**3GPP TSG-SA WG1 Meeting #98e S1-221102\_DT**

**Electronic Meeting, 9 – 19 May 2022** *(revision of S1-22xxxx)*

**Source: China Unicom, Charter Communications?**

**pCR Title: Pseudo-CR on use case of service for non-N2 sharing network**

**Draft Spec: 3GPP TR 22.851**

**Agenda item: 7.5**

**Document for: Approval**

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*Abstract: Introduce the potential service continuity and QoS requirements for the non-N2 shared network in TR22.851.*

**1. Introduction**

The use case of non-N2 sharing network is an important use case in the network sharing. The contribution describes the use case and potential requirements of service continuity and QoS for non-N2 sharing network scenario.

**2. Use Cases**

Update the “Use Cases” section 5 of the new TR 22.851.

**3. Conclusions**

It is proposed to put the use case into the TR 22.851.

**4. Proposal**

It is proposed to agree the following changes to 3GPP TR 22.851.

\* \* \* First Change \* \* \* \*

## 5 Use cases

## 5.A Use case of Service Continuity and QoS

### 5.A.1 Description

The requirements to the services provided by the Participating Operator and the Hosting RAN operator for a UE moving between their service areas needs to be clearly defined. This service considerations are based on their user subscriptions and charging requirements from the Participating Operator. The service principle is not expected to be significantly different from the MOCN access sharing. The business here includes not only the operator’s name displayed in the UE UI, but also the service logics provided by both the Participating Operator and the Hosting RAN operator for the services, such as voice, SMS and data communications for the UE.

### 5.A.2 Pre-conditions

Assumptions,

1. OP 1 is the Hosting RAN operator of NG-RAN access network.

2. The f1 frequency band of NG-RAN will be allowed to be shared within one area.

3. UE 1 belongs to OP 1. UE 2 and UE N belong to OP 2.

4. The core network of OP 2 does not have N2 connection with 5G NR of OP1 .

5. The network between OP 1 and OP 2 have connections.

### 5.A.3 Service Flows

OP1

IMS

network

OP1

5G/4G

network (shared)

OP2

IMS

network

OP2

5G/4G network

Connection between network



UE 2 of

OP2

UE 1

Of OP1

UE N

Of OP2

Figure 5.A.3-1: Basic service scenario non-N2 shared network

1. UE 2 successfully registeres to OP 2’s PLMN via the shared NG-RAN

2. UE 1 successfully registers to OP 1's PLMN.

3. UE N successfully registers to OP 2's PLMN.

4. UE 2 initiates a 5G voice call to user N and succeeds under the shared network.

- OP 2 and OP1 do not need to expose the IMS network to each other.

- When UE 2 moves to OP 2's 4G area from the shared network, the call continues.

- When UE 2 moves to OP 2's 5G area from the shared network, the call does not drop.

5. UE 1 initiates 5G voice call to UE N. The call succeeds. When UE 1 moves to OP 1's 4G network, the call does not drop.

### 5.A.4 Post-conditions

### 5.A.5 Existing feature partly or fully covering use case functionality

SA1 has performed various studies on network sharing in previous releases, where related normative stage 1 requirements are introduced in TS 22.101 [x1].

TS 22.101 introduces requirements for provision of service capabilities in shared networks, examples are:

*The provision of services and service capabilities that is possible to offer in a network shall not be restricted by the existence of the network sharing It shall be possible for a core network operator to differentiate its service offering from other core network operators within the shared network.*

*It shall be possible to control the access to service capabilities offered by a shared network according to the core network operator the user is subscribed to.*

### 5.A.6 Potential New Requirements needed to support the use case

- 3GPP shall maintain the service continuity (e.g. for IMS services) for UEs moving between the 4G or 5G access network of a Participating Operator and the shared NG-RAN of a Hosting Operator.

- 3GPP shall maintain the communication QoS for voice and/or SMS services for UEs moving between a non-shared access network of a Participating Operator and the shared NG-RAN of a Hosting Operator.