**3GPP TSG-CT3 Meeting #116e C3-213280**

**E-Meeting, 19th – 28th May 2021**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **29.521** | **CR** | **0108** | **rev** | **-** | **Current version:** | **16.7.0** |  |
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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:***  | Correction to ExtendedSamePcf feature |
|  |  |
| ***Source to WG:*** | Ericsson |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | en5GPccSer |  | ***Date:*** | 2021-5-10 |
|  |  |  |  |  |
| ***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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | The ExtendedSamePcf feature changed from required to optional the properties related to UE addresses, to cover the case when these UE addresses are not available at SM Policy Association created. This change is BC because the omission of the UE addresses can only be performed when the ExtendedSamePcf feature.However, it is not indicated that when the ExtendedSamePcf feature is not supported, the UE addresses shall be present.Without this correction, implementations may omit the UE addresses when the ExtendedSamePcf feature is not supported, and thus, fall in a NBC behaviour.  |
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| ***Summary of change:*** | Correct clause 4.2.2.2 to indicate that when the ExtendedSamePcf feature is not supported, the UE address shall be included, as previously specified. |
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| ***Consequences if not approved:*** | Implementation mistakes leading to NBC changes which cause interoperability problems |
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| ***Clauses affected:*** | 4.2.2.2 |
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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 OpenAPI file. |
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| ***This CR's revision history:*** |  |

**Additional discussion(if needed):**

**…**

**Proposed changes:**

\*\*\* 1st Change \*\*\*

#### 4.2.2.2 Register a new PCF Session binding information

Figure 4.2.2.2-1: NF service consumer register a new PCF Session binding information

The NF service consumer shall invoke the Nbsf\_Management\_Register service operation to register the session binding information for a UE in the BSF. The NF service consumer shall send for this an HTTP POST request with "{apiRoot}/nbsf-management/v1/pcfBindings" as Resource URI representing the "PCF Session Bindings", as shown in figure 4.2.2.2-1, step 1, to create a binding information for an "Individual PCF Session Binding" according to the information (e.g. UE address(es), SUPI, GPSI, DNN, S-NSSAI) in the message body. When the "ExtendedSamePcf" feature is not supported, the "PcfBinding" data structure provided in the request body shall include:

a. if the "MultiUeAddr" feature is not supported or not yet known, address information of the served UE consisting of:

(i) either IP address information consisting of:

+ the IPv4 address encoded as "ipv4Addr" attribute; and/or

+ the /128 IPv6 address, the IPv6 address prefix or an IPv6 prefix shorter than /64 encoded as "ipv6Prefix" attribute; or

(ii) the MAC address encoded as "macAddr48" attribute;

b. Otherwise, address information of the served UE consisting of:

(i) any IP address information consisting of:

+ the IPv4 address encoded as "ipv4Addr" attribute;

+ the /128 IPv6 address, the IPv6 address prefix or an IPv6 prefix shorter than /64 encoded as "ipv6Prefix" attribute; and/or

+ the additional /128 IPv6 addresses, the IPv6 address prefixes or IPv6 prefixes shorter than /64 encoded as "addIpv6Prefixes" attribute; or

(ii) the MAC address encoded as "macAddr48" attribute and/or the additional MAC addresses encoded as "addMacAddrs" attribute.

c. PCF address information consisting of:

 (i) if the PCF supports the Npcf\_PolicyAuthorization service:

+ the FQDN of the PCF encoded as "pcfFqdn" attribute; and/or

+ a description of IP endpoints at the PCF hosting the Npcf\_PolicyAuthorization service encoded as "pcfIpEndPoints" attribute; and

(ii) if the PCF supports the Rx interface:

+ the Diameter host id of the PCF encoded as "pcfDiamHost"; and

+ the Diameter realm of the PCF encoded as"pcfDiamRealm" attributes.

- DNN encoded as "dnn" attribute;

- S-NSSAI encoded as "snssai" attribute; and

- if the "SamePcf" feature defined in subclause 5.8 is supported and the PCF determines based on operator policies that the same PCF shall be selected for the SM Policy associations:

(i) PCF address information for Npcf\_SMPolicyControl service consisting of:

+ the FQDN of the PCF encoded as "pcfSmFqdn" attribute; or

+ a description of IP endpoints at the PCF hosting the Npcf\_SMPolicyControl service encoded as "pcfSmIpEndPoints" attribute; and

(ii) the parameters combination for selecting the same PCF encoded within the "paraCom" attribute if the PCF registers the binding information for the indicated parameter combination for the first time.

NOTE: When the "SamePcf" feature is supported, the PCF omits the "paraCom" attribute when creates the corresponding binding information related to the subsequent PDU sessions for the same parameter combination.

and may include:

- SUPI encoded as "supi" attribute;

- GPSI encoded as "gpsi" attribute;

- IPv4 address domain encoded as "ipDomain" attribute; and

- framed routes consisting of:

(i) one or more framed routes within the "ipv4FrameRouteList" attribute for IPv4; and/or

(ii) one or more framed routes within the "ipv6FrameRouteList" attribute for IPv6.

When the "ExtendedSamePcf" feature is supported the address information of the served UE may be provided if available, i.e., the "ipv4Addr", the "ipv6Prefix" and/or "addIpv6Prefixes" attributes or the "macAddr48" and/or "addMacAddrs" attributes may be provided if available.

When the "ExtendedSamePcf" feature is supported the PCF address for the Npcf\_PolicyAuthorization and/or Rx interface may be provided if available, i.e., the "pcfFqdn" and/or the "pcfIpEndPoints" attributes, and/or the "pcfDiamHost" and/or the "pcfDiamRealm" attributes may be provided if available

When the "TimeSensitiveNetworking" feature is supported by the PCF as defined in subclause 5.8 of 3GPP TS 29.512 [21], the address information of the served UE contains the MAC address of the DS-TT encoded in the "macAddr48" attribute as received by the PCF when reporting the bridge information attribute.

Upon the reception of an HTTP POST request with: "{apiRoot}/nbsf-management/v1/pcfBindings" as Resource URI and "PcfBinding" data structure as request body, the BSF shall:

- create new binding information;

- assign a bindingId; and

- store the binding information.

The PCF as NF service consumer may provide PCF Id in "pcfId" attribute and recovery timestamp in "recoveryTime" attribute. The BSF may use the "pcfId" attribute to supervise the status of the PCF as described in subclause 5.2 of 3GPP TS 29.510 [12] and perform necessary clean up upon status change of the PCF later, and/or both the "pcfId" attribute and the "recoveryTime" attribute in clean up procedure as described in subclause 6.4 of 3GPP TS 23.527 [17].

The PCF as a NF service consumer may provide PCF Set Id within the "pcfSetId" attribute and "bindLevel" attribute set to NF\_SET or provide PCF Set Id within the "pcfSetId" attribute, PCF instance Id within the "pcfId" attribute and "bindLevel" attribute set to NF\_INSTANCE.

If the BSF created an "Individual PCF Session Binding" resource, the BSF shall respond with "201 Created" status code with the message body containing a representation of the created binding information, as shown in figure 4.2.2.2-1, step 2. The BSF shall include a Location HTTP header field containing the URI of the created binding information, i.e. "{apiRoot}/nbsf-management/v1/pcfBindings/{bindingId}".

If errors occur when processing the HTTP POST request, the PCF shall apply error handling procedures as specified in subclause 5.7.

If the "SamePcf" feature defined in subclause 5.8 is supported and the "paraCom" attribute is included in the HTTP POST message, the BSF shall check the received "paraCom" attribute. If the BSF detects that there is an existing PCF binding information including the same "dnn", "snssai" and "supi" attribute values as each of the corresponding attribute values within the "paraCom" attribute, the BSF shall reject the request with an HTTP "403 Forbidden" status code and shall include in the response the "ExtProblemDetails" data structure including the FQDN of the existing PCF hosting the Npcf\_SMPolicyControl service within the "pcfSmFqdn" attribute or the description of IP endpoints at the existing PCF hosting the Npcf\_SMPolicyControl service within the "pcfSmIpEndPoints" attribute of "BindingResp" data structure, and the "cause" attribute of the "ProblemDetails" data structure set to "EXISTING\_BINDING\_INFO\_FOUND".

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