**3GPP TSG-SA2 Meeting #137-E**  ***S2-2002291***

**Online, 24th Feb 2020 - 27th Feb 2020 revision from S2-2001317**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.502** | **CR** | **1986** | **rev** | **3** | **Current version:** | **16.3.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **x** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Correction of PCF discovery via BSF to consider eSBA producer binding indication principles – BSF Services (23.502) | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Oracle Corporation | | | | | | | | | |
| ***Source to TSG:*** | SA2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5G\_eSBA | | | | |  | ***Date:*** | | | 2020-02-18 |
|  |  | | | |  | |  | | |  |
| ***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 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:*** | | According to the “principles for binding, selection and reselection” in clause 6.3.1.0 of TS 23.501, the NF service producer may provide a binding indication to the NF service consumer. Thus, the PCF as an NF service producer can provide a binding indication to the SMF/SCP for the Npcf\_SmPolicyControl service. If the PCF provides a binding indication to the SMF/SCP, the SMF/SCP may re-select for a subsequent related service request another PCF instance based on the binding indication for the ongoing SM policy association/PDU session, e.g. when the original PCF instance becomes unavailable. A binding indication provides more information for selection and re-selection than PCF Set ID alone.  The purpose of the BSF is to enable AF or NEF to discover and select the PCF instance serving an ongoing PDU session (for the so-called session binding). To enable this discovery and selection, the PCF instance serving a PDU session registers itself at PDU session establishment at the BSF. However, in addition to that, clause 6.3.1.0 of TS 23.501 says “The NF service producer may provide a binding indication to the NF service consumer as part of the Direct or Indirect Communication procedures, to be used in subsequent related service requests.”  According that, the PCF may register binding information at the BSF. Doing that will enable the PCF to indirectly provide its binding indication to the AF or NEF so that it’s consistent with the information provided to the SMF over N7. A binding indication provides more capability than a simple NF Set ID. As described in clause 6.3.1.0 of TS 23.501, the binding indication may provide multiple levels of binding to indicate both a primary binding as well as an alternate binding if re-selection is required.  This change updates the input and output information of the BSF to allow the AF, NEF, and other consumers of the BSF service to select a PCF to serve an existing PDU session consistent with the SMF selection of a PCF to serve an existing PDU session. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | The PCF registers binding information required to create a binding indication (per clause 6.3.1.0 of TS 23.501) at the BSF. The BSF then provides this information as part of the discovery procedure to AF or NEF or SCP. Information which is no longer required is removed. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Consumers of the BSF service will not be able to support discovery and selection of the PCF in the same manner as the SMF. If an AF or NEF uses the BSF after the PCF instance within a set has changed, it will obtain an outdated PCF instance that may no longer be available. In addition, there will also be an inconsistency between the information provided by the PCF to the SMF with regarding to binding and what is provided to the BSF for consumption by the AF/NEF. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.2.13.2.2, 5.2.13.2.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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's revision history:*** | | Revision 1:   * In clause 5.2.13.2.2, did not remove PCF Set ID as an optional input and did not add binding indication as an optional input. * In clause 5.2.13.2.2, added note that it is for Stage 2 to decide if binding indication or another format is best used to convey the PCF ID and PCF Set ID optional input information such that it can satisfy the specified usage. * In clause 5.2.13.2.4, moved PCF ID and PCF Set ID from optional outputs to required outputs (if available). * In clause 5.2.13.2.4, added note that it is for Stage 2 to decide if binding indication or another format is best used to convey the PCF ID and PCF Set ID output information such that it can satisfy the specified usage.   Revision 2:   * In clause 5.2.13.2.4, add “conditional, “ before the “[available]” in the required outputs section.   Revision 3:  Aligning clauses 5.2.13.2.2 and 5.2.13.2.4 to match the wording in the corresponding 23.503 CR (S2-2002064) as well as match the wording in 23.501 6.3.1.0. | | | | | | | | |

1st change

##### 5.2.13.2.2 Nbsf\_Management\_Register service operation

**Service Operation name:** Nbsf\_Management\_Register.

**Description:** Registers the tuple (UE address(es), SUPI, GPSI, DNN, DN information (e.g. S-NSSAI), PCF address(es), PCF instance id, PCF Set ID) for a PDU Session.

**Inputs, Required:** UE address(es), PCF address(es)

UE address can contain IP address/prefix or MAC address as defined in TS 23.501 [2]. It can optionaly refer to Frame Routes. W-5GAN specific UE IP address information is specified in TS 23.316 [53].

Frame Routes are defined in Table 5.2.3.3.1-1.

**Inputs, Optional:** DNN, SUPI, GPSI, DN information (e.g. S-NSSAI), PCF instance ID and PCF Set ID, which may be used as Binding indication (see clause 6.3.1.0 of TS 23.501 [2]).

NOTE: It is left to Stage 3 to determine if the binding indication or another format is best used to convey the PCF Set ID and PCFinstance ID such that it supports usage as defined in TS 23.503 [20] clause 6.1.1.2.2 and TS 23.501 [2] clause 6.3.1.0.

**Outputs, Required:** Result indication, Binding Identifier for a PDU Session.

**Outputs, Optional:** None.

2nd change

##### 5.2.13.2.4 Nbsf\_Management\_Discovery service operation

**Service Operation name:** Nbsf\_Management discovery

**Description:** Discovers the PCF and PCF set selected for the tuple (UE address(es), SUPI, GPSI, DNN, DN information (e.g. S-NSSAI)).

**Inputs, Required:** UE address (i.e. IP address or MAC address), DNN [Conditional], DN information (e.g. S-NSSAI) [Conditional]

**Inputs, Optional:** SUPI, GPSI

**Outputs, Required:** PCF address(es), PCF instance ID [Conditional, if available] and PCF Set ID [Conditional, if available], which may be used as Binding indication (see clause 6.3.1.0 of TS 23.501 [2]).

NOTE: It is left to Stage 3 to determine if the binding indication or another format is best used to convey the PCF Set ID and PCF instance ID such that it supports usage as defined in TS 23.503 [20] clause 6.1.1.2.2 and TS 23.501 [2] clause 6.3.1.0.

**Outputs, Optional:** None.

End of changes