**3GPP TSG- SA1 Meeting # 106 S1-241354**

**Jeju, South Korea, 27-31 May 2024 (revision of S1-241259)**

**Source: China Unicom, China Telecom**

**Title: New SID: Study on Multi-network Interoperability Enhancement**

**Document for: Approval**

**Agenda Item: 4**

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 Multi-network Interoperability Enhancement

Acronym: FS\_NWIOP

Unique identifier:

Potential target Release: Rel-20

# 1 Impacts

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

# 2 Classification of the Work Item and linked work items

## 2.1 Primary classification

### This work item is a …

|  |  |
| --- | --- |
| X | Study  |
|  | Normative – Stage 1 |
|  | Normative – Stage 2 |
|  | Normative – Stage 3 |
|  | Normative – Other\* |

**\* Other = e.g. testing**

## 2.2 Parent Work Item

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

### 2.3 Other related Work Items and dependencies

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

# 3 Justification

5G can be deployed in two different options, i.e. NSA ("Non-Stand Alone", also known as "E-UTRA-NR Dual Connectivity (EN-DC)" or "Architecture Option 3") and SA ("Stand-Alone"). The early deployments are adopting NSA as a means of fast launching 5G and may gradually evolve towards SA. Based on operators’ different network development strategies and progress, SA networks and NSA networks will coexist and interact for a long period of time.

There are some requirements of supporting interworking between 5G systems and interoperability with legacy 3GPP systems specified in TS 22.261 clause 5.1. Stage 2 procedures for user data interworking and Stage 3 protocol for HSS services for interworking with UDM are specified in TS 23.632 and TS 29.563. However, the existing requirements do not support the interoperability of NSA/EPC users accessing 5G SA networks. Thus, it is not always guaranteed for 5G subscribers to obtain consistent provision of 5G services in heterogeneous environment with coexisting SA and NSA networks, e.g., 5G subscribers of EPC/NSA networks face constrains to access and use 5G services in SA networks.

It would be beneficial to enable the interoperability of NSA/EPC users accessing and using 5G SA networks, which is an effective way to reduce CAPEX (e.g., investment in base stations)/OPEX(e.g., energy costs) and complexity of networks by retaining only SA networks instead of keeping both SA and NSA networks for SA operators, and to provide 5G users of the similar 5G service and user experience as in EPC/NSA networks when in SA networks.

# It is proposed to study related use cases and drive potential requirements of above-mentioned situation in the heterogenous networks.4 Objective

The objectives of this study are to investigate use cases, derive potential requirements and provide gap analysis to enable 5G subscribers of EPC/NSA networks to access 5G SA networks and 5G services, including

* Network access control
* Subscription information retrieval
* Service continuity
* Information of subscriber’s type (i.e., subscriber of a 5G SA network or a 5G NSA network)
* Others aspects, if any.

# 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 |
| TR | 22.XXX | Study on Multi-network Interoperability Enhancement | SA#106 | SA#107 |  |

|  |
| --- |
| 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)

# 7 Work item leadership

SA1

# 8 Aspects that involve other WGs

# 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| China Unicom |
| China Telecom |
| Huawei |
| ZTE |
| CATT |
| LG Uplus |
| SK Telecom |
| Dish Network |
| KPN |
|  |
|  |