**3GPP TSG-SA WG6 Meeting #49-e S6-221002r2**

**e-meeting, 16th – 24th May 2022 (revision of S6-22xxxx)**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.280** | **CR** |  | **rev** | **-** | **Current version:** | **18.1.0** |  |
|  | | | | | | | | |
| *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 | **X** |

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| ***Title:*** | Sharing location information across MC systems (functional model) | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | BDBOS, Nokia, Nokia Shanghai Bell, UIC | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | IRail | | | | |  | ***Date:*** | | | 2022-05-16 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The current functional model does not support the sharing of location information across MC systems, while interconnected MC systems are an essential aspect of the mission critical system design.  The enhancements of the function model have been studied with 3GPP TR 23744 and was confirmed as well as extended for Functional Alias with 3GPP TR 23700-90. | | | | | | | | |
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| ***Summary of change:*** | | Added Location management server as entity to the Other MC system function block. Moved CSC-19 and CSC-20 lines and texts. Added lines from MC gateway server to Location management server as well as from one Location management server to the other Location management server. Added texts for CSC-22 and CSC-23.  Added Location management as supported functionality.  Added two new clauses to capture the added reference points. | | | | | | | | |
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| ***Consequences if not approved:*** | | Interconnected systems lack of support to handle location information. | | | | | | | | |
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| ***Clauses affected:*** | | 7.3.1, 7.5.2.22, 7.5.2.23 (NEW), 7.5.2.24 (NEW) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | 3GPP TS 23.280 CR0323, CR0324, CR0325 and CR0326 are affected | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

## 7.3 Functional model description

### 7.3.1 On-network functional model

Each MC service can be represented by an application plane functional model. The functional model across MC services may be similar but is described by the individual functional entities and reference points that belong to that MC service. Within the application plane for an MC service there is a common set of functions and reference points. The common set is shared across services. This common set of functions and reference points is known as the common services core.

Figure 7.3.1-1 shows the functional model for the application plane for an MC system.



Figure 7.3.1-1: Functional model for application plane for an MC system

The common services core functions and reference points shown in figure 7.3.1-1 are shared across each MC service. The description of the functions and reference points specific to an MC service is contained in the corresponding MC service TS.

In the model shown in figure 7.3.1-1, the following apply:

- A specific MC service server is an instantiation of a GCS AS in accordance with 3GPP TS 23.468 [18].

- The functional alias management client is an integrated functional entity of the configuration management client. The functional alias management client is described in subclause 7.4.2.2.12.

- The functional alias management server is an integrated functional entity of the configuration management server. The functional alias management server is described in subclause 7.4.2.2.13.

Figure 7.3.1-2 shows the functional model for the signalling control plane.



Figure 7.3.1-2: Functional model for signalling control plane

Figure 7.3.1-3 shows the relationships between the reference points of the application plane of an MC service server and the signalling plane.



Figure 7.3.1-3: Relationships between reference points of MC service application plane and signalling control planes

NOTE 1: Application plane reference point CSC-7 makes use of SIP-2 reference point when the group management servers are connected by a single SIP core. Where they are joined by more than one SIP core, CSC-7 also makes use of the SIP-3 reference point.

NOTE 2: For simplicity, the HTTP proxy, which provides the interconnection between HTTP-1, HTTP-2 and HTTP-3 reference points, is not shown in figure 7.3.1-3.

NOTE 3: CSC-5, CSC-9, and CSC-15 make use of SIP-1 and SIP-2 reference points. For simplicity, this mapping relationship is not shown in figure 7.3.1-3.

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

#### 7.5.2.22 Reference point CSC-21 (between MC gateway servers in different MC systems)

The CSC-21 reference point, which exists between MC gateway servers in different MC systems in different security domains, is used to share subscription and notification related signalling for group configuration, user configuration management and location management to permit interconnection and migration between MC systems.

The CSC-21 reference point uses the SIP-3 reference point for transport and routing of subscription/notification related signalling.

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

#### 7.5.2.23 Reference point CSC-22 (between location management servers in different MC systems)

The CSC-22 reference point, which exists between location management servers in different MC systems, is used to share location information and non-subscription/notification related signalling for location management for interconnected MC systems.

The CSC-22 reference point uses the HTTP-1, HTTP-2 and HTTP-3 reference points for transport and routing of non-subscription/notification related signalling.

Editor’s note: How the SIP-2 and SIP-3 reference points are used for signalling messages is FFS.

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

#### 7.5.2.24 Reference point CSC-23 (between location management server and MC gateway server)

The CSC-23 reference point, which exists between location management server and MC gateway server, is used to handle location management related signalling.

The CSC-23 reference point uses SIP-2 and SIP-3 reference points for transport and routing of subscription/notification related signalling.

Editor’s note: Whether SIP-2 and SIP-3 reference points are used for non-subscription/notification signalling messages is FFS.

\* \* \* End of Change \* \* \* \*