**3GPP TSG-RAN WG2 Meeting #109bis-e *R2-2002658***

**Elbonia, 20 – 30 April 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
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|  |  | **CR** | **1513** | **rev** |  | **Current version:** |  |  |
|  |
| *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:***  | Finalization of the support of Non-Public Networks |
|  |  |
| ***Source to WG:*** | Nokia (Rapporteur) |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** | 2020-04 |
|  |  |  |  |  |
| ***Category:*** |  **F** |  | ***Release:*** | 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:*** | To complete the specification to support Non-Public Networks the new agreements from RAN2#109bis are needed to be implemented. |
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| ***Summary of change:*** | The following agreements from R2-2003895 are implemented:1. Follow the CT4 agreement on NID size in RRC specification
	1. Change NID-r16 size from 52 to 44
	2. Remove “Editor's Note: The size of NID is to be checked based on CT4 agreements”
2. TAC is “mandatory” within *NPN-IdentityInfoList*
	1. Remove “Editor's Note: Whether trackingAreaCode is optinal or mandatory depends on DC/CA support. This is FFS.”
3. Use 48 octets (Option C) as the maximum size of HRNNs
	1. Define *maxHRNN-Len-r16* as 48.

**Impact analysis**Impacted functionality: functionality impacted.Inter-operability: 1. If the network is implemented according to the CR and the UE is not…
2. If the UE is implemented according to the CR and the network is not…
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| ***Consequences if not approved:*** | The specification of support of Non-Public-Networks will not be complete. |
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| ***Clauses affected:*** | 6.3.2, 6.4 |
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|  | **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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

*First Modified Subclause*

*Next Modified Subclause*

6.3.2 Radio resource control information elements

<Unchangeed text omitted>

*NPN-Identity*

The IE *NPN-Identity* includes either a list of CAG-IDs or a list of NIDs per PLMN Identity. Further information regarding how to set the IE is specified in TS 23.003 [21].

***NPN-Identity* information element**

-- ASN1START

-- TAG-NPN-IDENTITY-START

NPN-Identity-r16 ::= CHOICE {

 pni-npn-r16 SEQUENCE {

 plmn-Identity-r16 PLMN-Identity,

 cag-IdentityList-r16 SEQUENCE (SIZE (1..maxNPN-r16)) OF CAG-Identity-r16

 },

 snpn-r16 SEQUENCE {

 plmn-Identity PLMN-Identity,

 nid-List-r16 SEQUENCE (SIZE (1..maxNPN-r16)) OF NID-r16

 }

}

CAG-Identity-r16 ::= BIT STRING (SIZE (32))

NID-r16 ::= BIT STRING (SIZE (44))

-- TAG-NPN-IDENTITY-STOP

-- ASN1STOP

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| ***NPN-Identity* field descriptions** |
| ***CAG-Identity***A CAG-ID as specified in TS 23.003 [21]. The PLMN ID and a CAG ID in the *NPN-Identity* identifies a PNI-NPN. |
| ***cag-IdentityList***The *cag-IdentityList* contains one or more *CAG-Identity*. All CAG IDs associated to the same PLMN ID are listed in the same *cag-IdentityList* entry*.* |
| ***NID***A NID as specified in TS 23.003 [21]. The PLMN ID and a NID in the *NPN-Identity* identifies a SNPN. |
| ***nid-List***The *nid-List* contains one or more *NID*. |

– *NPN-IdentityInfoList*

The IE *NPN-IdentityInfoList* includes a list of NPN identity information.

***NPN-IdentityInfoList* information element**

-- ASN1START

-- TAG-NPN-IDENTITYINFOLIST-START

NPN-IdentityInfoList-r16 ::= SEQUENCE (SIZE (1..maxNPN-r16)) OF NPN-IdentityInfo-r16

NPN-IdentityInfo-r16 ::= SEQUENCE {

 npn-IdentityList-r16 SEQUENCE (SIZE (1..maxNPN-r16)) OF NPN-Identity-r16,

 trackingAreaCode-r16 TrackingAreaCode,

 ranac-r16 RAN-AreaCode OPTIONAL, -- Need R

 cellIdentity-r16 CellIdentity,

 cellReservedForOperatorUse-r16 ENUMERATED {reserved, notReserved},

 ...

}

-- TAG-NPN-IDENTITYINFOLIST-STOP

-- ASN1STOP

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| ***NPN-IdentityInfoList* field descriptions** |
| ***NPN-IdentityInfo***The *NPN-IdentityInfo* contains one or more NPN identities and additional information associated with those NPNs. Only the same type of NPNs (either SNPNs or PNI-NPNs) can be listed in a *NPN-IdentityInfo* element. |
| ***npn-IdentityList***The *npn-IdentityList* contains one or more NPN Identity elements. |
| ***trackingAreaCode***Indicates the Tracking Area Code to which the cell indicated by cellIdentity field belongs.  |
| ***ranac***Indicates the RAN Area Code to which the cell indicated by cellIdentity field belongs.  |
| ***trackingAreaCode***Indicates Tracking Area Code to which the cell indicated by cellIdentity field belongs.  |
| ***cellReservedForOperatorUse***Indicates whether the cell is reserved for operator use (for the NPN(s) identified in the *npn-IdentyList*) as defined in TS 38.304 [20]. |

<Unchangeed text omitted>

*Next Modified Subclause*

6.4 RRC multiplicity and type constraint values

– Multiplicity and type constraint definitions

-- ASN1START

-- TAG-MULTIPLICITY-AND-TYPE-CONSTRAINT-DEFINITIONS-START

<Unchanged text omitted>

maxInterRAT-RSTD-Freq INTEGER ::= 3

maxHRNN-Len-r16 INTEGER ::= 48 -- Maximum length of HRNNs

maxNPN-r16 INTEGER ::= 12 -- Maximum number of NPNs broadcast and reported by UE at establishment

<Unchanged text omitted>

-- TAG-MULTIPLICITY-AND-TYPE-CONSTRAINT-DEFINITIONS-STOP

-- ASN1STOP