**3GPP TSG-RAN Meeting #93 Electronic *RP-21XXXX***

**Online, 13 – 17 September 2021**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **38.101-1** | **CR** | **0927** | **rev** | **2** | **Current version:** | **17.2.0** |  |
|  |
| *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:***  | Introduction of extended range and NS-value for n77 |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** | Ericsson, Nokia, Nokia Shanghai Bell, Verizon, Qualcomm Incorporated |
|  |  |
| ***Work item code:*** | NR\_RF\_FR1-Core |  | ***Date:*** | 2021-09-13 |
|  |  |  |  |  |
| ***Category:*** | **A** |  | ***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 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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** | In March 2021, the FCC has released new rules for the frequency range 3450-3550 MHz. The range 3450-3550 MHz is covered by band n77. Due to high demand of 3.5 GHz spectrum in the USA, enabling the use of the new frequency range within band n77 as quickly as possible is a priority for the entire cellular ecosystem. To ensure the network can properly deal with legacy n77 UEs that do not support 3.45-3.55 GHz operation in USA, UE’s information to indicate 3450-3550MHz can handle the issues in initial access and handover between serving cell and target cell.Introduce an NS value to be used in combination with the UE capability *extendedBand-n77* for handling existing UEs when extending Band n77 operation in the USA to include 3450-3550 MHz in addition to 3700-3980.A capability bit *extendedBand-n77* is introduced in 38.306 and 38.331 to indicate that a UE is capable of operating in the range 3450-3550 MHz without restrictions when operated in the USA. Existing UEs may be limited to the range 3700-3980 MHz when operated in the USA e.g. if subject to FCC certification. Other existing UEs may not be limited to 3700-3980 MHz and would access the 3450-3550 MHz without limitation.The NS value is only applicable in the range 3450-3550 MHz in the USA and used for barring existing devices not indicating *extendedBand-n77* from accessing a cell in 3450-3550 MHz from IDLE mode. From a network standpoint, these UEs are not supposed to be in the said cell and would be rejected by a network using standard UE-capability handling. Therefore these existing UEs should be barred to prevent that they make multiple attempts at coming back to this cell.It is recognised that this NS value is not used according to the conventional purpose of indicating additional spurious emissions limits, but for this case the only means for barring UEs from attaching to a cell (the alternative would have been the frequency band indicator). |
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| ***Summary of change:*** | Sub-clause 5.2:Modify NOTE 12 to capture the new range for n77 in USA.Sub-clause 6.2.3:An NS value “NS\_55” is introduced for n77 in Table 6.2.3.1-1 and Table 6.2.3.1-2 (NS\_55 is available in both Rel-16 and Rel-17 specifications).The requirements applicable when the “NS\_55” is indicated in a cell is specified in Table 6.2.3.1-1 by a table note since this NS value not indicating an additional spurious emission limit (there is no unwanted emission limit for 3450-3550 MHz other than the FCC Part 27.53 that is already met by all n77-capable UEs). The note is specified as follows:NOTE 6: This NS value is applicable for cells in the range 3450 – 3550 MHz for operations in the USA. This NS value does not indicate any additional spurious emission and maximum output power reduction requirements.**Isolated impact analysis:** existing UEs not comprehending the new NS value and not limited to the range 3700-3980 MHz when operated in the USA cannot access the 3450-3500 MHz range from IDLE mode.  |
|  |  |
| ***Consequences if not approved:*** | Existing UEs not indicating *extendedBand-n77* but capable of operating in the 3450-3550 MHz would be rejected by a network using existing UE-capability handling if attaching to a cell in 3450-3550 MHz and may subsequently make multiple attempts at coming back to this cell.  |
|  |  |
| ***Clauses affected:*** | 5.2, 6.2.3 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  |  |
| ***affected:*** |  | **X** |  Test specifications |   |
| ***(show related CRs)*** |  | **X** |  O&M Specifications |   |
|  |  |
| ***Other comments:*** | Note: This Rel-17 CR is a mirror of the Rel-16 CR with number 0926. The Rel-16 CR with number 0926 is impacting other specifications, namely these specifications (with corresponding CR numbers):TS 36.306 CR 1824r2TS 36.331 CR 4723r2TS 38.306 CR 0643r2TS 38.331 CR 2810r2However, those specifications/CRs are not listed under "Other specs affected" as the above CRs are for Rel-16, while this CR is for Rel-17. And Rel-17 specifications do not yet exist for those specifications. |
|  |  |
| ***This CR's revision history:*** | Revision 1:NOTE 12 in 5.2 is changed to capture the new range of n77 in the USA and the note now captures relation to the capability bit.NS\_55 was used instead of NS\_52. NS\_55 is used since available in both Rel-16 and Rel-17 (NS\_52 for V2X, NS\_53 and N\_54 for shared spectrum access in Rel-16, NS\_56 defined from Rel-17).Revision 2:Updated NOTE 12 in clause 5.2Updated NOTE 5 in clause 6.2.3.1, changed NOTE 5 to NOTE 6 because NOTE 5 was already allocated, but had become merged with NOTE 4.Changed "US" to "USA" on the cover page.Updated the revision-number of the CRs listed in the "Other comments"-field. |

*< start of changes >*

## 5.2 Operating bands

NR is designed to operate in the FR1 operating bands defined in Table 5.2-1.

Table 5.2-1: NR operating bands in FR1

|  |  |  |  |
| --- | --- | --- | --- |
| NR operating band | Uplink (UL) *operating band*BS receive / UE transmitFUL\_low  – FUL\_high | Downlink (DL) *operating band*BS transmit / UE receiveFDL\_low – FDL\_high | Duplex Mode |
| n1 | 1920 MHz – 1980 MHz | 2110 MHz – 2170 MHz | FDD |
| n2 | 1850 MHz – 1910 MHz | 1930 MHz – 1990 MHz | FDD |
| n3 | 1710 MHz – 1785 MHz | 1805 MHz – 1880 MHz | FDD |
| n5 | 824 MHz – 849 MHz | 869 MHz – 894 MHz | FDD |
| n7 | 2500 MHz – 2570 MHz | 2620 MHz – 2690 MHz | FDD |
| n8 | 880 MHz – 915 MHz | 925 MHz – 960 MHz | FDD |
| n12 | 699 MHz – 716 MHz | 729 MHz – 746 MHz | FDD |
| n13 | 777 MHz – 787 MHz | 746 MHz – 756 MHz | FDD |
| n14 | 788 MHz – 798 MHz | 758 MHz – 768 MHz | FDD |
| n18 | 815 MHz – 830 MHz | 860 MHz – 875 MHz | FDD |
| n20 | 832 MHz – 862 MHz | 791 MHz – 821 MHz | FDD |
| n2416 | 1626.5 MHz – 1660.5 MHz | 1525 MHz – 1559 MHz | FDD |
| n25 | 1850 MHz – 1915 MHz | 1930 MHz – 1995 MHz | FDD |
| n26 | 814 MHz – 849 MHz | 859 MHz – 894 MHz | FDD |
| n28 | 703 MHz – 748 MHz | 758 MHz – 803 MHz | FDD |
| n29 | N/A | 717 MHz – 728 MHz | SDL |
| n303 | 2305 MHz – 2315 MHz | 2350 MHz – 2360 MHz | FDD |
| n34 | 2010 MHz – 2025 MHz | 2010 MHz – 2025 MHz | TDD |
| n3810 | 2570 MHz – 2620 MHz | 2570 MHz – 2620 MHz | TDD |
| n39 | 1880 MHz – 1920 MHz | 1880 MHz – 1920 MHz | TDD |
| n40 | 2300 MHz – 2400 MHz | 2300 MHz – 2400 MHz | TDD |
| n41 | 2496 MHz – 2690 MHz | 2496 MHz – 2690 MHz | TDD |
| n46 | 5150 MHz – 5925 MHz | 5150 MHz – 5925 MHz | TDD13 |
| n4711 | 5855 MHz – 5925 MHz | 5855 MHz – 5925 MHz | TDD |
| n48 | 3550 MHz – 3700 MHz | 3550 MHz – 3700 MHz | TDD |
| n50 | 1432 MHz – 1517 MHz | 1432 MHz – 1517 MHz | TDD1 |
| n51 | 1427 MHz – 1432 MHz | 1427 MHz – 1432 MHz | TDD |
| n53 | 2483.5 MHz – 2495 MHz | 2483.5 MHz – 2495 MHz | TDD |
| n65 | 1920 MHz – 2010 MHz | 2110 MHz – 2200 MHz | FDD4 |
| n66 | 1710 MHz – 1780 MHz | 2110 MHz – 2200 MHz | FDD |
| n67 | N/A | 738 MHz – 758 MHz | SDL |
| n70 | 1695 MHz – 1710 MHz | 1995 MHz – 2020 MHz | FDD |
| n71 | 663 MHz – 698 MHz | 617 MHz – 652 MHz | FDD |
| n74 | 1427 MHz – 1470 MHz | 1475 MHz – 1518 MHz | FDD |
| n75 | N/A | 1432 MHz – 1517 MHz | SDL |
| n76 | N/A | 1427 MHz – 1432 MHz | SDL |
| n7712 | 3300 MHz – 4200 MHz | 3300 MHz – 4200 MHz | TDD |
| n78 | 3300 MHz – 3800 MHz | 3300 MHz – 3800 MHz | TDD |
| n79 | 4400 MHz – 5000 MHz | 4400 MHz – 5000 MHz | TDD |
| n80 | 1710 MHz – 1785 MHz | N/A | SUL  |
| n81 | 880 MHz – 915 MHz | N/A | SUL  |
| n82 | 832 MHz – 862 MHz | N/A | SUL  |
| n83 | 703 MHz – 748 MHz | N/A | SUL |
| n84 | 1920 MHz – 1980 MHz | N/A | SUL |
| n85 | 698 MHz – 716 MHz  | 728 MHz – 746 MHz | FDD |
| n86 | 1710 MHz – 1780 MHz | N/A | SUL |
| n89 | 824 MHz – 849 MHz | N/A | SUL |
| n90 | 2496 MHz – 2690 MHz | 2496 MHz – 2690 MHz | TDD5 |
| n91 | 832 MHz – 862 MHz | 1427 MHz – 1432 MHz | FDD9 |
| n92 | 832 MHz – 862 MHz | 1432 MHz – 1517 MHz | FDD9 |
| n93 | 880 MHz – 915 MHz | 1427 MHz – 1432 MHz | FDD9 |
| n94 | 880 MHz – 915 MHz | 1432 MHz – 1517 MHz | FDD9 |
| n958 | 2010 MHz – 2025 MHz | N/A | SUL |
| n9614 | 5925 MHz – 7125 MHz | 5925 MHz – 7125 MHz | TDD13 |
| n9715 | 2300 MHz – 2400 MHz | N/A | SUL |
| n9815 | 1880 MHz – 1920 MHz | N/A | SUL |
| n9916 | 1626.5 MHz – 1660.5 MHz | N/A | SUL |
| NOTE 1: UE that complies with the NR Band n50 minimum requirements in this specification shall also comply with the NR Band n51 minimum requirements.NOTE 2: UE that complies with the NR Band n75 minimum requirements in this specification shall also comply with the NR Band n76 minimum requirements.NOTE 3: Uplink transmission is not allowed at this band for UE with external vehicle-mounted antennas.NOTE 4: A UE that complies with the NR Band n65 minimum requirements in this specification shall also comply with the NR Band n1 minimum requirements.NOTE 5: Unless otherwise stated, the applicability of requirements for Band n90 is in accordance with that for Band n41; a UE supporting Band n90 shall meet the requirements for Band n41. A UE supporting Band n90 shall also support band n41.NOTE 6: A UE that supports NR Band n66 shall receive in the entire DL operating band.NOTE 7: A UE that supports NR Band n66 and CA operation in any CA band shall also comply with the minimum requirements specified for the DL CA configurations CA\_n66B and CA\_n66(2A) in the current version of the specification.NOTE 8: This band is applicable in China only.NOTE 9: Variable duplex operation does not enable dynamic variable duplex configuration by the network, and is used such that DL and UL frequency ranges are supported independently in any valid frequency range for the band. NOTE 10: When this band is used for V2X SL service, the band is exclusively used for NR V2X in particular regions.NOTE 11: This band is unlicensed band used for V2X service. There is no expected network deployment in this band.NOTE 12: In the USA this band is restricted to 3450 – 3550 MHz and 3700 – 3980 MHzNOTE 13: This band is restricted to operation with shared spectrum channel access as defined in 37.213.NOTE 14: This band is applicable in the USA only subject to FCC Report and Order FCC 20-51NOTE 15: The requirements for this band are applicable only where no other NR or E-UTRA TDD operating band(s) are used within the frequency range of this band in the same geographical area. For scenarios where other NR or E-UTRA TDD operating band(s) are used within the frequency range of this band in the same geographical area, special co-existence requirements may apply that are not covered by the 3GPP specifications.NOTE 16: DL operation in this band is restricted to 1526 – 1536 MHz and UL operation is restricted to 1627.5 – 1637.5 MHz and 1646.5 – 1656.5 MHz. |

*< Next change >*

### 6.2.3 UE additional maximum output power reduction

#### 6.2.3.1 General

Additional emission requirements can be signalled by the network. Each additional emission requirement is associated with a unique network signalling (NS) value indicated in RRC signalling by an NR frequency band number of the applicable operating band and an associated value in the field *additionalSpectrumEmission.* Throughout this specification, the notion of indication or signalling of an NS value refers to the corresponding indication of an NR frequency band number of the applicable operating band, the IE field *freqBandIndicatorNR* and an associated value of *additionalSpectrumEmission* in the relevant RRC information elements [7]*.*

To meet the additional requirements, additional maximum power reduction (A-MPR) is allowed for the maximum output power as specified in Table 6.2.1-1. Unless stated otherwise, the total reduction to UE maximum output power is max(MPR, A-MPR) where MPR is defined in clause 6.2.2. Outer and inner allocation notation used in clause 6.2.3 is defined in clause 6.2.2 In absence of modulation and waveform types the A-MPR applies to all modulation and waveform types.

Table 6.2.3.1-1 specifies the additional requirements with their associated network signalling values and the allowed A-MPR and applicable operating band(s) for each NS value. In case of a power class 3 UE, when IE *powerBoostPi2BPSK* is set to 1, power class 2 A-MPR values apply. The mapping of NR frequency band numbers and values of the *additionalSpectrumEmission* to network signalling labels is specified in Table 6.2.3.1-1A.

For almost contiguous allocations in CP-OFDM waveforms in power class 3, the allowed A-MPR defined in clause 6.2.3 is increased by CEIL{ 10 log10(1 + NRB\_gap / NRB\_alloc), 0.5 } dB, where NRB\_gap is the total number of unallocated RBs between allocated RBs and NRB\_alloc is the total number of allocated RBs, and the parameter LCRB is replaced by NRB\_alloc + NRB\_gap in specifying the RB allocation regions.

Unless otherwise specified, pi/2 BPSK in following A-MPR tables refers to both variants of pi/2 BPSK referenced in 6.2.2 tables 6.2.2-1.

Table 6.2.3.1-1: Additional maximum power reduction (A-MPR)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Network signalling label | Requirements (clause) | NR Band | Channel bandwidth (MHz) | Resources blocks (*N*RB) | A-MPR (dB) |
| NS\_01 |  | Table 5.2-1 | 5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100 | Table 5.3.2-1 | N/A |
| NS\_03 | 6.5.2.3.3 | n2, n25, n66,n70, n86 |  |  | Clause 6.2.3.7 |
| NS\_03U | 6.5.2.3.3, 6.5.2.4.2 | n2, n25, n66, n86 |  |  | Clause 6.2.3.7 |
| NS\_04 | 6.5.2.3.2, 6.5.3.3.1 | n41 | 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100 |  | Clause 6.2.3.2 |
| NS\_05 | 6.5.3.3.4 | n1, n65, n84 | 5, 10, 15, 20(NOTE 2) |  | Clause 6.2.3.4 |
| NS\_05U | 6.5.3.3.4, 6.5.2.4.2 | n1, n65, n84 | 5, 10, 15, 20 |  | Clause 6.2.3.4 |
| NS\_06 | 6.5.2.3.4 | n12, n85 | 5, 10, 15 |  | N/A |
|  |  | n14 | 5,10 |  |  |
| NS\_07 | 6.5.3.3.26 | n13 | 5,10 | Table 6.2.3.29-1 | Table6.2.3.29-2 |
| NS\_10 |  | n20 | 15, 20 | Table 6.2.3.3-1 | Table6.2.3.3-1 |
| NS\_12 | 6.5.3.3.17 | n26 | 5,10 | Table 6.2.3.21-1 | Table 6.2.3.21-2 |
| NS\_13 | 6.5.3.3.18 | n26 | 5 | Table 6.2.3.22-1 | Table 6.2.3.22-2 |
| NS\_14 | 6.5.3.3.19 | n26 | 10,15,20 | Table 6.2.3.23-1 | Table 6.2.3.23-2 |
| NS\_15 | 6.5.3.3.20 | n26 | 5,10,15,20 | Table 6.2.3.24-1 | Table 6.2.3.24-2 |
| NS\_17 | 6.5.3.3.2 | n28, n83 | 5,10 | Table 5.3.2-1 | N/A |
| NS\_18 | 6.5.3.3.3 | n28, n83 | 5 |  | Table 6.2.3.13-1, A1 |
|  |  |  | 10, 15, 20 |  | Table 6.2.3.13-1, A2 |
|  |  |  | 30 |  | Table 6.2.3.13-1, A3, A4, A5 |
| NS\_21 | 6.5.3.3.12 | n30 | 5, 10 |  | Clause 6.2.3.14 |
| NS\_24 | 6.5.3.3.13 | n65 (NOTE 4) | 5, 10, 15, 20 | Table 6.2.3.15-1 | Clause 6.2.3.15 |
| NS\_27 | 6.5.2.3.86.5.3.3.14 | n48 | 5, 10, 15, 20, 30, 40 | Table 6.2.3.16-1 | Table 6.2.3.16-2 |
| NS\_35 | 6.5.2.3.1 | n71 | 5, 10, 15, 20 | Table 5.3.2-1 | N/A |
| NS\_37 | 6.5.3.3.6 | n74(NOTE 3) | 10, 15 | Table 6.2.3.8-1 | Table6.2.3.8-1 |
| NS\_38 | 6.5.3.3.7 | n74 | 5, 10, 15, 20 | Table 6.2.3.9-1 | Table6.2.3.9-1 |
| NS\_39 | 6.5.3.3.8 | n74 | 10, 15, 20 | Table 6.2.3.10-1 | Table 6.2.3.10-1 |
| NS\_40 | 6.5.3.3.9 | n51 | 5 |  | Table6.2.3.5-1 |
| NS\_41 | 6.5.3.3.10 | n50 | 5, 10, 15, 20, 30, 40, 50, 60 |  | Table 6.2.3.11-1 |
| NS\_42 | 6.5.3.3.11 | n50 | 5, 10, 15, 20, 30, 40, 50, 60 |  | Table 6.2.3.12-1 |
| NS\_43 | 6.5.3.3.5 | n8, n81 | 5, 10, 15 |  | Clause 6.2.3.6 |
| NS\_43U | 6.5.3.3.5, 6.5.2.4.2 | n8, n81 | 5, 10, 15 |  | Clause 6.2.3.6 |
| NS\_44 | 6.5.3.3.24 | n38 | 25, 30, 40 | Table 6.2.3.20-1 | Table 6.2.3.20-1 |
| NS\_45 | 6.5.3.3.21 | n53 | 5, 10 |  | Clause 6.2.3.25 |
| NS\_46 | 6.5.3.3.25 | n7 | 25, 30, 40, 50 | Table 6.2.3.17-1 | Table 6.2.3.17-2 |
| NS\_47 | 6.5.3.3.15 | n41 (Note 5) | 30 | Table 6.2.3.18-1 | Table 6.2.3.18-2 |
| NS\_48 | 6.5.3.3.22 | n1 and n84 | 25, 30, 40, 50 | Table 6.2.3.26-1 | Table 6.2.3.26-1 |
| NS\_49 | 6.5.3.3.23 | n1 and n84 | 25, 30, 40, 50 | Table 6.2.3.27-1 | Table 6.2.3.27-1 |
| NS\_50 | 6.5.3.3.16 | n39, n98 | 25, 30, 40 |  | Clause 6.2.3.19 |
| NS\_51 | 6.5.3.3.22 | n65 | 50 | Table 6.2.3.28-1 | Table 6.2.3.28-2 |
| NS\_55 | NOTE 6 | n77 | 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100 |  | N/A |
| NS\_56 | 6.5.3.3.27 | n24, n99 | 5, 10 |  | Clause 6.2.3.30 |
| NS\_100 | 6.5.2.4.2 | n1, n2, n3, n5, n8, n18, n25, n26, n65, n66, n80, n81, n84, n86, n89(NOTE 1) |  |  | Table6.2.3.1-2 |
| NOTE 1: This NS can be signalled for NR bands that have UTRA services deployedNOTE 2: No A-MPR is applied for 5 MHz BWChannel where the lower channel edge is ≥ 1930 MHz,10 MHz BWChannel where the lower channel edge is ≥ 1950 MHz and 15 MHz BWChannel where the lower channel edge is ≥ 1955 MHz.NOTE 3: Applicable when the NR carrier is within 1447.9 – 1462.9 MHzNOTE 4: Applicable when the upper edge of the channel bandwidth frequency is greater than 1980 MHzNOTE 5: Applicable when the NR carrier is within 2545 – 2575 MHzNOTE 6: This NS value is applicable for cells in the range 3450 – 3550 MHz for operations in the USA. This NS value does not indicate any additional spurious emission and maximum output power reduction requirements. |

[The NS\_01 label with the field *additionalPmax* [7] absent is default for all NR bands.]

Table 6.2.3.1-1A: Mapping of network signalling label

|  |  |
| --- | --- |
| NR band | Value of additionalSpectrumEmission |
|  | **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| n1 | NS\_01 | NS\_100 | NS\_05 | NS\_05U | NS\_48 | NS\_49 |  |  |
| n2 | NS\_01 | NS\_100 | NS\_03 | NS\_03U |  |  |  |  |
| n3 | NS\_01 | NS\_100 |  |  |  |  |  |  |
| n5 | NS\_01 | NS\_100 |  |  |  |  |  |  |
| n7 | NS\_01 | NS\_46 |  |  |  |  |  |  |
| n8 | NS\_01 | NS\_100 | NS\_43 | NS\_43U |  |  |  |  |
| n12 | NS\_01 | NS\_06 |  |  |  |  |  |  |
| n13 | NS\_01 | NS\_06 | NS\_07 |  |  |  |  |  |
| n14 | NS\_01 | NS\_06 |  |  |  |  |  |  |
| n18 | NS\_01 | NS\_100 |  |  |  |  |  |  |
| n20 | NS\_01 | Void | NS\_10 |  |  |  |  |  |
| n24 | NS\_01 | NS\_56 |  |  |  |  |  |  |
| n25 | NS\_01 | NS\_100 | NS\_03 | NS\_03U |  |  |  |  |
| n26 | NS\_01 | NS\_100 | NS\_12 | NS\_13 | NS\_14 | NS\_15 |  |  |
| n28 | NS\_01 | NS\_17 | NS\_18 |  |  |  |  |  |
| n30 | NS\_01 | NS\_21 |  |  |  |  |  |  |
| n34 | NS\_01 |  |  |  |  |  |  |  |
| n38 | NS\_01 | NS\_44 |  |  |  |  |  |  |
| n39 | NS\_01 | NS\_50 |  |  |  |  |  |  |
| n40 | NS\_01 |  |  |  |  |  |  |  |
| n41 | NS\_01 | NS\_04 | NS\_47 |  |  |  |  |  |
| n48 | NS\_01 | NS\_27 |  |  |  |  |  |  |
| n50 | NS\_01 | NS\_41 | NS\_42 |  |  |  |  |  |
| n51 | NS\_01 | NS\_40 |  |  |  |  |  |  |
| n53 | NS\_01 | NS\_45 |  |  |  |  |  |  |
| n65 | NS\_01 | NS\_24 | NS\_100 | NS\_05 | NS\_05U | NS\_51 |  |  |
| n66 | NS\_01 | NS\_100 | NS\_03 | NS\_03U |  |  |  |  |
| n70 | NS\_01 | NS\_03 |  |  |  |  |  |  |
| n71 | NS\_01 | NS\_35 |  |  |  |  |  |  |
| n74 | NS\_01 | NS\_37 | NS\_38 | NS\_39 |  |  |  |  |
| n77 | NS\_01 | NS\_55 |  |  |  |  |  |  |
| n78 | NS\_01 |  |  |  |  |  |  |  |
| n79 | NS\_01 |  |  |  |  |  |  |  |
| n80 | NS\_01 | NS\_100 |  |  |  |  |  |  |
| n81 | NS\_01 | NS\_100 | NS\_43 | NS\_43U |  |  |  |  |
| n82 | NS\_01 | Void |  |  |  |  |  |  |
| n83 | NS\_01 | NS\_17 | NS\_18 |  |  |  |  |  |
| n84 | NS\_01 | NS\_100 | NS\_05 | NS\_05U |  |  |  |  |
| n85 | NS\_01 | NS\_06 |  |  |  |  |  |  |
| n86 | NS\_01 | NS\_100 | NS\_03 | NS\_03U |  |  |  |  |
| n89 | NS\_01 | NS\_100 |  |  |  |  |  |  |
| n91 | NS\_01 |  |  |  |  |  |  |  |
| n92 | NS\_01 |  |  |  |  |  |  |  |
| n93 | NS\_01 |  |  |  |  |  |  |  |
| n94 | NS\_01 |  |  |  |  |  |  |  |
| n95 | NS\_01 |  |  |  |  |  |  |  |
| n97 | NS\_01 |  |  |  |  |  |  |  |
| n98 | NS\_01 | NS\_50 |  |  |  |  |  |  |
| n99 | NS\_01 | NS\_56 |  |  |  |  |  |  |
| NOTE: *additionalSpectrumEmission* corresponds to an information element of the same name defined in clause 6.3.2 of TS 38.331 [7]. |

*< end of changes >*