**3GPP TSG-SA WG6 Meeting #43 S6-21xxxx**

**e-meeting, 24th May – 2nd June 2021 (revision of S6-21xxxx)**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.434** | **CR** | **<CR#>** | **rev** | **-** | **Current version:** | **17.1.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network |  |

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|  | | | | | | | | | | |
| ***Title:*** | Enhancement to NRM for supporting SIP functions | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, Hisilicon, Tencent? | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | UASAPP, eSEAL | | | | |  | ***Date:*** | | | 2021-05-11 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The study in TR 23.755 agreed for a solution to provide SIP session handling support for UAS applications. It is hence proposed that NRM service can handle the SIP session establishment and the associated resource requests with the 3GPP system. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Introduced the procedure to handle SIP session establishment with resource requests. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The SIP session handling support will not be enabled for UAS applications | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 14.2.4.2, 14.2.4.3, 14.3.2.x (new), 14.3.2.y (new), 14.3.3.2.1a, 14.3.3.2.1a.1, 14.3.3.2.1a.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

#### 14.2.4.2 Network resource management client

The network resource management client functional entity acts as the application client for the management of network resources. The NRM client functional entity acts as the signalling user agent for all SIP based application transactions. The network resource management client interacts with the network resource management server.

#### 14.2.4.3 Network resource management server

The network resource management server functional entity provides for management of 3GPP system network resources (e.g. unicast, multicast) to support the VAL applications. The network resource management server acts as CAPIF's API exposing function as specified in 3GPP TS 23.222 [8]. The network resource management server also supports interactions with the corresponding network resource management server in distributed SEAL deployments. The NRM server's role may be assumed by the VAL server in some deployments, in which case, the VAL server performs the procedures for network resource management of the NRM server.

The NRM server functional entity is supported by the SIP AS, HTTP client and HTTP server functional entities of the signalling control plane specified in clause 6.2.

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

#### 14.3.2.x Session establishment

Table 14.3.2.x-1 describes the information flow Session establishment from the NRM client to the NRM server.

Table 14.3.2.x-1: Session establishment

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| VAL user/UE ID | M | This element identifies the VAL user/UE that wishes to create a SIP session. |
| SDP offer | M | SDP with media information offered by UE application (e.g. ports, codec, protocol id). |

#### 14.3.2.y Session progress

Table 14.3.2.y-1 describes the information flow session progress from the NRM server to the NRM client.

Table 14.3.2.y-1: Session progress

|  |  |  |
| --- | --- | --- |
| **Information element** | **Status** | **Description** |
| SDP Answer | M | SDP with media information offered by NRM server (e.g. ports, codec, protocol id) |
| Session ID | M | This element identifies the specific session ID used for SIP session. |

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

##### 14.3.3.2.1a Request for unicast resources at session establishment from NRM server

###### 14.3.3.2.1a.1 General

The procedure defined in this clause specifies how network resources are requested at session establishment from the NRM server. The request for resources is sent to the PCRF via the Rx reference point or sent to the PCF via the N5 reference point from the NRM server and includes media type, bandwidth, priority, application identifier and resource sharing information. If concurrent sessions are used, the NRM server may utilize the capability of resource sharing specified in 3GPP TS 23.203 [18] and 3GPP TS 23.503 [19].

For the request of network resources by the NRM server via the Rx reference point or N5 reference point, the NRM client provides to the NRM server the final access resource details (e.g. IP addresses and ports) of the NRM client and the media anchoring points.

This procedure is generic to any type of session establishment with the NRM server requesting network resources.

###### 14.3.3.2.1a.2 Procedure

Figure 14.3.3.2.1a.2-1 describes the procedure for the request of resources at session establishment from the NRM server.

Pre-condition:

- The VAL client of the UE has triggered the NRM client to initiate session establishment.



Figure 14.3.3.2.1a.2-1: Resource request at session establishment from the NRM server

1. The NRM client sends a session establishment request. The request includes, apart from the SDP offer, access resource details, e.g. IP addresses and ports of the UE related to the media session.

2. The NRM server evaluates the need of network resources and use of media resource sharing.

3. The NRM server sends a session progress request to the SIP core.

NOTE: The session progress request does not include a request for network resources to be performed by the SIP core.

4. The SIP core local inbound / outbound proxy forwards the session progress request to the NRM client.

5. The NRM client acknowledges the session establishment to the NRM server. This message contains the final negotiated media access parameters, e.g. IP addresses and ports related to the media anchoring points received in the SDP answer from the SIP core.

6. The NRM server sends a request for resources to the PCRF over Rx (as specified in 3GPP TS 23.203 [18]) or the NRM server sends a request for resources to the PCF over N5 (as specified in 3GPP TS 23.503 [19].

7. The SIP session is established, and resources have been allocated.