**3GPP TSG-CT WG1 Meeting #138-eC1-225635**

**E-Meeting, 10th – 14th October 2022**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.229** | **CR** | **6568** | **rev** | **-** | **Current version:** | **17.8.1** |  |
|  | | | | | | | | |
| *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 | **x** | Radio Access Network |  | Core Network |  |

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| ***Title:*** | SNPN: PS Data Off and SMS | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eNPN | | | | |  | ***Date:*** | | | 2022-09-29 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | There is an EN that conditions for Data Off needs to be specified once the UE configuration for SNPN is specified. That has happened and this text adds the references to 24.167 and the related text. Further, some errors were found in the previously added text and missing text for availability of SMS needs to be added. | | | | | | | | |
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| ***Summary of change:*** | | Editorial error correction  Addition of conditions for availability for SMS  Addition of Data Off conditions and removal of Editor's Note | | | | | | | | |
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| ***Consequences if not approved:*** | | Data Off not possible to use in SNPNs, SMS may be not available in SNPNs. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | U.3.1.2, U.3.1.2A, U.3.1.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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's revision history:*** | |  | | | | | | | | |

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

### U.3.1.2 Availability for calls

This subclause documents the minimal requirements for being available for voice communication services when using 5GS.

A UE shall perform an initial registration as specified in subclause 5.1.1.2 using a QoS flow for SIP signalling (see annex U.2.2.1), if all the following conditions are met:

1) if the UE is operating in the "voice centric" way;

2) if the UE is capable of receiving any (but not necessarily all) of the media types which the CS domain supports, such that the media type can also be used when accessing the IM CN subsystem using:

a) the 5GS IP-CAN via NR;

b) the 5GS IP-CAN via E-UTRA; or

NOTE 1: The use of 5GS IP-CAN via E-UTRA can also be the result of an inter-RAT fallback during setup of the IMS voice call. This can occur, for example, when a UE not supporting the media type in 5GS IP-CAN via NR initiates an IMS voice call in 5GS IP-CAN via NR.

c) the EPS IP-CAN;

NOTE 2: EPS can be used as IP-CAN as the result of an EPS fallback during setup of the IMS voice call. This can occur, for example, when a UE not supporting the media type in 5GS IP-CAN via NR initiates an IMS voice call in 5GS IP-CAN via NR, or when a UE not supporting the media type in 5GS IP-CAN via E-UTRA initiates an IMS voice call in 5GS IP-CAN via E-UTRA.

3) if:

a) the media type of item 2 is an "audio" media type;

b) the UE supports codecs suitable for (conversational) speech; and

c) the "audio" media type is not restricted from inclusion in an SDP message according to the media type restriction policy as specified in subclause 6.1.1;

and one of the following is true:

a) 3GPP PS data off status is "inactive";

b) 3GPP PS data off status is "active", the UE is in the HPLMN or EHPLMN or a subscribed SNPN, and MMTEL voice is a 3GPP PS data off exempt service; or

c) 3GPP PS data off status is "active", the UE is in a VPLMN or a non-subscribed SNPN, the UE is configured with an indication that MMTEL voice is a 3GPP PS data off exempt service in a VPLMN or a non-subscribed SNPN, and MMTEL voice is a 3GPP PS data off roaming exempt service;

4) if the UE determines that its contact has not been bound to a public user identity using the IP-CAN, such that the contact is expected to be used for the delivery of incoming requests in the IM CN subsystem relating to the media of item 2 and item 3;

5) if the IMSVoPS indicator, provided by the lower layers indicates voice is supported;

6) if the procedures to perform the initial registration are enabled (see 3GPP TS 24.305 [8T]); and

7) if the PDU session used for IMS is:

a) available; or

b) not available, and the UE is allowed to send a PDU SESSION ESTABLISHMENT REQUEST message to establish a PDU session with 5GS QoS flow that is needed for performing the initial registration as described in U.2.2.1.

NOTE 3: Regardless of any of the above conditions, a UE might attempt to register with the IM CN subsystem at any time.

EXAMPLE: As an example of the note, a UE configured to preferably attempt to use the 5GS to access IM CN subsystem can perform an initial registration as specified in subclause 5.1.1.2, if the conditions in items 2, 3, 4, 5, 6 and 7 in this subclause, evaluate to true.

The UE indicates to the non-access stratum the status of being available for voice over PS when:

I) the UE is capable of receiving any (but not necessarily all) of the media types which the CS domain supports, such that the media type can also be used when accessing the IM CN subsystem using:

a) the 5GS IP-CAN via NR;

b) the 5GS IP-CAN via E-UTRA; or

NOTE 4: The use of 5GS IP-CAN via E-UTRA can also be the result of an inter-RAT fallback during setup of the IMS voice call. This can occur, for example, when a UE not supporting the media type in 5GS IP-CAN via NR initiates an IMS voice call in 5GS IP-CAN via NR.

c) the EPS IP-CAN;

NOTE 5: EPS can be used as IP-CAN as the result of an EPS fallback during setup of the IMS voice call. This can occur, for example, when a UE not supporting the media type in 5GS IP-CAN via NR initiates an IMS voice call in 5GS IP-CAN via NR, or when a UE not supporting the media type in 5GS IP-CAN via E-UTRA initiates an IMS voice call in 5GS IP-CAN via E-UTRA.

II) if the media type of item I is an "audio" media type, the UE supports codecs suitable for (conversational) speech, the "audio" media type is not restricted from inclusion in an SDP message according to the media type restriction policy as specified in subclause 6.1.1; and:

a) 3GPP PS data off status is "inactive";

b) 3GPP PS data off status is "active", the UE is in the HPLMN, the EHPLMN or a subscribed SNPN, and MMTEL voice is a 3GPP PS data off exempt service; or

c) 3GPP PS data off status is "active", the UE is in a VPLMN or a non-subscribed SNPN, the UE is configured with an indication that MMTEL voice is a 3GPP PS data off roaming exempt service in the VPLMN or MMTEL voice is a 3GPP PS data off non-subscribed exempt service in the non-subscribed SNPN; and

III) the UE determines a contact has been bound to a public user identity using the IP-CAN, such that this contact is expected to be used for the delivery of incoming requests in the IM CN subsystem relating to such media.

The UE indicates to the non-access stratum the status of being not available for voice over PS when:

I) in response to receiving the IMSVoPS indicator indicating voice is supported, the UE:

- initiated an initial registration as specified in subclause 5.1.1.2, received a final response to the REGISTER request sent, but the conditions for indicating the status of being available for voice over PS are not met; or

- did not initiate an initial registration as specified in subclause 5.1.1.2 and, these conditions for indicating the status of being available for voice over PS are not met; or

II) the conditions for indicating the status of being available for voice over PS are no longer met.

NOTE 6: The status of being not available for voice over PS is used for domain selection for UE originating sessions / calls specified in 3GPP TS 23.501 [257] subclause 5.16.3.5.

### U.3.1.2A Availability for SMS

The UE determines that the UE is able to use SMS using IMS if the UE:

I) is capable of using the MIME type "application/vnd.3gpp.sms" (see 3GPP TS 24.341 [8L]), such that the MIME type can also be used when accessing the IM CN subsystem using the current IP-CAN;

II) supports the role of an SM-over-IP sender (see 3GPP TS 24.341 [8L]);

IIA) determines the PDU session used for IMS exists;

III) determines a contact has been bound to a public user identity using the IP-CAN, such that this contact is expected to be used for the delivery of incoming requests in the IM CN subsystem relating to such media; and

IV) the UE does not determine that SMS over IP is restricted in 3GPP TS 24.341 [8L] subclause 5.2.1.3; and

V) the 3GPP PS data off status is:

- "inactive";

- "active", the UE is in the HPLMN, the EHPLMN or a subscribed SNPN, and SMS over IMS is a 3GPP PS data off exempt service; or

- "active", the UE is in a VPLMN or a non-subscribed SNPN, the UE is configured with an indication that SMS over IMS is a 3GPP PS data off roaming exempt service in the VPLMN or SMS over IMS is a 3GPP PS data off non-subscribed exempt service in the non-subscribed SNPN.

When above criteria are not met, the UE determines that SMS using IMS is unavailable.

NOTE: The status that SMS using IMS is unavailable is used for domain selection for UE originating SMS specified in 3GPP TS 23.501 [257] subclause 5.16.3.8.

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

### U.3.1.5 3GPP PS data off

If the 3GPP PS data off status is "active" the UE shall only send initial requests that:

1) are associated with a 3GPP IMS service which enforces 3GPP PS data off;

NOTE 1: These services are specified in 3GPP TS 22.011 [1C], and enforcement of 3GPP PS data off is described in the respective service specifications.

2) are associated with an emergency service; or

3) are associated with 3GPP PS data off exempt services configured in the UE using one or more of the following methods:

- the non\_3GPP\_ICSIs\_exempt node specified in 3GPP TS 24.167 [8G], if the UE is in the HPLMN or the EHPLMN, or if the UE is in the VPLMN and the non\_3GPP\_ICSIs\_roaming\_exempt node specified in 3GPP TS 24.167 [8G] is not configured;

- the non\_3GPP\_ICSIs\_roaming\_exempt node specified in 3GPP TS 24.167 [8G], if the UE is in the VPLMN;

- the non\_3GPP\_ICSIs\_exempt node in the EF3GPPPSDATAOFFservicelist file described in 3GPP TS 31.102 [15C], if the UE is in the HPLMN or the EHPLMN, or if the UE is in the VPLMN and the non\_3GPP\_ICSIs\_roaming\_exempt node in the EF3GPPPSDATAOFFservicelist file described in 3GPP TS 31.102 [15C] is not configured;

- the non\_3GPP\_ICSIs\_roaming\_exempt node in the EF3GPPPSDATAOFFservicelist file described in 3GPP TS 31.102 [15C], if the UE is in the VPLMN;

- the /<X>/SNPN\_Configuration/<X>/3GPP\_PS\_data\_off/non\_3GPP\_ICSIs\_exempt node specified in 3GPP TS 24.167 [8G], if the UE is in the subscribed SNPN, or if the UE is in a non-subscribed SNPN and the non\_3GPP\_ICSIs\_non-subscribed\_exempt node specified in 3GPP TS 24.167 [8G] is not configured; or

- the non\_3GPP\_ICSIs\_non-subscribed\_exempt node specified in 3GPP TS 24.167 [8G], if the UE is in a non-subscribed SNPN.

If the UE is configured with both the non\_3GPP\_ICSIs\_exempt node of 3GPP TS 24.167 [8G] and the non\_3GPP\_ICSIs\_exempt node in the EF3GPPPSDATAOFFservicelist file described in 3GPP TS 31.102 [15C], then the non\_3GPP\_ICSIs\_exempt node in the EF3GPPPSDATAOFFservicelist file described in 3GPP TS 31.102 [15C] shall take precedence.

If the UE is configured with both the non\_3GPP\_ICSIs\_roaming\_exempt node of 3GPP TS 24.167 [8G] and the non\_3GPP\_ICSIs\_roaming\_exempt node in the EF3GPPPSDATAOFFservicelist file described in 3GPP TS 31.102 [15C], then the non\_3GPP\_ICSIs\_roaming\_exempt node in the EF3GPPPSDATAOFFservicelist file described in 3GPP TS 31.102 [15C] shall take precedence.

If the 3GPP PS data off status changes from "inactive" to "active" the UE shall release all dialogs that

1) are not associated with a 3GPP IMS service which enforces 3GPP PS data off;

NOTE 2: These services are specified in 3GPP TS 22.011 [1C], and enforcement of 3GPP PS data off is described in the respective service specifications.

2) are not associated with an emergency service; and

3) are not associated with 3GPP data off exempt services configured in the UE using one or more of the following methods:

- the non\_3GPP\_ICSIs\_exempt node specified in 3GPP TS 24.167 [8G], if the UE is in the HPLMN or the EHPLMN, or if the UE is in the VPLMN and the non\_3GPP\_ICSIs\_roaming\_exempt node specified in 3GPP TS 24.167 [8G] is not configured;

- the non\_3GPP\_ICSIs\_roaming\_exempt node specified in 3GPP TS 24.167 [8G], if the UE is in a VPLMN;

- the non\_3GPP\_ICSIs\_exempt node in the EF3GPPPSDATAOFFservicelist file described in 3GPP TS 31.102 [15C], if the UE is in the VPLMN;

- the non\_3GPP\_ICSIs\_exempt node in the EF3GPPPSDATAOFFservicelist file described in 3GPP TS 31.102 [15C], if the UE is in the HPLMN or the EHPLMN, or if the UE is in the VPLMN and the non\_3GPP\_ICSIs\_roaming\_exempt node in the EF3GPPPSDATAOFFservicelist file described in 3GPP TS 31.102 [15C] is not configured; or

- the non\_3GPP\_ICSIs\_roaming\_exempt node in the EF3GPPPSDATAOFFservicelist file described in 3GPP TS 31.102 [15C], if the UE is in the VPLMN.

- the /<X>/SNPN\_Configuration/<X>/3GPP\_PS\_data\_off/non\_3GPP\_ICSIs\_exempt node specified in 3GPP TS 24.167 [8G], if the UE is in the subscribed SNPN, or if the UE is in a non-subscribed SNPN and the non\_3GPP\_ICSIs\_non-subscribed\_exempt node specified in 3GPP TS 24.167 [8G] is not configured;

- the non\_3GPP\_ICSIs\_non-subscribed\_exempt node specified in 3GPP TS 24.167 [8G], if the UE is in a non-subscribed SNPN.

If the UE is configured with both the non\_3GPP\_ICSIs\_exempt node of 3GPP TS 24.167 [8G] and the non\_3GPP\_ICSIs\_exempt node in the EF3GPPPSDATAOFFservicelist file described in 3GPP TS 31.102 [15C], then the non\_3GPP\_ICSIs\_exempt node in the EF3GPPPSDATAOFFservicelist file described in 3GPP TS 31.102 [15C] shall take precedence.

If the UE is configured with both the non\_3GPP\_ICSIs\_roaming\_exempt node of 3GPP TS 24.167 [8G] and the non\_3GPP\_ICSIs\_roaming\_exempt node in the EF3GPPPSDATAOFFservicelist file described in 3GPP TS 31.102 [15C], then the non\_3GPP\_ICSIs\_roaming\_exempt node in the EF3GPPPSDATAOFFservicelist file described in 3GPP TS 31.102 [15C] shall take precedence.

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