**3GPP SA4#129-e S4-241587**

**Online, 19th – 23rd August 2024 Revision of S4-241252**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **26**.**804** | **CR** | **0013** | **rev** | **3** | **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:***  | [FS\_AMD] Multi-Access with ATSSS: Addition of CMMF |
|  |  |
| ***Source to WG:*** | Dolby Sweden AB |
| ***Source to TSG:*** | S4 |
|  |  |
| ***Work item code:*** | FS\_AMD |  | ***Date:*** | 2024-08-13 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-19  |
|  | *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 canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases: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)* *Rel-17 (Release 17)* *Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** |  |
|  |  |
| ***Summary of change:*** | Addition of CMMF as a candidate solution |
|  |  |
| ***Consequences if not approved:*** |  |
|  |  |
| ***Clauses affected:*** | 5.15.6.1 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  |  |
| ***affected:*** |  | **X** |  Test specifications |  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications |  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* \* First change (all new text)\* \* \* \*

### 5.15.6 Candidate solutions

Editor’s Note: Candidate solutions for identified key issue.

#### 5.15.6.1 Multi-access media delivery using CMMF

This candidate solution includes approaches where a 5GMSd Client accesses and downloads, via reference point M4d, CMMF-encoded media objects [CMMF – reference included within CR adding clause 5.19], and possibly original source media (e.g., MPEG-DASH or HLS media segments), over multiple access networks simultaneously from a single 5GMSd Application Server. CMMF (discussed in detail within clause 5.19.6.3) enables multi-access capabilities through application-layer implementations of the 5GMSd Client without requiring lower-layer (e.g., network, transport, etc.) multi-access integrations.

In this solution, multiple different CMMF-encoded bitstreams/objects (or representations) of the source media are stored/cached within a single 5GMSd Application Server. A CMMF-enabled 5GMSd Client requests and downloads a different CMMF-encoded representation of the required original source media over each of the access networks available to it. These (potentially partially) received CMMF bitstreams/objects are jointly decoded by the 5GMSd Client yielding the required original source content.

Integration of CMMF within the 5GMS system is discussed in detail within clause 5.19.6.3.

\* \* \* \* End of changes \* \* \* \*