**3GPP TSG- SA1 Meeting # 106 S1-241258**

**Jeju , Korea, 27-31 May 2024** **(revision of S1-240256, S1-241084)**

**Source: Deutsche Telekom**

**Title: New Study on Additional Registration to a Network**

**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 Additional Registration to a Network

Acronym: FS\_AddNet

Unique identifier:

Potential target Release: Rel-20

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes | X | X |  |  |  |
| No |  |  | 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

For a brand-new topic, use “N/A” in the table below. Otherwise indicate the 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 |
| 700022 | FS\_SMARTER | Use Case for Multi-network connectivity and service delivery across operators |
| 720005 | SMARTER | Concurrent connection to two networks in R16 requirements for Multi-network connectivity and service delivery across operators  |
| 880035 | FS\_EASNS | Use case on simultaneous access to multiple slices on different VPLMNs |
| 910038 | EASNS | Requirements for access to multiple slices on different VPLMNs |
| 890023 | FS\_PALS | Use case related to additionally selecting a hosting network  |
| 920038 | PALS | Requirements related to additionally selecting a hosting network |
| 960018 | FS\_DualSteer | Use case on Inter-PLMN scenario, requiring a UE to connect to an additional network |
| 1020031 | DualSteer | Requirements related to a DualSteer Device connecting to an additional network |

# 3 Justification

In previous releases several use cases have been discussed which would require a UE to be concurrently connected to two different networks:

- Release 16 – multi-network connectivity and service delivery across operators allows a UE to consume services from two different networks at the same time

- Release 19 – enhancements for network slicing covers the case where a UE connects to an additional network to be able to access a required network slice which is not available in the RPLMN

- Release 18 – access to localized networks allows a UE to additionally connect to a localized network to consume content or services which are only available in this network

- Release 19 – DualSteer is amongst others about switching a UE’s traffic via two networks.

Related requirements for the above features are mainly about what should happen once the connection to two networks is available but the question when and how a UE would register to an additional network is defined only very vaguely. Some very generic requirements are spread across TS 22.261 for the HPLMN to be able to give some priorities / policies / criteria for the selection of the (additional) network. There are no detailed requirements in stage 1, nor stage 2 or 3 specifications.

It is proposed to study related use cases from the above-mentioned work items to provide a complete picture when and what is needed in terms of registering on an additional network and how this could be achieved. The study should result in potential requirements that fit into the structure of TS 22.011 and provide a similar level of detail, which is a bit higher than usual for other SA1 work.

# 4 Objective

Study the aspect of registering under control of the HPLMN to an additional network, in existing and potential new use cases that are related to a UE or DualSteer device being concurrently connected to a PLMN and another network, and derive potential requirements and configurations to define

- trigger conditions of registration on an additional network,

- priorities among the candidates for an additional network,

- dependencies between the first selected network and the additional network, e.g. depending on the combination of available networks in a given situation, an appropriate choice to which additional network the UE tries to register

- behavior if one of the networks becomes unavailable or there are no preferred additional networks at all,

- restrictions and validity of the information (e.g. location, time, service).

Consolidate the requirements with an appropriate level of detail to fit in TS 22.011.

Note 1: Additional networks can be PLMNs or NPNs.

Note 2: Dual SIM scenarios except DualSteer are out of scope.

Note 3: This study will align with related ongoing stage 2 work on DualSteer in Rel. 19.

# 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 | 22.XXX | Study on Secondary Network Selection | TSG#106 (12/2024) | TSG#107 (03/2025) | Bischinger, Kurt, Deutsche Telekom, kurt.bischinger@magenta.at |

# 6 Work item Rapporteur(s)

Bischinger, Kurt; Deutsche Telekom; kurt.bischinger@magenta.at

# 7 Work item leadership

SA1

# 8 Aspects that involve other WGs

None

# 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| Deutsche Telekom |
| KDDI |
| T-Mobile US |
| Orange |
| Novamint |
| vivo |
| JSAT |
| Vodafone |
| Interdigital |
| China Telecom |