**3GPP TSG-RAN WG2 Meeting #118-e *R2-220xxxx***

**Electronic, 2022-05-09 - 2022-05-20**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **36.331** | **CR** | **4810** | **rev** | **-** | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *For* [***HELP***](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:*** | Introducing single-bit approach for MINT [MINT] | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson, Lenovo | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI17 | | | | |  | ***Date:*** | | | 2022-04-25 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | CT1 has agreed to introduce a disaster roaming information consisting of only one bit. This, referred to as "single bit indicator", is captured in C1-223001 which states:  A) broadcasts the disaster related indication. The disaster related indication indicates that the available PLMN broadcasting this indication is the only PLMN accessible for disaster inbound roamers, that this PLMN accepts disaster inbound roamers from any other PLMN, that a disaster condition applies to all other PLMNs in the location of the broadcast, and that the disaster inbound roamers attempt to determine the MS determined PLMN with disaster condition as per bullet q2);  This single bit indicator needs to be added to the RAN2 specifications which currently just has a placeholder for this functionality.  Also, the current procedure text for "Actions upon reception of SIB15" covers only that AS forwards "PLMNs with disaster condition" to NAS. But this needs to be updated to cover provisioning of the single bit indicator.  **From R2-2206050 to be merged in a nicer way:**  In 5.2.2.3 the UE requirement for acquiring valid version of SIB30 in RRC\_IDLE and RRC\_INACTIVE is missing. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | The sematics for the single bit indicator has been added to SIB15 in 6.3.1.  UE actions for reception of SIB15 in 5.2.2.4.17 has been updated to also cover that RRC forwards the single bit indicator. This by saying that RRC forwards applicable disaster information.  **From R2-2206050 to be merged in a nicer way:**  In 5.2.2.3 the UE requirement for acquiring valid version of SIB30 in RRC\_IDLE and RRC\_INACTIVE has been added. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The single bit indicator is not supported in RRC and there is misalignment between RAN2 and CT1 specifications.  **From R2-2206050 to be merged in a nicer way:**  The specification of MINT in TS 38.331 remains incomplete. | | | | | | | | |
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| ***Clauses affected:*** | | 5.2.2.3, 5.2.2.38, 6.3.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **N** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **N** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **N** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

#### 5.2.2.3 System information required by the UE

The UE shall:

1> ensure having a valid version, as defined below, of (at least) the following system information, also referred to as the 'required' system information:

2> if in RRC\_IDLE:

3> if the UE is a NB-IoT UE:

4> the *MasterInformationBlock-NB/ MasterInformationBlock-TDD-NB* and *SystemInformationBlockType1-NB* as well as *SystemInformationBlockType2-NB* through *SystemInformationBlockType5-NB, SystemInformationBlockType22-NB*;

3> else:

4> the *MasterInformationBlock* and *SystemInformationBlockType1* (or *SystemInformationBlockType1-BR* depending on whether the UE is a BL UE or the UE in CE) as well as *SystemInformationBlockType2* through *SystemInformationBlockType8* and *SystemInformationBlockType24* (depending on support of the concerned RATs), *SystemInformationBlockType17* (depending on support of RAN-assisted WLAN interworking when the UE is connected to EPC), *SystemInformationBlockType25* (depending on support of E-UTRA/5GC), *SystemInformationBlockType29* (only for BL UE or the UE in CE depending on support of resource reservation), *SystemInformationBlockType21*, *SystemInformationBlockType26* (if UE is capable of V2X sidelink communication and is configured by upper layers to receive or transmit V2X sidelink communication),and *SystemInformationBlockType28* (if UE is capable of NR sidelink communication and is configured by upper layers to receive or transmit NR sidelink communication), *SystemInformationBlockType30* (if UE is configured by upper layers to report disaster related information);

3> if initiating a RRC connection establishment/resume procedure; and

3> the UE is a BL UE or a UE in CE or a NB-IoT UE:

4> *SystemInformationBlockType31* (*SystemInformationBlockType31-NB* in NB-IoT),if scheduled;

2> if in RRC\_INACTIVE:

3> the *MasterInformationBlock* and *SystemInformationBlockType1* as well as *SystemInformationBlockType2* through *SystemInformationBlockType8* (depending on support of the concerned RATs), *SystemInformationBlockType24* (depending on support of the concerned RATs), *SystemInformationBlockType25*, *SystemInformationBlockType29* (only for BL UE or the UE in CE depending on support of resource reservation), *SystemInformationBlockType21*, *SystemInformationBlockType26* (if UE is capable of V2X sidelink communication and is configured by upper layers to receive or transmit V2X sidelink communication),and *SystemInformationBlockType28* (if UE is capable of NR sidelink communication and is configured by upper layers to receive or transmit NR sidelink communication), *SystemInformationBlockType30* (if UE is configured by upper layers to report disaster related information);

2> if in RRC\_CONNECTED; and

2> the UE is not a BL UE; and

2> the UE is not in CE; and

2> the UE is not a NB-IoT UE:

3> the *MasterInformationBlock*, *SystemInformationBlockType1* and *SystemInformationBlockType2* as well as *SystemInformationBlockType8* (depending on support of CDMA2000), *SystemInformationBlockType17* (depending on support of RAN-assisted WLAN interworking when the UE is connected to EPC), *SystemInformationBlockType25* (depending on support of E-UTRA/5GC);

2> if in RRC\_CONNECTED and T311 is running; and

2> the UE is a BL UE or the UE is in CE or the UE is a NB-IoT UE;

3> the *MasterInformationBlock* (or *MasterInformationBlock-NB/ MasterInformationBlock-TDD-NB* in NB-IoT), *SystemInformationBlockType1-BR* (or *SystemInformationBlockType1-NB* in NB-IoT) and *SystemInformationBlockType2* (or *SystemInformationBlockType2-NB* in NB-IoT), *SystemInformationBlockType25* (only for BL UE or the UE in CE depending on support of E-UTRA/5GC), *SystemInformationBlockType29* (only for BL UE or the UE in CE depending on support of resource reservation), *SystemInformationBlockType31* (*SystemInformationBlockType31-NB* in NB-IoT) if scheduled, and for NB-IoT *SystemInformationBlockType22-NB*;

2> if in RRC\_CONNECTED and T317 is not running; and

2> the UE is a BL UE or a UE in CE or a NB-IoT UE;

3> *SystemInformationBlockType31* (*SystemInformationBlockType31-NB* in NB-IoT), if scheduled;

1> delete any stored system information after 3 hours or 24 hours from the moment it was confirmed to be valid as defined in 5.2.1.3, unless specified otherwise;

1> consider any stored system information except *SystemInformationBlockType10,* *SystemInformationBlockType11,* *systemInformationBlockType12, systemInformationBlockType14* (*systemInformationBlockType14-NB* in NB-IoT), *systemInformationBlockType25* and *systemInformationBlockType31* (*systemInformationBlockType31-NB* in NB-IoT), to be invalid if *systemInfoValueTag* included in the *SystemInformationBlockType1* (*MasterInformationBlock-NB/ MasterInformationBlock-TDD-NB* in NB-IoT) is different from the one of the stored system information and in case of NB-IoT UEs, BL UEs and UEs in CE, *systemInfoValueTagSI* is not broadcasted. Otherwise consider system information validity as defined in 5.2.1.3;

Next change

#### 5.2.2.38 Actions upon reception of *SystemInformationBlockType30*

Upon receiving *SystemInformationBlockType30*, the UE shall:

1> forward the applicable disaster information for each PLMN sharing the cell to upper layers.

Next change

### 6.3.1 System information blocks

Omitted unchanged parts

#### – *SystemInformationBlockType30*

The IE *SystemInformationBlockType30* contains configurations of disaster roaming information.

*SystemInformationBlockType30* information element

-- ASN1START

SystemInformationBlockType30-r17 ::= SEQUENCE {

commonPLMNsWithDisasterCondition-r17 SEQUENCE (SIZE (1..maxPLMN-r11)) OF PLMN-Identity OPTIONAL, -- Need OR

applicableDisasterInfoList-r17 SEQUENCE (SIZE (1..maxPLMN-r11)) OF ApplicableDisasterInfo-r17 OPTIONAL, -- Need OR

lateNonCriticalExtension OCTET STRING OPTIONAL,

...

}

ApplicableDisasterInfo-r17 ::= CHOICE {

noDisasterRoaming-r17 NULL,

disasterRoamingFromAnyPLMN-r17 NULL,

commonPLMNs-r17 NULL,

dedicatedPLMNs-r17 SEQUENCE (SIZE (1..maxPLMN-r11)) OF PLMN-Identity

}

-- ASN1STOP

| ***SystemInformationBlockType30* field descriptions** |
| --- |
| ***commonPLMNsWithDisasterCondition***  A list of PLMN(s) with disaster condition which can be commonly applicable to the PLMNs sharing the cell. |
| ***applicableDisasterInfoList***  A list indicating the applicable disaster information for the networks indicated by *plmn-IdentityList-r15* in *CellAccessRelatedInfo-5GC-r15*. The first entry in this list indicates the disaster information applicable for the network(s) in the first entry of *plmn-IdentityList*, the second entry in this list indicates the disaster information applicable for the network(s) in the second entry on *plmn-IdentityList*, and so on. Each entry in this list can either be having the value *noDisasterRoaming*, *oneBitApproach*, *commonPLMNs*, or *dedicatedPLMNs*. If an entry in this list takes the value *noDisasterRoaming*, disaster roaming is not allowed for this network(s). If an entry in this list takes the value *disasterRoamingFromAnyPLMN*, disaster conditions apply to all other PLMNs in the location of the broadcast (except those indicated in SIB1) and this network(s) accepts disaster inbound roamers from any other PLMN (except those indicated in SIB1). If an entry in this list takes the value *commonPLMNs*, the PLMN(s) with disaster conditions indicated in the field *commonPLMNsWithDisasterCondition* apply for this entry. If an entry in this list contains the value *dedicatedPLMNs*, the listed PLMN(s) are the PLMN(s) with disaster conditions that apply to the network(s) corresponding to this entry. |