**3GPP TSG-CT WG1 Meeting #128-eC1-21xxxx**

**Electronic meeting, 25 February – 5 March 2021 (was C1-210722)**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
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|  | **24.502** | **CR** | **0182** | **rev** | **1** | **Current version:** | **16.6.0** |  |
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| *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:***  | Update of N3IWF selection procedure for access to SNPN services via a PLMN |
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| ***Source to WG:*** | Qualcomm Incorporated, Nokia, Nokia Shanghai Bell, Ericsson |
| ***Source to TSG:*** | C1 |
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| ***Work item code:*** | Vertical\_LAN |  | ***Date:*** | 2021-02-25 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***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 canbe 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)Rel-17 (Release 17)* |
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| ***Reason for change:*** | In LS S2-2009335, SA2 informed CT1 that based on input from SA3-LI, SA2 agreed CR 2521 to TS 23.501 (S2-2009334) by which:* If an SNPN-enabled UE is configured with an N3IWF FQDN for access to SNPN services via a PLMN, it is also configured with an identifier of the country where the configured N3IWF is located
* When selecting an N3IWF for access to SNPN services via a PLMN:
	+ If the UE is located in the same country as the configured N3IWF, the UE shall use the configured N3IWF FQDN
	+ If the UE is located in a country different from that of the configured N3IWF, the UE shall construct an FQDN consisting of the SNPN ID of the SNPN subscription and the Visited Country FQDN and indicating the query is for SNPN, as specified in TS 23.003 and perform a DNS query for the resulting FQDN
		- If the DNS response contains no records, then the UE determines that the visited country does not mandate the selection of an N3IWF in this country and uses the configured N3IWF FQDN
		- If no DNS response is received, the UE shall stop the N3IWF selection
		- If the DNS response contains one or more records, the UE shall select an N3IWF included in the DNS response based on its own implementation means

The stage 3 in TS 24.502 needs to be updated accordingly |
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| ***Summary of change:*** | The N3IWF selection procedure for access to SNPN services via a PLMN was updated as per the stage 2 agreement.Backward compatibility analysis:This CR is backward compatible:* UE implementing this CR in a network not implementing this CR
	+ If the UE is in the country of the N3IWF, the UE will use the configured N3IWF FQDN
	+ If the UE is in a country different from that of the configured N3IWF, the UE will perform a DNS query and will receive no DNS response, so the UE will stop N3IWF selection
* UE not implementing this CR in a network implementing this CR
	+ The UE will use the configured N3IWF FQDN
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| ***Consequences if not approved:*** | The UE might select an N3IWF which is in a country different from the country in which the UE is located even if the country of the UE’s location mandates selection of an N3IWF in the same country, thereby violating regulatory requirements. |
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| ***Clauses affected:*** | 7.2.5 |
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|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS 23.003 CR 0608 |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

\*\*\* First change \*\*\*

### 7.2.5 Selection of an N3AN node in an SNPN

In order to access SNPN services via a PLMN, an SNPN enabled UE is configured with an N3IWF FQDN for the SNPN and with an MCC of the country where the configured N3IWF is located. To select an N3IWF in an SNPN, the UE shall first determine the country in which the UE is located. If the UE cannot determine the country in which the UE is located, the UE shall stop the SNPN N3IWF selection. If the UE can determine the country in which the UE is located, the UE shall proceed as follows:

NOTE 1: It is up to UE implementation how the UE determines the country in which the UE is located.

a) if the UE is located in the country where the configured N3IWF is located, the UE shall use the configured N3IWF FQDN for the SNPN N3IWF selection; or

b) if the UE is located in a country different from the country where the configured N3IWF is located:

1) the UE shall construct a Visited Country FQDN for SNPN N3IWF selection as specified in 3GPP TS 23.003 [8]; and

2) the UE shall perform the DNS NAPTR query using the constructed Visited Country FQDN for SNPN N3IWF selection. If:

i) the result of this DNS query includes:

A) a set of one or more records, the UE shall select an N3IWF FQDN included in the DNS response based on UE implementation means and use the selected N3IWF FQDN for the SNPN N3IWF selection; or

NOTE 2: If the visited country mandates the selection of the N3IWF in this country and the SNPN does not have the N3IWF in this country, DNS resolution of the selected N3IWF FQDN provides no IP addresses, resulting into stop of the SNPN N3IWF selection.

NOTE 3: The identity (i.e. in the corresponding DNS record) of an SNPN's N3IWF in the visited country can be any FQDN and is not required to include the SNPN identity.

B) no records, the UE shall use the configured N3IWF FQDN for the SNPN N3IWF selection; or

ii) there is no response to the DNS query, the UE shall stop the SNPN N3IWF selection.

\*\*\* End of changes \*\*\*