**3GPP TSG-CT WG3 Meeting #135C3-243060**

**Hyderabad, IN, 27 - 31 May, 2024**

**Source: Ericsson**

**Title: New WID on CT aspects of Providing per-subscriber VLAN instructions from UDM and DN-AAA**

**Document for: Agreement**

**Agenda Item: 19.1.1**

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: CT aspects of Providing per-subscriber VLAN instructions from UDM and DN-AAA

Acronym: TEI19\_VLANSUB

Unique identifier: To be allocated

Potential target Release: Rel-19

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (DN-AAA) |
| 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) |
| TEI19\_VLANSUB | SA2 | 1030022 | Providing per-subscriber VLAN instructions from UDM and DN-AAA |

### 2.3 Other related Work Items and dependencies

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

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

# 3 Justification

SA2#161 agreed S2-2403556 as new WID "Providing per-subscriber VLAN instructions from UDM and DN-AAA" (TEI19\_VLANSUB) which analysis in deployments for e.g. FWA or wholesale Ethernet services there is a need to add subscriber specific VLAN tag values, or remove VLAN tags only for certain subscribers. There is thus a need to support per-subscriber specific VLAN tag handling. The objective in the work item is to add support for VLAN handling instructions in SM subscription data in UDM/UDR and DN-AAA.

In the draft TS 23.501 CR included in S2-2403516 (revised as S2-2403556 not including the draft CRs), clause 5.6.6 Secondary authentication/authorization by a DN-AAA server during the establishment of a PDU Session added VLAN handling instructions (e.g. the C-TAG to be inserted or removed, S-TAG to be inserted or removed); this shall apply only for PDU Session of Ethernet PDU type and is further described in clause 5.6.10.2. Clause 5.6.10.2 Support of Ethernet PDU Session type, where how Ethernet traffic is handled on N6 interface is defined, is updated as SMF may determine instructions on VLAN handling (e.g. the C-TAG to be inserted or removed, S-TAG to be inserted or removed), either based on local configuration, based on subscription data from UDM or based on information received from DN-AAA. In case there is both local configuration, subscription data from UDM related to VLAN handling, and/or VLAN handling information received from DN-AAA, the information on handling the VLAN tag received from DN-AAA takes precedence and supersedes the information received from UDM, and both the subscription data and the information from DN\_AAA takes precedence over the local configuration. Also added a Note that the capability for configuring C-TAG to be inserted or removed, S-TAG to be inserted or removed defined above is optional. Deployments can also use Ethernet type PDU Sessions where the 5GC does not modify any VLAN information in the PDU(s) it is forwarding.

In the draft TS 23.502 CR included in S2-2403516, the VLAN tag handling information was added in the Session Management Subscription data (data needed for PDU Session Establishment).

SA#103 approved SP-240128 as new WID "Providing per-subscriber VLAN instructions from UDM and DN-AAA" (TEI19\_VLANSUB) for SA2 normative work.

Considering the above, impacts on CT aspects of protocols and interfaces under CT WGs' responsibilities are foreseen and the related work in CT WGs should be carried out within Rel-19.

# 4 Objective

The objective of this work item is to specify the stage 3 aspects to provide per-subscriber VLAN instructions from UDM and DN-AAA according to stage 2 requirements agreed under the stage 2 work item TEI19\_VLANSUB.

The following potential impacts on 3GPP CT working groups are identified (non-exhaustive, additional areas can be identified based on progress in SA2):

CT3

- Potential impacts on DN-AAA server providing the VLAN tag handling information in the secondary authentication/authorization procedure.

- Potential impacts on SMF may determine instructions on VLAN handling during the establishment of an Ethernet type PDU Session based on local configuration, subscription data from UDM or information received from DN-AAA, with the VLAN handling information received from DN-AAA server takes precedence over subscription data from UDM and both take precedence over the local configuration if multiple VLAN handling information is provided.

- Potential impacts on N6 interface VLAN tag handling upon SMF determination during the establishment of an Ethernet type PDU Session.

CT4

- Potential impacts on adding VLAN tag handling information in the Session Management Subscription data (data needed for PDU Session Establishment).

# 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 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} | | | |
| TS/TR No. | Description of change | Target completion plenary# | Remarks |
| 29.503 | Potential impacts on adding VLAN tag handling information in the Session Management Subscription data (data needed for PDU Session Establishment). | TSG CT#108 (June 2025) | CT4 responsibility |
| 29.561 | 1. Potential impacts on DN-AAA server providing the VLAN tag handling information in the secondary authentication/authorization procedure.  2. Potential impacts on SMF may determine instructions on VLAN handling during the establishment of an Ethernet type PDU Session based on local configuration, subscription data from UDM or information received from DN-AAA, with the VLAN handling information received from DN-AAA server takes precedence over subscription data from UDM and both take precedence over the local configuration if multiple VLAN handling information is provided.  3. Potential impacts on N6 interface VLAN tag handling upon SMF determination during the establishment of an Ethernet type PDU Session. | TSG CT#108 (June 2025) | CT3 responsibility |

# 6 Work item Rapporteur(s)

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# 7 Work item leadership

CT3

# 8 Aspects that involve other WGs

None

# 9 Supporting Individual Members

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| --- |
| Supporting IM name |
| Ericsson |
| Samsung |
| Verizon? |
| Nokia? |
| Oracle |
| CableLabs? |
|  |