**SA WG2 Meeting #161 S2-2403209**

**February 26 – March 1, 2024, Athens, Greece (Revision of S2-2402918)**

**Source: InterDigital Inc., NEC, Samsung, China Mobile**

**Title: Key Issue #4 Update to Remove EN**

**Document for: Approval**

**Agenda Item: 19.8**

**Work Item / Release: FS\_UIA\_ARC / Rel-19**

*Abstract of the contribution:* *This paper proposes an update to Key Issue #4 to remove the Editor’s Note.*

# 1 Discussion

The following editor’s note is in Key Issue #4.

Editor's note: It is FFS whether to include "whether and how the operator restricts the number of simultaneously active non-3GPP devices per SUPI (i.e. per subscription) " in this key issue.

The associated SA1 requirements comes from TS 22.101 and state as follows:

The operator and the subscriber shall be able to restrict the number of simultaneously active User Identifiers per UE.

The operator shall be able to set restrictions for devices accessing the network and its services via non-3GPP access with their User Identity linked to a 3GPP subscription. The 3GPP system shall support restrictions based on the User Identity provider, the roaming status of the linked 3GPP subscription, and the network service that is accessed.

In the Rel-19 FS\_UIA\_ARC study, in the context of Key Issues 1, 2, and 3, the following architectural assumption has been agreed. Thus, in the context of Key Issues 1, 2, and 3, the "number of simultaneously active User Identifiers per UE" is always 1.

When the user identifier applies to a human, only a single user identifier is active with a UE subscription at a given time and it is assumed that the specific user identifier is associated with all of the UE's traffic during the time that specific user identifier is active with the UE's subscription.

In the context of Key Issue #4, it can be expected that more than one non-3GPP device will simultaneously use a user identity to access the 5GS via the same gateway UE.

The home operator of the gateway UE may want to optionally limit the number of non-3GPP devices that may simultaneously use a user identity to access the 5GS via the same gateway UE. For example, an operator may have an SLA in place with the subscriber that states how many non-3GPP devices may simultaneously use a user identity to access the 5GS via the subscriber’s UE/5G-RG. Thus, it is proposed to remove the editor’s note and add "whether and how the operator can optionally restrict the number of non-3GPP devices that simultaneously use a user identity to access the 5GS per UE or 5G-RG (i.e. per SUPI / per subscription)" to key issue #4.

An example scenario is this:

1. 10 Devices connect to an RG.
2. Each of the 10 devices have their own identifier. For example, user-identifier-1 is provisioned on device #1 and user-identifier-2 is provisioned on device #2.
3. The operator may want to restrict the number of devices that use a user-identifier to connect via the RG. Thus, when an 11th device tries to connect, the operator should be able to deny the connection.

# 2 Proposal

It is proposed to include the following changes in TR 23.700-32 V0.1.0.

 **\* \* \* \* Start of Changes \* \* \* \***

## 5.4 Key Issue #4: Identifying non-3GPP Devices Connecting behind a UE or 5G-RG

### 5.4.1 Description

This key issue will study whether and how 5GC identifies individual non-3GPP devices connecting behind a UE or 5G-RG and whether and how to provide policy control for the traffic associated with individual non-3GPP devices.

The use case that is associated with this key issue is the case where non-3GPP devices behind a UE or 5G-RG need to be identified.

The objective of this key issue is how an identifier is used by the network to control the traffic to/from UE or 5G-RG when the traffic is associated with the non-3GPP devices. This objective differs from existing support for AUN3 devices in TS 23.316 [7] because the objective is to enable the non-3GPP devices to be identified and to use only the subscription of the UE or 5G-RG to access the 5GC (i.e. the UE or 5G-RG should have to maintain only a NAS Context itself and not for each non-3GPP device).

Solutions to this key issue will address:

- whether and how the 5GC identifies individual non-3GPP devices connecting behind a UE or 5G-RG. (e.g. in order to charge the individual non-3GPP devices),

- whether and how to provide policy control for the traffic of individual non-3GPP devices connecting behind a UE or 5G-RG. Including whether and how to trigger policy control for the traffic of individual non-3GPP devices via PCF and NEF APIs, including whether and how to support concurrent services with differing QoS requirements launched by the different non-3GPP devices, and

- whether and how the operator can optionally restrict the number of simultaneously active identifiable non-3GPP devices per UE or 5G-RG (i.e. per SUPI / per subscription).

NOTE 1: Changes to the layer 1 or layer 2 protocols of non-3GPP devices are not in scope of this study. 5G authentication for non-3GPP devices behind 5G-RG is not assumed in this study.

NOTE 2: Conclusions related to an 5G-RG should be shared with the Broadband Forum (BBF) and CableLabs.

NOTE 3: Solutions for Ethernet PDU Session should work in the presence of randomized MAC addresses.

**\* \* \* \* End of Changes \* \* \* \***