PUR. |
| ***npusch-SubCarrierSetIndex***  For NPUSCH transmission with subcarrier spacing 3.75 kHz, indicates the subcarrier used for PUR specified in TS 36.213 [23].  For NPUSCH transmission with subcarrier spacing 15 kHz, index to a table specified in TS 36.213 [23], Table 16.5.1.1-1, that defines the set of subcarriers for NPUSCH for PUR. |
| ***p0-UE-NPUSCH***  Parameter: . See TS 36.213 [23], clause 16.2.1.1.1, unit dB. |
| ***pur-ImplicitReleaseAfter***  Number of consecutive PUR occasions that can be skipped before implicit release of PUR configuration. Value *n2* corresponds to 2 PUR occasions, value *n4* corresponds to 4 PUR occasions, and so on. |
| ***pur-NRSRP-ChangeThreshold***  Threshold(s) of change in serving cell NRSRP in dB for TA validation. Value *dB4* corresponds to 4 dB, value *dB6* corresponds to 6 dB, and so on. When *pur-NRSRP-ChangeThreshold* is set to *setup*, if *decreaseThrsh* is absent the value of *increaseThresh* is also used for *decreaseThresh*. |
| ***pur-NumOccasions***  Number of PUR occasions. Value *one* corresponds to 1 PUR occasion, and value *infinite* corresponds to an infinite number of PUR occasions. |
| ***pur-PeriodicityAndOffset***  Indicates the periodicity for the PUR occasions and time offset until the first PUR occasion. |
| ***pur-ResponseWindowTimer***  Duration of the PUR response window in TS 36.321 [6]. Value in PDCCH periods. Value *pp2* corresponds to 2 PDDCH periods, *pp3* corresponds to 3 PDCCH periods, and so on.  The value considered by the UE is: *pur-ResponseWindowTimer* = Min (signaled value x PDCCH period, 10.24s). |
| ***pur-TimeAlignmentTimer***  Value of the time alignment timer for PUR. Value in number of periodicity of PUR. |