**3GPP TSG- Meeting #**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
|  | | | | | | | | |
| *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:*** |  | | | | | | | | | |
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| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | CT4 | | | | | | | | | |
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| ***Work item code:*** |  | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *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:*** | | NF Services within Service Set and NF instances within NF Set may want to explicitly indicate which other NF services or NF instances have equivalent functionality should the consumer wish to or have to use an alternative binding.  The member service of the NF instance or service in a NF set or NF Service Set explicitly indicates to the receiving NF/NF-Service that there is another NF/NF-service that can provide the same service. This way the receiving NF NF-Service can immediately revert to the another binding should there be any failure of primary NF. | | | | | | | | |
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| ***Summary of change:*** | | Add an indication of a service membership to an SBI binding. | | | | | | | | |
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| ***Consequences if not approved:*** | | Selection of an alternative NF service or NF instance is not optimized. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.2.3.2.6 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **N** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **N** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **N** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | Enhanced the scope of 3gpp-Sbi-Binding | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

##### 5.2.3.2.6 3gpp-Sbi-Binding

This header contains a comma-delimited list of Binding Indications from an HTTP server for storage and subsequent use by an HTTP client (see clause 6.12).

The encoding of the header follows the ABNF as defined in IETF RFC 7230 [12].

3gpp-Sbi-Binding = "3gpp-Sbi-Binding" ":" #(OWS "bl=" blvalue 1\*( OWS ";" parameter) OWS ";" recoverytime)

blvalue = "nf-instance" / "nf-set" / "nfservice-instance" / "nfservice-set"

parameter = parametername "=" token

parametername = "nfinst" / "nfset" / "nfservinst" / "nfserviceset" / "servname" / "scope"

scope = "other-service" / "callback" / "subscription-events"/ "member-service"

recoverytime = "recoverytime=" OWS date-time

The following parameters are defined:

- scope: indicates the applicability of a Binding Indication in a service request. This may take one of the following values:

- "other-service": the binding information applies to other service(s) that the NF Service Consumer may later on provide as an NF Service Producer (see clause 6.12.3);

- "subscription-events": the binding information applies to subscription change event notifications (see clause 6.12.4);

- "member-service": the binding information belonging to other members within the same NF service set or NF set (see clause 6.12.x);

- "callback": the binding information applies to notification or callback requests (see clauses 6.12.4 and 6.12.5).

The absence of this parameter in a Binding Indication in a service request shall be interpreted as "callback".  
  
Two scope parameters may be present in a Binding Indication if the binding information applies to notification/callback requests and to other services.

- servname (service name): indicates the name of a service, as defined in 3GPP TS 29.510 [8], or a custom service, i.e.:

- the name of the service that handles a notification or a callback request, when present in a Binding Indication for a subscription or a callback, i.e. with a scope parameter absent or set to "callback"; or

- the name of the other service(s) for which the binding applies, when present in a Binding Indication in a service request for the other services the NF Service Consumer can provide later on as an NF Service Producer, i.e. with the scope parameter set to "other-service". More than one servname parameter may be present to represent multiple such services. The absence of this parameter in a Binding Indication with the scope parameter set to "other-service" shall be interpreted as binding information that applies to all the services that the NF Service Consumer may provide later as an NF Service Producer.

- recoverytime: indicates the recovery timestamp of the entity corresponding to the highest resiliency level supported for the resource, that is, the higher level binding entity indicated in the Binding Indication. See Table 6.3.1.0-1 of 3GPP TS 23.501 [3] and clause 6.1 of 3GPP TS 23.527 [38]. The date-time type is specified in IETF RFC 5322 [37] and clause 7.1.1.1 of IETF RFC 7231 [11].

- for the definition and encoding of the blvalue, nfinst, nfset, nfservinst and nfserviceset see clause 5.2.3.2.5.

EXAMPLES 1 to 5: Same as EXAMPLES 1 to 5 defined in clause 5.2.3.2.5, with the header name "3gpp-Sbi-Binding" instead of "3gpp-Sbi-Routing-Binding".

EXAMPLE 6: Subscription request from one NF on behalf of another NF, with 2 binding indications:  
  
3gpp-Sbi-Binding: bl= nf-set; nfset=set1.udmset.5gc.mnc012.mcc345; servname=nudm-ee;scope=subscription-events  
3gpp-Sbi-Binding: bl= nf-set; nfset=set1.nefset.5gc.mnc012.mcc345; servname=nnef-event-exposure

EXAMPLE 7: Service request with 2 binding indications, for callback requests and for other services the NF Service Consumer may provide later as an NF Service Producer:  
  
3gpp-Sbi-Binding: bl=nf-instance; nfinst=54804518-4191-46b3-955c-ac631f953ed8; nfset=set1.smfset.5gc.mnc012.mcc345; servname=nsmf-pdusession  
3gpp-Sbi-Binding: bl=nf-instance; nfinst=54804518-4191-46b3-955c-ac631f953ed8; nfset=set1.smfset.5gc.mnc012.mcc345; scope=other-service; servname=nsmf-event-exposure

EXAMPLE 8: Service request with one binding indication applying to notification/callback requests and to any other services the NF Service Consumer may provide later as an NF Service Producer:  
  
3gpp-Sbi-Binding: bl=nf-set; nfset=set1.region48.amfset.5gc.mnc012.mcc345; scope=callback; scope=other-service EXAMPLE 9: Service request with one binding indication applying to notification/callback requests together with a recovery time stamp associated with the NF Set indicated in the binding indication and with the binding level set to "nfset":  
  
3gpp-Sbi-Binding: bl=nfset; nfset=set1.region48.amfset.5gc.mnc012.mcc345; scope=callback; recoverytime= Tue, 04 Feb 2020 08:49:37 GMT

EXAMPLE 9: Service response with one binding indication applying to the session context with a recovery time stamp associated with the NF Set indicated in "nfset" in the binding indication and with the binding level set to "nfinstance":  
  
3gpp-Sbi-Binding: bl= nfinstance; nfinst=54804518-4191-46b3-955c-ac631f953ed8; nfset=set1.smfset.5gc.mnc012.mcc345; recoverytime= Tue, 04 Feb 2020 08:49:37 GMT

EXAMPLE 10: Service response with one binding indication applying to the session context with a recovery time stamp associated with the NF Instance included the binding indication and with the binding level set to nfserviceinstance:   
  
3gpp-Sbi-Binding: bl=nfserviceinstance; nfservinst=xyz; nfinst=54804518-4191-46b3-955c-ac631f953ed8; recoverytime= Tue, 04 Feb 2020 08:49:37 GMT

EXAMPLE 11: Service response with one binding indication belonging to the member service within the same NF set:   
  
3gpp-Sbi-Binding: bl=nfset; nfinst=54804518-4191-46b3-955c-ac631f953ed8; nfset=set1.smfset.5gc.mnc012.mcc345

3gpp-Sbi-Binding: bl=nfset; nfinst=55804618-4191-46b3-955c-ac631f953ed8; nfset=set1.smfset.5gc.mnc012.mcc345;scope=member-service

NOTE: Examples 6 and 7 are formatted as two distinct headers (which improves the readability), but they can also be formatted as a single header with two Binding Indication values separated by a comma.

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

### 6.12.x Group binding for members within the same service set or NF set

Members (see NOTE) of a Consumer or Producer NF Service set or NF Set can create a group binding in the service request or response by setting binding indication scope to “member-service” (see clause 5.2.3.2.6). Example 11 in clause 5.2.3.2.6 shows how an NF instance is not only creating binding for itself but also for other members belonging to the same NF Set.

An NF Service Consumer may provide a Binding Indication in a service request creating a binding for its members, by including a 3gpp-Sbi-Binding header (see clause 5.2.3.2.6) in an HTTP request, as specified in clause 6.12.4, with the scope parameter set to "member-service". The NF Service Producer shall store the Binding Indication received from the NF Service Consumer and include it in a 3gpp-Sbi-Routing-Binding header in subsequent service requests it sends, where the NF Service Consumer acts as an NF Service Producer

The NF Service Producer may also provide a Binding Indication in a service response creating a binding for its members, by including a 3gpp-Sbi-Binding header (see clause 5.2.3.2.5) in the HTTP response as specified in clause 6.12.2. The NF Service Consumer shall store the Binding Indication received from the NF Service Producer and include it in a 3gpp-Sbi-Routing-Binding header in subsequent related service requests as specified in clause 6.12.2.

NOTE: NF services or NF instances belonging to same NF Service Set or NF Set are referred as Members.

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