**3GPP TSG-SA5 Meeting #130e *S5-202269***

**e-meeting 20-28 April 2020**

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| *CR-Form-v11.4* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **28.541** | **CR** | **0279** | **rev** | **1** | **Current version:** | **16.4.1** |  |
|  | | | | | | | | |
| *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 |  | Radio Access Network | **X** | Core Network |  |

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|  | | | | | | | | | | |
| ***Title:*** | Update on NRCellDU | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NETSLICE-5GNRM | | | | |  | ***Date:*** | | | 2020-04-10 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **A** |  | | | | | ***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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | 1. In clause 4.3.5.2, the attributes ssbFrequency and ssbSubCarrierSpacing is Mandantory, however, in clause 4.3.5.3, the condition for both attributes are described;  2. There is no NotifyStateChange defined for 5G, and the state attributes can be notified using normal notifyMOIAttributeValueChanges. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 1. Change the Support Qualifier of attributes ssbFrequency and ssbSubCarrierSpacing to ”CM” 2. Remove the notifyMOIAttributeValueChanges. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The Support Qualifier of attributes ssbFrequency and ssbSubCarrierSpacing is wrong. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.3.5.1, 4.3.5.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

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| --- | --- |
| ***This CR's revision history:*** |  |

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| --- |
| **1st Change** |

#### 4.3.4.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

### 4.3.5 NRCellDU

#### 4.3.5.1 Definition

This IOC represents the part of NR cell information that describes s the specific resources instances.

An NR cell transmits SS/PBCH block and always requires downlink transmission at a certain carrier frequency with a certain channel bandwidth. Transmission may be performed from multiple sector-carriers using different transmission points, and these may be configured with different carrier frequencies and channel bandwidths, as long as they are aligned to the cell's downlink resource grids as defined in subclause 4.4 in TS 38.211 [32]. The values of arfcnDL and bSChannelBwDL attributes define the resource grids which each sector-carrier needs to be aligned to. See subclauses 5.3 and 5.4.2 of TS 38.104 for definitions of BS channel bandwidth and NR-ARFCN, respectively.

An NR cell requires an uplink in order to provide initial access. In case of TDD, the values of arfcnUL and bSChannelBwUL have to always be set to the same values as for the corresponding DL attributes. For both FDD and TDD, the arfcnUL and bSChannelBwUL define uplink resource grids to which each sector-carrier needs to align to.

An NR cell can in addition be configured with a supplementary uplink, which has its own arfcnSUL and bSChannelBwSUL, which define resource grids for supplementary uplink sector-carriers.

Each of downlink, uplink and supplementary uplink (if configured) need an initial bandwidth part (BWP), which defines resources to be used by UEs during and immediately after initial access. Additional BWPs can be either configured or calculated by gNB internally and be applied to UEs dynamically by gNB based on e.g. UE capability and bandwidth need of each UE.

NOTE: Void

#### 4.3.5.2 Attributes

The NRCellDU IOC includes attributes inherited from ManagedFunction IOC (defined in TS 28.622[30]) and the following attributes:

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Attribute name | | Support Qualifier | | isReadable | | isWritable | | isInvariant | | isNotifyable | |
| cellLocalId | | M | | T | | T | | F | | T | |
| operationalState | | M | | T | | F | | F | | T | |
| administrativeState | | M | | T | | T | | F | | T | |
| cellState | | M | | T | | F | | F | | T | |
| pLMNInfoList | | M | | T | | T | | F | | T | |
| nRPCI | | M | | T | | T | | F | | T | |
| nRTAC | | CM | | T | | T | | F | | T | |
| arfcnDL | | M | | T | | T | | F | | T | |
| arfcnUL | | CM | | T | | T | | F | | T | |
| arfcnSUL | | CM | | T | | T | | F | | T | |
| bSChannelBwDL | | M | | T | | T | | F | | T | |
| ssbFrequency | | CM | | T | | T | | F | | T | |
| ssbPeriodicity | | M | | T | | T | | F | | T | |
| ssbSubCarrierSpacing | | CM | | T | | T | | F | | T | |
| ssbOffset | | M | | T | | T | | F | | T | |
| ssbDuration | | M | | T | | T | | F | | T | |
| bSChannelBwUL | | CM | | T | | T | | F | | T | |
| bSChannelBwSUL | | CM | | T | | T | | F | | T | |
| rimRSMonitoringStartTime | | O | | T | | T | | F | | T | |
| rimRSMonitoringStopTime | | O | | T | | T | | F | | T | |
| **Attribute related to role** | |  | |  | |  | |  | |  | |
| nRSectorCarrierRef | | M | | T | | T | | F | | T | |
| bWPRef | | M | | T | | T | | F | | T | |
| nRFrequencyRef | | CO | | T | | T | | F | | T | |
| Note 1: No state propagation is implied.  Note 2: Void | | | | | | | | | | | |

#### 4.3.5.3 Attribute constraints

|  |  |
| --- | --- |
| Name | Definition |
| arfcnUL Support Qualifier | Condition: The cell has an uplink (FDD or TDD) |
| arfcnSUL Support Qualifier | Condition: The cell has a supplementary uplink |
| bSChannelBwUL Support Qualifier | Condition: The cell has an uplink (FDD or TDD) |
| bSChannelBwSUL Support Qualifier | Condition: The cell has a supplementary uplink |
| nRFrequencyRef Support Qualifier | Condition: Non-split deployment scenario is supported |
| ssbFrequency Support Qualifier | Condition: nRFrequencyRef is not used. |
| ssbSubCarrierSpacing Support Qualifier | Condition: nRFrequencyRef is not used. |

#### 4.3.5.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

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| **End of Change** |