**3GPP TSG-CT WG1 Meeting #130-eC1-213225v1**

**E-meeting, 20-28 May 2021revision of CP-210288**

**Source: ZTE**

**Title: Revised WID on Enhancement of Network Slicing Phase 2**

**Document for: Approval**

**Agenda Item: 17.1.1**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>   
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

# Title: Enhancement of Network Slicing Phase 2

## Acronym: eNS\_Ph2

## Unique identifier: 910002

Potential target Release: Rel-17

Note that this field above indicates the proposed Release at the time of submission of the WID to TSG approval. It can later be changed without a need to revise the WID. The updated target Release is indicated in the Work Plan.

## 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Affects:** | UICC apps | ME | AN | CN | Others (specify) |
| **Yes** |  | x |  | x |  |
| **No** |  |  | x |  |  |
| **Don't know** | x |  |  |  | x |

## 2 Classification of the Work Item and linked work items

### 2.1 Primary classification

|  |  |
| --- | --- |
|  | Feature |
| X | Building Block |
|  | *Work Task* |
|  | Study Item |

### 2.2 Parent Work Item

|  |  |  |  |
| --- | --- | --- | --- |
| Parent Work / Study Items | | | |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| eNS\_Ph2 | SA2 | 900011 | Enhancement of Network Slicing Phase 2 |

### 2.3 Other related Work Items and dependencies

|  |  |  |
| --- | --- | --- |
| Other related Work Items (if any) | | |
| Unique ID | Title | Nature of relationship |
|  |  | *{optional free text}* |

**Dependency on non-3GPP (draft) specification**:

## 3 Justification

SA has approved a work item on Enhancement of Network Slicing Phase 2 (eNS\_Ph2) in Rel-17. The building block is to realize the CT aspects of protocol impacts for eNS\_Ph2 based on the approved SA WID.

## 4 Objective

The objective of the work is to enhance the necessary CT specifications to support the stage 2 requirements on enhancement of network slicing phase 2 as defined in TS 23.501, TS 23.502 and TS 23.503.

The following areas of work are expected to be covered but will be adjusted to the final conclusions of the SA2 normative requirements.

For CT1, the expected work includes:

* Restriction on the maximum number of UEs per network slice with a proper cause and a backoff timer.
* Restriction on the maximum number of PDU sessions per network slice with a proper cause and a backoff timer.
* Support of subscription-based mechanism ensuring that a UE is only allowed to be registered with compatible network slices.

For CT3, the expected work includes:

* Impacts on NEF to allow the AF to subscribe to event notifications regarding network slice information, and to collect the network slice information from the NSACF.
* Impacts on PCF to support UE-Slice-MBR authorization and monitoring.
* Impacts on PCF to support NW Slice maximum data rate enforcement.
* Impacts on UDR policy data model to support NW Slice maximum data rate storage.

For CT4, the expected work includes:

* Introduction of a new NF and services to support the following functionalities:
  + storing of network slice information (i.e., the maximum number of UEs / PDU Sessions allowed to be served by a network slice);
  + managing and updating the network slice information;
  + enforcing the network slice information for the purpose of network slice access control;
  + exposing the network slice information to AF (optionally via NEF).
* Discovery and selection of the new NF supporting network slice information management by other existing NFs, e.g. AMF/SMF.
* New supported feature for UDR services to support NW Slice maximum data rate related information.
* Support of subscription-based mechanism ensuring that a UE is only allowed to be registered with compatible network slices.

## 5 Expected Output and Time scale

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **New specifications** *{One line per specification. Create/delete lines as needed}* | | | | | |
| Type | TS/TR number | Title | For info  at TSG# | For approval at TSG# | Rapporteur |
| *TS* | *29.536* | 5G System; Network Slice Admission Control Service; Stage 3 | CT#94 (December 2021) | CT#95 (March 2022) | *Li Zhijun, ZTE,* [*li.zhijun3@zte.com.cn*](mailto:li.zhijun3@zte.com.cn)  CT4 responsibility |

|  |  |  |  |
| --- | --- | --- | --- |
| **Impacted existing TS/TR** *{One line per specification. Create/delete lines as needed}* | | | |
| TS/TR No. | Description of change | Target completion plenary# | Remarks |
| 24.501 | - Updates to NAS procedures and messages in order to support network slice information. | CT#95 (March 2022) | CT1 responsibility |
| 29.510 | - New NF registration and discovery. | CT#95 (March 2022) | CT4 responsibility |
| 29.518 | Potentially impacted (e.g. new cause value) | CT#95 (March 2022) | CT4 responsibility |
| 29.502 | Potentially impacted (e.g. new cause value) | CT#95 (March 2022) | CT4 responsibility |
| 29.524 | Potentially impacted:  - Define new cause mapping to restrict the network slice information. | CT#95 (March 2022) | CT4 responsibility |
| 29.503 | - Store and provision of subscribed UE-Slice-MBR.  - Store and provision of compatible information for Subscribed S-NSSAI(s). | CT#95 (March 2022) | CT4 responsibility |
| 29.504 | New feature to support the extension of UDR data model to support NW Slice maximum data rate related information. | CT#95 (March 2022) | CT4 responsibility |
| 29.522 | Updates to the monitoring procedures to support AF subscription to network slice information event notifications. | CT#95 (March 2022) | CT3 responsibility |
| 29.122 | Extension of the MonitoringEvent API to support AF subscription to network slice information event notifications. | CT#95 (March 2022) | CT3 responsibility |
| 29.507 | Updates to support AM policy control for UE-Slice-MBR. | CT#95 (March 2022) | CT3 responsibility |
| 29.512 | Updates to support SM policy control for NW Slice maximum data rate. | CT#95 (March 2022) | CT3 responsibility |
| 29.519 | Extension of UDR policy data model to support NW Slice maximum data rate related information. | CT#95 (March 2022) | CT3 responsibility |
| 29.513 | Updates in procedures and call flows to support policy control for UE-Slice-MBR and NW Slice maximum data rate. | CT#95 (March 2022) | CT3 responsibility |

## 6 Work item Rapporteur(s)

Hannah Wang, ZTE, wang.menghan@zte.com.cn

## 7 Work item leadership

CT4

## 8 Aspects that involve other WGs

SA5 for O&M aspects.

## 9 Supporting Individual Members

*{At least 4 supporting Individual Members are needed. There is an expectation that these companies will provide resources to progress the work. Note that having 4 supporting companies is a necessary but not sufficient condition: the usual TSG approval process by consensus is needed for the WID approval.}*

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| --- |
| ZTE |
| Nubia |
| OPPO |
| vivo |
| LG Electronics |
| Broadcom |
| China Mobile |
| China Telecom |
| CATT |
| Orange |
| Vodafone |
| Deutsche Telekom |
| NEC |
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| NTT Docomo |
| Convida wireless |
| China Unicom |
| Matrixx |
| Motorola Mobility |
| Samsung |
| Nokia |
| Nokia Shanghai Bell |
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