**3GPP TSG-CT WG1 Meeting #150C1-244506**

**Maastricht, Netherlands, 19-23 August 2024 *was C1-244091***

**3GPP TSG-CT WG3 Meeting #136C3-244470**

**Maastricht, Nederlands, 19-23 August 2024 *was C3-244036***

**3GPP TSG-CT WG4 Meeting #124C4-243410**

**Maastricht, Nederlands, 19-23 August 2024 *was C4-243232***

**Source: InterDigital Inc.**

**Title: New WID on Identifying non-3GPP Devices Connecting behind a UE or 5G-RG**

**Document for: Agreement**

**Agenda item: 19.1.1 (CT1) / 19.1.1 (CT3) / 5.2 (CT4)**

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: Identifying non-3GPP Devices Connecting behind a UE or 5G-RG

Acronym: UIA\_ARC

Unique identifier:

Potential target Release: Rel-19

# 1 Impacts

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

# 2 Classification of the Work Item and linked work items

## 2.1 Primary classification

### This work item is a:

|  |  |
| --- | --- |
|  | Study  |
|  | Normative – Stage 1 |
|  | Normative – Stage 2 |
| x | 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) |
| UIA\_ARC | SA2 | 1040085 | Identifying non-3GPP Devices Connecting behind a UE or 5G-RG |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| 780004 | Study on a Layer for User Centric Identifiers and Authentication | SA1 study on requirements for User Identifiers |
| 800012 | User Identities and Authentication | SA1 normative work on requirements for User Identifiers |
| 1020063 | Study on User Identities and Authentication Architecture | SA2 Study on User Identities and Authentication Architecture |
| 1030032 | Study on security aspects of User Identities and Authentication | SA3 Study on security aspects of User Identities and Authentication |

**Dependency on non-3GPP (draft) specification: None**

# 3 Justification

The stage-2 work of UIA\_ARC started at SA#102 with the SA2 study item on User Identities and Authentication Architecture (FS\_UIA\_ARC). The key issues, solutions, and conclusions of the SA2 study are captured in TR 23.700-32. The conclusions specified in TR 23.700-32 will be the base for the normative work in SA2.

Furthermore, a new SA2 work item “Identifying non-3GPP Devices Connecting behind a UE or 5G-RG ” (UIA\_ARC) was approved by TSG at SA#104, see SP-240971.

The stage-2 work of UIA\_ARC Security aspects started at SA#103 with the SA3 study item on security aspects of User Identities and Authentication Architecture (FS\_UIA\_Sec). The key issues, solutions, and conclusions of the SA3 study are captured in TR 33.700-32. The conclusions specified in TR 33.700-32 will be the base for the normative work in SA3.

Considering the above, impacts on protocols and interfaces under CT WGs' responsibilities are foreseen. The CT WGs will need to carry out stage-3 work in Rel-19 to satisfy the normative requirements arising out of stage-2 work.

Based on normative progress of stage 2, this WID will be updated as needed.

# 4 Objective

The objective of this work item is to specify the CT aspects of UIA\_ARC. The stage-3 work shall be started after the applicable normative stage-2 requirements are available.

The stage-3 aspects will include the following (CT WGs impact areas will be identified based on the progress in the normative stage-2 work):

CT1:

- Potential enhancements to the 5GSM to support association of the traffic from individual non-3GPP devices with a device identifier and use the device identifier to obtain QoS Settings for the traffic.

- Potential enhancements for the UE to provide device identifier and user plane address to the network, e.g. via the 5GSM or in a DHCPv6 message.

- Potential enhancements to support restrictions on the maximum number of simultaneous active device identifiers per UE/5G-RG.

CT3:

* Potential enhancements to policy association procedures to support non-3GPP devices requiring QoS differentiation, e.g., the PCF may base its policy decision on the device identifier information.

- Potential impacts on UDR service APIs (Nudr\_DataRepository API) supporting storing the device identifiers and the corresponding QoS/Policies associated with UE/5G-RG subscription.

* Impacts on the NEF NBI to support AF providing policies for non-3gpp devices via the NEF.

CT4:

- Potential updates to device identifiers and their corresponding QoS/Policies associated with a UE/5G-RG subscription are provisioned into the UDR.

- Potential updates to define an optional restriction on the maximum number of simultaneous active device identifiers per UE/5G-RG.

- Potential updates on non-3GPP device access management.

# 5 Expected Output and Time scale

|  |
| --- |
| **Impacted existing TS/TR *{One line per specification. Create/delete lines as needed}*** |
| **TS/TR No.** | **Description of change**  | **Target completion plenary#** | **Remarks** |
| 24.501 | *Potential enhancements to the 5GSM to support association of the traffic from each individual non-3GPP device with a Device Identifier and use the Device Identifier to obtain QoS Settings for the traffic.* Potential enhancements for the UE to provide device identifier and user plane address to the network, e.g. via the 5GSM or in a DHCPv6 message. Potential enhancements to support restrictions on the maximum number of simultaneous active device identifiers per UE/5G-RG. | TSG#109 (September 2025) | *CT1 Responsibility* |
| 29.122 | *Potential enhancements on NEF NBIs to request specific QoS for specific devices.* | TSG#109 (September 2025) | *CT3 Responsibility* |
| 29.512 | 1. *Potential impact on the Npcf\_SMPolicyControl API to specify that the PCF may receive the Device Identifier and user plane address from the SMF.*
2. *Potential enhancements on SM Policy Association procedures to specify that the PCF will take it into account for policy decisions based on the Device Identifier information.*
 | TSG#109 (September 2025) | *CT3 Responsibility* |
| 29.513 | *Potential update the SM Policy Association procedures to take Device Identifier information into account before PCF making policy decision.* | TSG#109 (September 2025) | *CT3 Responsibility* |
| 29.519 | *Potential update of the Application Data in UDR to support non-3gpp device-specific policies, e.g., Device Identifiers and their corresponding QoS/Policies associated with a UE/5G-RG subscription.* | TSG#109 (September 2025) | *CT3 Responsibility* |
| 29.522 | *Specify the procedures and/or API(s) for provisioning device identifiers and the corresponding QoS/Policies.*  | TSG#109 (September 2025) | *CT3 Responsibility* |
| 23.003 | *Enforcement of the format of the device identifier.* | TSG#109 (September 2025) | *CT4 Responsibility* |
| 29.503 | *Potential updates to define an optional restriction on the maximum number of simultaneous active device identifiers per UE/5G-RG.* | TSG#109 (September 2025) | *CT4 Responsibility* |
| 29.504 | *Potential updates to device identifiers and their corresponding QoS/Policies associated with a UE/5G-RG subscription that is provisioned into the UDR.* | TSG#109 (September 2025) | *CT4 Responsibility* |
| 29.505 | *Potential updates on Device Identifiers and their corresponding QoS/Policies associated with a UE/5G-RG subscription is provisioned into the UDR.* | TSG#109 (September 2025) | *CT4 Responsibility* |
| 29.518 | *Potential updates on optional restriction on the maximum number of simultaneous active device identifiers per UE/5G-RG.* | TSG#109 (September 2025) | *CT4 Responsibility* |
| 29.502 | *Potential updates on optional restriction on the maximum number of simultaneous active device identifiers per UE/5G-RG.* | TSG#109 (September 2025) | *CT4 Responsibility* |

# 6 Work item Rapporteur(s)

Sethi, Anuj, InterDigital (anuj.sethi@interdigital.com)

# 7 Work item leadership

CT4

# 8 Aspects that involve other WGs

SA3 for security aspects.

# 9 Supporting Individual Members

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| Supporting IM name |
| InterDigital Inc. |
| Huawei |
| HiSilicon |
| Vodafone |
| LG Electronics |
| vivo |
| CATT |
| Lenovo |
| ZTE |
| Apple |
| AT&T |
|  |