**3GPP TSG-CT WG4 Meeting #98eC4-203334**

**E-Meeting, 02nd – 12th June 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.563** | **CR** | **0003** | **rev** | **-** | **Current version:** | **16.0.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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|  | | | | | | | | | | |
| ***Title:*** | Initial Registration | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | CT4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | UDICOM | | | | |  | ***Date:*** | | | 2020-05-07 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) Rel-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | When the UE performs an initial registration, the UDM must send an indication to the HSS to cancel a previous MME potentially registered in EPS only if the dual registration flag is not set.  However, in the same scenario, the HSS must cancel a previous SGSN potentially registered in EPS regardless of the setting of the dual registration flag. | | | | | | | | |
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| ***Summary of change:*** | | - Add a new deregistration reason, so UDM can indicate HSS that the deregistration is to be done only towards SGSN (if any) but not towards MME due to the presence of both intitial registration and dual registration flags received from AMF.  - Clarify the different Cancellation-Type values to be used by HSS towards the serving nodes. | | | | | | | | |
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| ***Consequences if not approved:*** | | Misalignment with stage-2 specifications. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 2, 5.4.2.2.2, 6.3.6.3.3, A.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | This CR introduces backwards-compatible new features to the following OpenAPI specifications:  - TS29563\_Nhss\_UECM.yaml | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.501: "System Architecture for the 5G System; Stage 2".

[3] 3GPP TS 23.502: "Procedures for the 5G System; Stage 2".

[4] 3GPP TS 29.500: "5G System; Technical Realization of Service Based Architecture; Stage 3".

[5] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".

[6] 3GPP TS 23.335: "User Data Convergence (UDC); Technical realization and information flows".

[7] 3GPP TS 29.335: "User Data Convergence (UDC); User Data Repository Access Protocol over the Ud interface".

[8] 3GPP TS 23.632: "User Data Interworking, Coexistence and Migration".

[9] IETF RFC 7540: "Hypertext Transfer Protocol Version 2 (HTTP/2)".

[10] OpenAPI Initiative, "OpenAPI 3.0.0 Specification", <https://github.com/OAI/OpenAPI-Specification/blob/master/versions/3.0.0.md>

[11] IETF RFC 8259: "The JavaScript Object Notation (JSON) Data Interchange Format".

[12] IETF RFC 7807: "Problem Details for HTTP APIs".

[13] 3GPP TS 29.503: "5G System; Unified Data Management Services; Stage 3".

[14] 3GPP TR 21.900: "Technical Specification Group working methods".

[15] 3GPP TS 23.003: "Numbering, addressing and identification".

[xx] 3GPP TS 29.272: "Evolved Packet System; MME and SGSN Related Interfaces Based on Diameter Protocol".

\* \* \* Next Change \* \* \* \*

##### 5.4.2.2.2 MME Deregistration

Figure 5.4.2.2.2-1 shows a scenario where the NF service consumer (UDM) requests HSS to initiate S6a Cancel Location procedure towards the MME due to IRAT mobility. The request contains the UE's identity which shall be an IMSI.



Figure 5.4.2.2.2-1: MME Deregistration

1. The NF service consumer sends a POST request (custom method: deregister-mme) to the HSS; the request body contains the UE identity (IMSI) and the deregistration reason.

The HSS, based on the value indicated in the deregistration reason, initiates a Cancel Location towards the serving node, including a Cancellation Type value (see 3GPP TS 29.272 [xx]) as follows:

- "UE\_INITIAL\_AND\_SINGLE\_REGISTRATION": S6a/S6d Cancel Location sent towards MME/SGSN, with a Cancellation-Type set to INITIAL\_ATTACH\_PROCEDURE;

- "UE\_INITIAL\_AND\_DUAL\_REGISTRATION": S6d Cancel Location sent towards SGSN, with a Cancellation-Type set to INITIAL\_ATTACH\_PROCEDURE;

- "EPS\_TO\_5GS\_MOBILITY": S6a Cancel Location sent towards MME, with a Cancellation-Type set to MME\_UPDATE\_PROCEDURE; the HSS shall delete the stored MME address and MME number;

- "EPS\_TO\_5GS\_MOBILITY": S6d Cancel Location sent towards SGSN, with a Cancellation-Type set to SGSN\_UPDATE\_PROCEDURE; the HSS shall delete the stored SGSN address and SGSN number.

2a. On success, the HSS responds with "204 No Content".

2b. If there is no valid subscription data for the UE, or the UE is not registered in EPS network for 3GPP access, HTTP status code "404 Not Found" should be returned including additional error information in the response body (in the "ProblemDetails" element).

On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the POST response body.

\* \* \* Next Change \* \* \* \*

##### 6.3.6.3.3 Enumeration: DeregistrationReason

Table 6.3.6.3.3-1: Enumeration DeregistrationReason

|  |  |
| --- | --- |
| Enumeration value | Description |
| "UE\_INITIAL\_AND\_SINGLE\_REGISTRATION" | This value is used when the UDM needs to indicate to HSS that the MME/SGSN, if any, shall be cancelled due to an initial registration for single registration. |
| "UE\_INITIAL\_AND\_DUAL\_REGISTRATION" | This value is used when the UDM needs to indicate to HSS that an SGSN shall be cancelled (due to initial registration), but the MME shall not be cancelled (due to dual registration). |
| "EPS\_TO\_5GS\_MOBILITY" | This value is used when the UDM needs to indicate to HSS that the MME/SGSN, if any, shall be cancelled due to a mobility event (i.e. for single registration which is not an initial registration). |

\* \* \* Next Change \* \* \* \*

## A.4 Nhss\_UEContextManagement API

***(… text not shown for clarity …)***

# ENUMS:

DeregistrationReason:

anyOf:

- type: string

enum:

- UE\_INITIAL\_AND\_SINGLE\_REGISTRATION

- UE\_INITIAL\_AND\_DUAL\_REGISTRATION

- EPS\_TO\_5GS\_MOBILITY

- type: string

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