**3GPP TSG-CT WG1 Meeting #137-eC1-22xxxx**

**E-Meeting, 18th – 26th August 2022**

**Source: China Mobile, China Southern Power Grid**

**Title: New SID on network selection for underlay/overlay access to multiple NPNs**

**Document for: Approval**

**Agenda Item: 18.1.1**

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: Study on network selection for underlay/overlay access to multiple NPNs

Acronym: mNPN-U/O

Unique identifier: XXXX

Potential target Release: Rel-18

# 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 |
|  | Building Block |
|  | Work Task |
| X | Study Item |

## 2.2 Parent Work Item

|  |  |  |  |
| --- | --- | --- | --- |
| Parent Work / Study Items | | | |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
|  |  |  |  |

### 2.3 Other related Work Items and dependencies

|  |  |  |
| --- | --- | --- |
| Other related Work /Study Items (if any) | | |
| Unique ID | Title | Nature of relationship |
|  |  |  |

# 3 Justification

The following requirement has been defined in TS 22.261 by SA1 for non-public networks:

*Subject to an agreement between the operators and service providers, operator policies and the regional or national regulatory requirements, the 5G system shall support for non-public network subscribers:*

*- access to subscribed PLMN services via the non-public network;*

*- seamless service continuity for subscribed PLMN services between a non-public network and a PLMN;*

*- access to selected non-public network services via a PLMN;*

*- seamless service continuity for non-public network services between a non-public network and a PLMN.*

To support this stage 1 requirement, SA2 specified underlay/overlay NPN deployment options in TS 23.501.

In addition, the following requirement has been added in TS 22.261 in Rel-18:

*“Subject to an agreement between the operators and service providers, operator policies and the regional or national regulatory requirements, the 5G system shall enable a UE, with multiple subscriptions, to simultaneously access multiple non-public networks and corresponding services, via those NPNs or via a different network (PLMN or NPN).”*

And “Support for non-3GPP access for SNPN” studied in FS\_eNPN\_Ph2 makes accessing to SNPN via a different SNPN possible.

Therefore, how to enable an UE with multiple subscriptions to select an underlay network subject to an agreement between the operators and service providers, operator policies and the regional or national regulatory requirements needs to be considered. Otherwise, the UE could fail to access its subscribed networks from the registered network.

The current proposed study item is to fulfil the requirement of stage 1 and NPN deployment options of stage 2 regarding on underlay network selection aspect. It is suggested to cover the following issues:

- Whether and how multiple SNPN subscriptions of different SNPNs can share one SNPN or PLMN selection procedure for underlay network selection;

- How the agreement/policies/regulation can be reflected in underlay network selection;

- Whether a registration rejection from the overlay subscribed SNPN can trigger an underlay network selection.

# 4 Objective

The study item includes the following tasks:

- Task#1: To study potential solutions on network selection to support an underlay network selection subjecting to the agreement/policies/regulation.

- Task#2: To study potential solutions on network selection to support an underlay network selection for multiple subscriptions UE.

# 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 |
| Internal TR | 23.700-aa | Study on network selection for underlay/overlay access to multiple NPNs | TSG#99  (March, 2023) | TSG#100  (June, 2023) | Chen Xu,  China Mobile,  chenxu@chinamobile.com |

|  |  |  |  |
| --- | --- | --- | --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} | | | |
| TS/TR No. | Description of change | Target completion plenary# | Remarks |
|  |  |  |  |

# 6 Work item Rapporteur(s)

Chen Xu, China Mobile, chenxu@chinamobile.com

# 7 Work item leadership

CT1

# 8 Aspects that involve other WGs

# 9 Supporting Individual Members

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| --- |
| Supporting IM name |
| China Mobile |
| China Southern Power Grid |
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