**3GPP TSG SA4 116-E** ***S4-211449***

**E-meeting, 10th-19th November, 2021**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.0* | | | | | | | | |
| **PSEUDO CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **TS 26.502** | **CR** | **–** | **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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | pCR to TS 26.502 on overview of delivery methods | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei Technologies Co.,Ltd. | | | | | | | | | |
| ***Source to TSG:*** | S4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5MBUSA | | | | |  | ***Date:*** | | | 2021-11-02 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **D** |  | | | | | ***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)*. | | | | | | | |  | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Added text in reference architecture for 5G Multicast-Broadcast User Services | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add overview of delivery methods. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | WID not complete. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.1.1, 6.2.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | |  | | |
| ***affected:*** | |  | **X** | Test specifications | | | |  | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | Changes against skeleton document TS 26.502 v0.1.0 | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

FIRST CHANGE

## 6.1 Object Distribution Method

### 6.1.1 Overview

The Object Distribution Method shall be used by the MBSTF to deliver binary objects over an MBS Session, including files, media segments, etc. The Object Distribution Method supports the following Use Cases:

- Single file delivery.

- Delivery of bundles of (possibly related) objects, e.g. a web page with all its dependent assets.

- Object carouselling for non-real-time file delivery, including updates of objects.

- Object streaming of real-time media segments, for regular-latency or low-latency streaming delivery. In the latter case, the objects distributed may be Low-Latency CMAF segments as defined by the 5G Media Streaming DASH Interoperability Point specified in clause 7.3.11 of TS 26.247 [X].

Basd on the configuration received from the MBSF via reference point Nmb2, the objects are ingested by the MBSTF from the MBS Application Provider. The MBSTF may segment the objects into appropriate payloads, add the FEC redundancy and schedule packet transmission to the MBS Client, as defined in clause X.

File repair functionality may be utlized to repair object fragments transmitted by the MBSTF using the Object Distribution Method but lost or corrupted in transit. In such cases, the MBS Client may request the missing object fragments from the 5MBS AS. File repair may be done during an ongoing MBS Session or after an MBS Session.

Second change

## 6.2 [Packet/PDU] Distribution Method

### 6.2.1 Overview

The [Packet|PDU] Distribution Method is used by the MBSTF to transmit service content that has been received from the MBS Application Provider over reference point Nmb8. The [Packet|PDU] Distribution Method delivers packet streams to the MBS Client over an MBS session. This Distribution Method is particularly useful for multicast and broadcast of IP-based services for which the content delivery protocols are defined outside the scope of the Distribution Method.

The MBSTF receives packet streams in a session from the MBS Application Provider, typically in the form of UDP/IP packets, and forwards them to the configured destination multicast IP address and port number. Optionaly, FEC redundancy may be added by the MBSTF. Either IPv4 and IPv6 may be used by the PDU Distribution Method for content ingest at reference point Nmb8 and for distribution at reference point Nmb9.

The [Packet|PDU] Distribution Session may be operated in one of two different modes:

- In the *Forward-only mode*, the transport protocol on top of IP is opaque to the MBS System and the session announcement may be handled by the MBS Application Provider via external means. The Nmb10 interface between the MBSF and AF can re-use the N33 or N5 interface design.

- In the *Proxy mode*, the UDP packet payload of the UDP streams is opaque to the MBS session and an MBS Client is expected to make the UDP Payloads available directly to an application, without further knowledge of the content carried.

Editor’s Note: MBS Reception Reporting for the [Packet|PDU] Distribution Method is FFS.