**3GPP TSG-SA5 Meeting #139-e *S5-215078rev1***

**e-meeting, 11 - 20 October 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **28.310** | **CR** | **0018** | **rev** | **-** | **Current version:** | **17.2.0** |  |
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| *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 |  | Radio Access Network | **X** | Core Network | **X** |

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| ***Title:*** | Update clause 6.2 for energy saving | | | | | | | | | |
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| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | EE5GPLUS | | | | |  | ***Date:*** | | | 2021-10-01 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | C |  | | | | | ***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)* | |
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| ***Reason for change:*** | | It is proposed to update clause 6.2 for energy saving to introduce the potential solution #1 of TR 28.813 which considers service characteristic information or tenant information of service for energy saving. | | | | | | | | |
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| ***Summary of change:*** | | Update clause 6.2 for energy saving to capture the potential solution #1 of TR 28.813. | | | | | | | | |
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| ***Consequences if not approved:*** | |  | | | | | | | | |
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| ***Clauses affected:*** | | 6.2.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

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| **1st modified section** |

### 6.2.1 Overview

For the scenarios where the capacity booster cell is fully or partially overlaid by the candidate cell(s), the key of energy saving solution is that 3GPP management system or NG-RAN node owning the capacity booster cell has the capability to autonomously decide to deactivate such capacity booster cell to lower energy consumption (in energySaving state) or activate the capacity booster cell in energySaving state back to notEnergySaving state due to the increasing traffic above the threshold. The cell activation/deactivation decision is typically based on the load information of the related cells and the energy saving policies (e.g. service related information as one kind of energy saving policies) set by operators.

The service related information may include service characteristic information and/or tenant information of service.

The service characteristic information may include service type information, service name information, and service priority information.

- The service type information indicates service type, it can be decided by operator's policy, for example, one kind of service type may be eMBB, URLLC, mIoT, or V2X etc, or another kind of service type may be voice, video, industrial control, web browsing, or autonomous driving;

- The service name may be human-readable name according to operator's policy;

- The service priority information may be, for example, high priority, medium priority, or low priority.

The tenant information of service may include tenant type information, tenant name information, tenant priority information

- The tenant type may be, for example, Business to Consumer (B2C) tenant, Business to Business (B2B) tenant, Business to Household (B2H) tenant, Business to Business to Everything (B2B2X) tenant;

- The tenant name may be human-readable name according to operator's policy;

- The tenant priority information may be, for example, high priority, medium priority, or low priority.

The service related information can be obtained from UEs, 5GC NFs (such as UPFs or SMFs) or operators' information provisioned in 3GPP management system.

Based on the load information of the related cells and the service related information of the the area under consideration, in which there may be one or more corresponding network functions such as NG-RAN gNBs, 5GC UPFs, SMFs, 3GPP management system decides ES actions for the corresponding cells. 3GPP management system may use different weight values for the factors that can influence the ES actions - load information of the related cells and the service related information of the analysis area.

NOTE: How the weight values are assigned by the operator is not subject to standardization.

ES activation procedure and ES deactivation procedure may be initiated in different ways as below:

- Centralized ES solution

- Consumer of centralized MnS for ES requests the producer to configure ES procedure trigger points (e.g. cell traffic load crossing threshold, service characteristic information or tenant information of service), monitoring the traffic situation of capacity booster cells and candidate cells.

- Consumer of centralized MnS for ES requests the producer to instruct the capacity booster cells to move from notEnergySaving state into energySaving state (e.g. according to some traffic performance measurements which cross below some load thresholds and service characteristic information or tenant information of service)

- Consumer of centralized MnS for ES requests the producer to instruct the capacity booster cells to move from energySaving state into notEnergySaving state (e.g. according to some traffic performance measurements which cross above some load thresholds and service characteristic information or tenant information of service)

- Distributed ES solution

- NF provisioning MnS consumer requests the producer to set policies and conditions when these policies/conditions are met, the capacity booster cells will move from notEnergySaving state into energySaving state. Examples for policies/conditions are: A time period, during which energy saving is or not allowed; load thresholds to be considered for energy saving decisions; which of the RATs should be considered with priority in Inter-RAT scenario; service characteristic information or tenant information of service.

- Based on these policies/conditions and further information - e.g. the operational status of the candidate cell to take over the coverage- the NG-RAN node controls the energy saving procedures (ES activation procedure and ES deactivation procedure) in the network nodes. The network operator is informed about configuration changes which are triggered by the NG-RAN nodes. For example, the gNB owning the capacity booster cells moves itself to/from energySaving state autonomously and sends notifications of configuration changes to operator.

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| **End of modified section** |