**SA WG4 Meeting #109E (e-meeting) *S4-200812***

**E-meeting, 20th May – 3rd June 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **26.501** | **CR** |  | **rev** |  | **Current version:** | **16.3.1** |  |
|  | | | | | | | | |
| *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:*** | Correction on Metrics collection and reporting | | | | | | | | | |
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| ***Source to WG:*** | Tencent | | | | | | | | | |
| ***Source to TSG:*** | S4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GMSA | | | | |  | ***Date:*** | | | 2020-5-15 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | 1. In the out-of-band-controlled reporting procedure, step 3 identifies that the RAN activate the metrics reporting when the UE enters an area (cell, location area, etc.,) which is inside the geographical constraint. The geographical constraint is not clearly defined in the metrics collection configuration parameters. It is proposed to add reporting area as an additional metrics collection configuration parameter for out-of-band-controlled reporting. It is sent to RAN to indicate RAN to activate the metrics reporting for UEs entering into the area.   For in-band-controlled reporting, the Reporting Area could also be sent to the UE in order to collect the metrics only when the UE is within certain geographical area.   1. For in-band-controlled reporting, 5GMSd AF could also send the metrics configuration to the 5GMSd AS. 2. Changing Media OAM to 5GMSd OAM to align with the 5GMS terms in clause 5.5.3. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 1. Add reporting area as a metrics colletion configuration parameter to indicate the geographical area within which the metrics shall be reported. 2. Adding 5GMSd AF in clause 5.5.3. 3. Changing Media OAM to 5GMSd OAM in clause 5.5.3. 4. Other editorial changes. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | 1. Network slicing is not clearly supported in the metrics reporting. 2. Geographical area information could only be used by the RAN for out-of-band-controlled reporting. The geographical area for metrics reporting can not be used in the in-band-controlled reporting option. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.5.2, 5.5.3, 5.5.4, 4.2.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

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| --- | --- |
| ***This CR's revision history:*** |  |

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

### 5.5.2 Out-of-band-controlled reporting

In the first use-case, shown in figure 5.5.2-1 below, the MNO is controlling the metric reporting, using the out-of-band configuration and reporting option. In this case the metrics are configured via the RAN and the 5G control plane.



Figure 5.5.2-1: Metrics collection using the out-of-band 5G control plane option

The different steps are explained below:

1: Overall metrics configuration is done on the network level, for instance defining which geographical areas that shall have metrics collection active, and how often metrics shall be reported.

2: The metric configuration(s) is sent from the OAM to the RAN, which does not forward that information to the UE at this stage.

3: Time passes, and it assumes that the UE moves around during that period.

4: The UE enters an area (cell, location area, etc.,) which is inside the Reporting Area defined in metric configuration(s). This is discovered by the RAN, and it now needs to activate metrics reporting for the UE.

5: The actual metric configuration is sent from the RAN to the metrics handler function in the media session handler, via the 5G control plane.

6: Additional time passes, and the UE has a metrics configuration, but no streaming session has started.

7: A streaming session is started.

8: The session setup is done in conjunction with signalling transactions (not shown here).

9: A new metrics job is created in the media player.

10: A reference to the new metrics job is returned.

11: The configuration for the metrics collection job is sent to the media player (i.e. which metrics should be measured).

12: Media is delivered and rendered, and...

13: ...more media is delivered...

14: The configured metrics reporting interval has passed, and the metrics handler now requests the collected metrics from the media player.

15: The media player returns the collected metrics.

16: The metrics are reported via the 5G control plane.

17: The session continues...

18: more media is delivered, and then the session is finished.

19: The metrics handler requests the final metrics collected.

20: The media player returns the final collected metrics.

21: The metrics are reported to the OAM via the 5G control plane.

22: The metrics collection job is deleted.

23: Time passes, the UE moves around.

24: The UE leaves the geographical area specified by the metrics configuration.

25: RAN sends metrics (de)configuration to the UE, to stop future metrics collection.

### 5.5.3 In-band-controlled reporting

The second use-case, shown in figure 5.5.3-1 below, illustrates a scenario where the metrics collection is configured in-band. Thus together with the media there are metadata which describe how metrics shall be collected, and how they shall be reported. The 5GMSd OAM, 5GMSd AF and 5GMSd AS functions can both be either trusted or untrusted (but not mixed).



Figure 5.5.3-1: Metrics collection using the in-band metadata option

The different steps are explained below:

1: The content servers are set up, including any metrics configuration.

2: If the 5GMSd OAM, 5GMSd AFand 5GMSd AS are located in a trusted domain, metadata regarding the metrics collection and reporting are sent to the 5GMSd AS. The procedure for configuring the 5GMSd AS, when the 5GMSd OAM, 5GMSd AF and 5GMSd AS reside in an untrusted domain, is unspecified.

3: Time passes during which no streaming session is active...

4: A streaming session starts.

5: The App and the Media Session Handler initializes a new session.

6: The Media Player requests any metadata, from the 5GMSd AS, which is needed for downloading the media content.

7: Metadata is returned to the Media Player and also forwarded to the Media Session Handler and (potentially) to the App.

8: A new metrics job is created in theMedia Player.

9: A reference to the new metrics job is returned.

10: Based on the metadata, the configuration for the metrics collection job is sent to the Media Player (i.e. which metrics should be measured).

11: The streaming session is running.

12: Media is delivered and rendered, and...

13: more media is delivered...

14: The configured metrics reporting interval has passed, and the metrics handler now requests the collected metrics from the Media Player.

15: The Media Player returns the collected metrics.

16: The metrics are reported according to the reporting method defined in the configuration, for instance HTTP upload.

17: The session continues...

18: more media is delivered, and then the session is finished.

19: The Media Session Handler requests the final metrics collected.

20: The Media Player returns the final collected metrics.

21: The metrics are reported.

22: The metrics collection job is deleted.

### 5.5.4 Metrics collection configuration parameters

Table 4.2.3-4 in clause 4.2.3 describes the metrics collection configuration parameters used in step 5 in Figure 5.5.2-1 and step 7 in Figure 5.5.3-1. Note that some of the parameters are only relevant for a specific reporting option, as shown in table 5.5.4-1 below.

Table 5.5.4-1: Metrics collection configuration parameters and options

|  |  |  |
| --- | --- | --- |
| **Parameters** | **Out-of-band-controlled reporting** | **In-band- controlled reporting** |
| Server address |  | X |
| DNN |  | X |
|  |  |  |
| Reporting interval | X | X |
| Sample percentage | X | X |
| Streaming source filter | X |  |
| Reporting Area | X  (Note 1) | X |
| Metrics | X | X |
| NOTE 1: Reporting Area for out-of-band-controlled reporting is only used by RAN to activate the metrics collection and reporting for UEs within certain location, but not sent from RAN to the UE. | | |

\*\*\*\*\*\*\*\*\*\*\*\*\* Second Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 4.2.3 Service Access Information

The Service Access Information is the set of parameters and addresses, which are needed by the 5GMSd Client to activate the reception of a downlink streaming session.

The Service Access Information may be provided together with other service announcement information using M8d. Alternatively, the 5GMSd Client fetches the Service Access Information from the 5GMSd AF. The Service Access Information contains at least the baseline information. Additional information is added, depending on offered features.

Table 4.2.3-1: Parameters of baseline service access information

|  |  |
| --- | --- |
| **Parameters** | **Description** |
| Media player entry | A document or a pointer to a document that defines a media presentation e.g. MPD for DASH content or URL to a video clip file. |
| URL signing information | …. |
| 5GMSd Application Service Configuration Id | Unique identification of the M1d Provisioning Session. |

When consumption reporting is activated, then the parameters from Table 4.2.3-2 are present.

Table 4.2.3-2: Parameters for consumption reporting configuration

|  |  |
| --- | --- |
| **Parameters** | **Description** |
| Report interval | Identify the interval when the consumption report messages are sent by the 5GMS Media Session Handler. |
| Server address | A list of 5GMSd AF addresses where the consumption reporting messages are sent by the 5GMS Media Session Handler. |
| Location reporting | Identify whether the 5GMS Media Session Handler provides the location data to the Media AF (in case of MNO or trusted third parties) |

Table 4.2.3-3: Parameters for dynamic policy invocation configuration

|  |  |
| --- | --- |
| **Parameters** | **Description** |
| Server address | A list of 5GMSd AF addresses which offer the APIs for dynamic policy invocation sent by the 5GMS Media Session Handler. . (Opaque URL, following the 5GMSA URL format) |
|  |  |
| Policy Template Ids | A list of Policy Template Ids, which the 5GMSd Client is authorized to use. |

Table 4.2.3-4: Parameters for metrics configuration

|  |  |
| --- | --- |
| **Parameters** | **Description** |
| Server address | A list of 5GMSd AF addresses to which metric reports shall be sent. |
| DNN | The DNN which shall be used when sending metrics report. If not specified, the default DN shall be used. |
|  |  |
| Reporting interval | The sending interval between metrics reports. If not specified, a single final report shall be sent after the streaming session has ended. |
| Sample percentage | The percentage of streaming sessions that shall report metrics. If not specified, reports shall be sent for all sessions |
| Streaming source filter | A list of URL patterns for which metrics reporting shall be done. If not specified, reporting shall be done for all sessions. |
| Reporting Area | The area within which the metrics shall be reported. If not specified, there is no restriction on the area for reporting matrics. |
| Metrics | A list of metrics which shall be reported. |

Table 4.2.3-5: Parameters for Network Assistance configuration

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* END CHANGES \*\*\*\*\*\*\*\*\*\*\*\*\*\*