**3GPP TSG- Meeting #**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **29.514** | **CR** | **0650** | **rev** | **-** | **Current version:** | **18.6.0** |  |
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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 |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Prefix delegation in DetNet | | | | | | | | | |
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| ***Source to WG:*** | Nokia | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | DetNet | | | | |  | ***Date:*** | | | 2024-08-12 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | As per cl 5.28.5.3 of TS 23.501:  *5GS DetNet Node can forward via its device side interface IP packets destined not only to the UE's IP address or prefix but also to a range of IPv4 addresses or IPv6 IP prefixes according to one or more Framed Routes or prefixes delegated to the UE by IPv6 prefix delegation. To facilitate this, the additional IP addresses used for framed routes and IPv6 prefix delegation are exposed by the SMF to the TSCTSF via the PCF and the TSCTSF may expose them to the DetNet controller, as defined in clause 5.28.5.2.*  As per 29.512 the NOTE in cl 5.6.2.19:  *NOTE 6: When the "WWC" feature is supported, according to 3GPP TS 23.316 [42], clause 8.3.1 and 4.6.2, more than one IPv6 prefix shorter than /64 or more than one full IPv6 addres with a /128 prefix may be allocated to the RG. When feature MultiIpv6AddrPrefix is supported, additional IPv6 prefix shorter than /64 or full IPv6 address with a /128 prefix may be reported encoded as the "addIpv6AddrPrefixes" and the "addRelIpv6AddrPrefixes" attributes, , if the "MultiIpv6AddrPrefix" feature is supported, or as the "multiIpv6Prefixes" and the "multiRelIpv6Prefixes" attributes, if the "UnlimitedMultiIpv6Prefix" feature is supported. If the attribute "multiIpv6Prefixes" is provided, then attributes "ipv6AddressPrefix" and "addIpv6AddrPrefixes" shall be both absent. If the attribute "multiRelIpv6Prefixes" is provided, then attributes "relIpv6AddressPrefix" and "addRelIpv6AddrPrefixes" shall be both absent.* | | | | | | | | |
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| ***Summary of change:*** | | 1. Clarified the existing NOTE with the IPv6 prefix delegation scenario in the procedure of the subscription to the report of extra UE addresses related to the Npcf\_PolicyAuthorization\_Create service operation. Also, the same NOTE is introduced to the Npcf\_PolicyAuthorization\_Subscribe service operation. 2. The wrong mentioning about PCF handling HTTP PUT/POST request message for the subscription is corrected, it should be NF service consumer. | | | | | | | | |
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| ***Consequences if not approved:*** | | 1. Non-compliant with stage-2 specifications.  2. If updates to clauses 4.2.2.36 and 4.2.6.12 are not accepted, this would lead to incomplete DetNet implementation for event report from the PCF for Reporting of extra UE addresses as IPv6 prefix delegation. | | | | | | | | |
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| ***Clauses affected:*** | | 4.2.2.36, 4.2.6.12 | | | | | | | | |
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|  | | **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 does not impact the open API defined in this specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

#### 4.2.2.36 Subscription to the report of extra UE addresses

When the feature "ExtraUEaddrReport" is supported, the subscription to the report of extra UE addresses is used to report information about the extra IP addresses or address ranges allocated to the PDU session due to framed routes or IPv6 prefix delegation. The report shall include the actual list of IPv4 addresses or list of IPv6 prefixes as currently allocated.

NOTE: In case of Deterministic Networking, the 5GS DetNet Node, as described in 3GPP TS 23.501 [2], can forward via its device side interface IP packets destined not only to the UE's IP address or prefix but also to a range of IPv4 addresses or IPv6 IP prefixes according to one or more Framed Routes or prefixes delegated to the UE by IPv6 prefix delegation.

The NF service consumer shall use the "evSubsc" attribute as described in clause 4.2.2.2 and shall include in the HTTP POST request message an event within the "events" array with the "event" attribute set to "EXTRA\_UE\_ADDR".

The PCF shall reply to the NF service consumer with an HTTP response message as described in clause 4.2.2.2.

If the PCF received from the SMF the framed routes as described in 3GPP TS 29.512 [8], clause 4.2.2.2, or the PCF receives updated information of the extra one or more IPv6 prefixes allocated to the UE as described in 3GPP TS 29.512 [8], clauses 4.2.4.2, 5.6.2.19, and C.3.4.1, the PCF shall include in the response the "evsNotif" attribute with an entry in the "evNotifs" array with the "event" attribute set to "EXTRA\_UE\_ADDR" and:

- the actual list of IPv4 addresses within the "ipv4AddrList" attribute, if one or more IPv4 framed routes are associated to the PDU session and are available in the PCF; or

- the actual list of IPv6 prefixes allocated to the UE within the "ipv6PrefixList" attribute, if one or more IPv6 framed routes are associated to the PDU session and are available in the PCF, or if the PCF keeps updated IPv6 prefix(es) information.

As result of this action, the PCF shall set the appropriate subscription to the report of UE IP addresses, if not previously subscribed, as described in in 3GPP TS 29.512 [8].

\* \* \* \* 2nd Change \* \* \* \*

#### 4.2.6.12 Subscription to the report of extra UE addresses

When the feature "ExtraUEaddrReport" is supported, the subscription to the report of extra UE addresses is used to report about the extra IP addresses or address ranges allocated to the PDU session due to framed routes or IPv6 prefix delegation. The report shall include the actual list of IPv4 addresses or list of IPv6 prefixes as currently allocated.

NOTE: In case of Deterministic Networking, the 5GS DetNet Node, as described in 3GPP TS 23.501 [2], can forward via its device side interface IP packets destined not only to the UE's IP address or prefix but also to a range of IPv4 addresses or IPv6 IP prefixes according to one or more Framed Routes or prefixes delegated to the UE by IPv6 prefix delegation.

The NF service consumer shall include in the HTTP PUT request message described in clause 4.2.6.2 the "EventsSubscReqData" data type, or in the HTTP POST request message described in clause 4.2.6.3 the "evSubsc" attribute, that shall contain the "events" array, with a new entry with the "event" attribute set to the value "EXTRA\_UE\_ADDR".

The NF service consumer shall include other events related information that shall remain unchanged, if applicable.

The PCF shall reply to the NF service consumer with the HTTP POST response as described in clause 4.2.6.3 and with the HTTP PUT response as described in clause 4.2.6.2.

If the PCF received from the SMF the framed routes as described in 3GPP TS 29.512 [8], clause 4.2.2.2, or the PCF received updated information of the one or more IPv6 prefixes allocated to the UE as described in 3GPP TS 29.512 [8], clauses 4.2.4.2, 5.6.2.19, and C.3.4.1, the PCF shall include in the response the "evsNotif" attribute with an entry in the "evNotifs" array with the "event" attribute set to "EXTRA\_UE\_ADDR" and:

- the actual list of IPv4 addresses within the "ipv4AddrList" attribute, if one or more IPv4 framed routes are associated to the PDU session and are available in the PCF; or

- the actual list of IPv6 prefixes allocated to the UE within the "ipv6PrefixList" attribute, if one or more IPv6 framed routes are associated to the PDU session and are available in the PCF, or if the PCF keeps updated IPv6 prefix(es) information.

As result of this action, the PCF shall set the appropriate subscription to the report of UE IP addresses, if not previously subscribed, as described in 3GPP TS 29.512 [8].

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