**aaa3GPPSA4 #119-e S4-220650**

**E-meeting, 11-20 may 2022**

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| *CR-Form-v12.0* | | | | | | | | |
| **PSEUDO CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **26**.**857** | **CR** | pseudo | **rev** | **-** | **Current version:** | **0.1.0** |  |
|  | | | | | | | | |
| *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:*** | **[FS\_5G\_MSE] A framework for MSE specifications and implementations** | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Tencent | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | FS\_5G\_MSE | | | | |  | ***Date:*** | | | 8/03/2022 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | 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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
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| ***Reason for change:*** | | This document proposes a general framework and the notions of the MSE Description Document and MSE Configuration APIs. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * The relationship between MSE spec, and MSE implementation * 3 different flavors of implementations: MSE SDK abstract, MSE SDK, and MSE service * MSE Description Document * MSE Configuration APIs | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

CHANGE

## 4.2 Framework

### 4.2.1 General

Figure 4.2.1-1 shows the media service enablers framework.

MSE

Specification

MSE

SDK

(Platform dependent)

Media Interfaces

Control Interfaces

Configuration API

MSE

SDK

Abstraction

Media Interfaces

Control Interfaces

Configuration API Abstraction

MSE

service

Media Interfaces

Control Interfaces

Configuration API

*Specification*

*Implementation*

MDD specification

Media specification

MCA specification

Service

API

*Platform-independent*

*Platform-dependent*

Figure 4.2.1-1. Media Service Enablers Framework

As shown in Figure 4.1-1, the MSE framework consists of two parts: MSE specification and MSE implementation:

1. An MSE specification that defines:
   1. Media aspects
      1. Functional description of the MSE including the mandatory and optional features
      2. The control interfaces such as provisioning, authentication that is used by the application, and other functions to interact with this MSE.
      3. The media interfaces that includes all inputs and outputs format and protocols.
      4. Network interface including system and radio network
      5. Event, notifications, reporting, and monitoring
      6. Error handling
   2. MSE Configuration
      1. An MSE description document (MDD) that describes:

1. Functions supported by an MSE implementation and their configuration parameters

2. Optionally the performance/cost metrics for the different features/options

* + 1. An MSE Configuration API (MCA) abstraction for
       1. Retrieving the description document

2. Configuring the MSE instantiation

3. Retrieving the state and status of the MSE instantiation

* + 1. A service API for 1.b.ii

1. An MSE implementation may consist of 3 flavours:
   1. The MSE SDK abstraction, an abstract SDK definition intended to be realized as software development kit, which includes the followings:

i. Media aspects conforming to 1a.

ii. 1.b.i and 1.b.ii

* 1. The MSE SDK instantiation which is an SDK implementation in a specific environment and conforms to the followings:

i. Media aspects conforming to 1a.

ii. 1.b.i and specific implementation of 1.b.ii

* 1. The MSE service, which is the MSE implementation as a service, i.e with APIs that are platform-independent (such as web-based APIs) and conforms to the followings:

i. Media aspects conforming to 1a.

ii. 1.b.i and 1.b.iii.

Note that 1.a is usually covered with the existing 3GPP SA4 specifications. However, 1.b is what an MSE specification provides that is absent today from the 3GPP SA4 specifications. The value of 1.b is that for any SDK or service that is conforming to the MSE specification, a description of the features and their configuration parameters can be retrieved by an external function or service. Additionally, the external function or service can set a specific configuration for running that SDK. Furthermore, the state and status of the running SDK can be retrieved at any time.

As shown in Fgure 4.1-1, while the MSE SDK abstraction nd MSE service are platform independent, the MSE SDK is an instantiaton of the MSE SDK abstraction for a specific platform/environment. Also note that a MSE specification does not required to inlude all 3 flavors. For instance, if an MSE is only intended to be realized as software development kit, then its specification would include specificatons for the SDK abstraction and one or more SDK instantiation.

### 4.2.2 Example

As shown in Figure 4.2.1-1, the MSE specification can be deployed in two different ways: an SDK for running on devices and as a microservice running on the application servers. To demonstrate converting an existing 3GPP specification to an MSE spec, we use the 5GMS Media Session Handler defined in TS 26.501, shown in Figure 4.2.2-1.



Figure 4.2.2-1. Media Session Handler as defined in 26.501



Figure 4.2.2-2. Media Session Handler as MSE SDK abstract, MSE SDK instantiations, and MSE service

An example, the MSE specification for the Media Session Handler (MSH) shown in Figure 4.2.2-2 should describe the following items:

* 1. Media aspects:
     1. Functional description of
        1. Service Access information

1. Consumption Reporting
2. Metrics Reporting
3. Dynamic policies
4. Network assistant

ii. M5d, M6d, M7d.

1. M5d as is already defined

2. M6d and M7d as abstract APIs

3. M6d and M7d as service API

b. MSE Configuration

i. An MDD which describes:

1. An identifier that shows this MSE conforms to a.

2. Optional features of a.i and a.ii with their configuration parameters

3. Optionally the performance/cost metrics for the different features/options

ii. An API abstract for

1. Retrieving the description document b.i

2. Configuring the MSE instantiation

3. Retrieving the state and status of the MSE instantiation

iii. A service API for b.ii

And MSE SDK implementation of the above spec for android should support the followings:

i. Media aspects conforming to a. including specific implementation of M6d and M7d

ii. The MDD of b.i and specific implementation of b.ii

The MDD describes the features implemented by the MSE. The b.ii APIs allow an external Android process to retrieve this document and configure the SDK with a set of configurable parameters that are described in the MDD and the state and status of the running SDK.