**3GPP TSG- Meeting #**

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| *CR-Form-v12.0* | | | | | | | | |
| **pseudo CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
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| *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 | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Work item code:*** |  | | | | |  | ***Date:*** | | |  |
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| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *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:*** | | The use of edge computing as cache for video streaming applications (i.e., progressive download and DASH applications) can offer high bandwidth access to video content while reducing load on the backhaul network.  The current 5GMS specifications do not provide functionality for caching video content at the edge, and further studying this use case is relevant for 3GPP SA4.  (Also see the discussion in S4-200806) | | | | | | | | |
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| ***Summary of change:*** | | Description and recommended requirements for the 'Caching downlink streaming content' edge computing use case. | | | | | | | | |
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| ***Consequences if not approved:*** | | Caching at the edge for downlink streaming may not be studied. | | | | | | | | |
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| ***Clauses affected:*** | | New clause 5.X | | | | | | | | |
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|  | | **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 ... | | |
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| ***Other comments:*** | |  | | | | | | | | |
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| ***This CR's revision history:*** | |  | | | | | | | | |

## 5.X Use case: Caching downlink streaming content

### 5.X.1 Use case description

A Mobile Network Operator that deploys a downlink streaming service or supports the delivery of media content from a third-party service wants to offer that content in the highest possible quality to all of its users. The MNO also notices that video streaming already accounts for a large part of the traffic on the backhaul network. For these reasons, the MNO wants to offload (part of the) content hosting from the CDN to caches near or within its network. Users of the service may access the content from the edge, allowing them to select higher quality renditions of the content (e.g., DASH representations) and play it back without interruptions. The MNO may improve the hit ratios of the cache by employing intelligent caching. Furthermore, to ensure that clients access the content from the optimal edge, the network operator may want to direct clients to this edge.

### 5.X.2 Recommended requirements and working assumption

* It should be possible for edge caches to be operated either by the MNO or by a third-party service such as a 5GMSd Application Provider.
* It should be possible for the network to steer clients to a certain edge or CDN.
* It should be possible for (third-party) services to specify caching directives.
* It should be possible for DASH clients to send hints (e.g., about anticipated upcoming requests) to the network enabling intelligent caching on the edge.
* It should be possible for the network to send hints to clients regarding the delivery of content from the edge (e.g., about availability or bandwidth).