**3GPP TSG SA WG4 Meeting #130 *S4-241864r01***

USA, Orlando, 18 – 22 November 2024 (revision of S4-240xxx)

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| *CR-Form-v12.2* | | | | | | | | |
| **Pesudo CHANGE REQUEST** | | | | | | | | |
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|  | **26.822** | **CR** | **xxxx** | **rev** | **-** | **Current version:** | **1.0.0** |  |
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| *For* ***[HE](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)******[LP](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)*** *on using this form: comprehensive instructions can be found at  <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:*** | KI#12 Solution Data Boosting Indication | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | CATT, Lenovo | | | | | | | | | |
| ***Source to TSG:*** | SA4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | FS\_5G\_RTP\_Ph2 | | | | |  | ***Date:*** | | | 2024-11-05 |
|  |  | | | |  | |  | | |  |
| ***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 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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
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| ***Reason for change:*** | | Providing a new solution for the KI#12. | | | | | | | | |
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| ***Summary of change:*** | | Some scenarios exist where video services are interrupted or halted for a short time e.g. rebuffering the data to continue to video service. And propose the following 3 bullets to support the data boosting:   1. For the rebuffer data, the AS needs to provide data boosting indication to the 5G network, and then the 5G network provides direct or indirect data boosting indication to the NG-RAN. 2. The AS can provide data boosting indication to the 5G network with the data needed for boosting in the RTP HE or the metadata with the data. The AS stops providing the data boosting indication to the 5G network after some time which is AS implementation. 3. The 5G network can reject or stop the data boosting even if the DL data is with a data boosting based on its local policies. | | | | | | | | |
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| ***Consequences if not approved:*** | | XR services frequently are interrupted or halted for a short time. | | | | | | | | |
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| ***Clauses affected:*** | | 6.x (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

## 6. x Solution #x: RTP HE Enhancements for Data Boosting Indication

### 6.x.1 Key Issue mapping

This solution provides ananalysis on the matter of DL data boosting and applies to KI#12new KI#x: Data Boosting.

### 6.x.2 Description

In practice, XR and immersive services may experience some scenarios in which the video service is interrupted or halted for a short time e.g. rebuffering the data to continue to video service. An illustrative example may be:

1. The user starts a new XR conversational WebRTC video service from a WebRTC client via the 5G.
2. For an XR conversational WebRTC video service, the WebRTC Framework in the can continuously monitor the latency and/or the data rate experienced.. When the latency or data rate are not good enough to support acceptable QoE/QoS, the WebRTC Framework (e.g., the RTP sender in an RTC AS) can send a Data Boosting indication in the RTP HE to request the 5G system to provide more radio resources to improve the data rate and decrease the latency.

To improve the user experience, one way is to dynamically boost the available bit rate and reduce the latency. To reduce the latency time, the new conversation video data needs to be more quickly transmitted to the user. However, the NG-RAN does not know such conversation video data needs more quickly transmitted to the user and still transmits the conversation video data in the normal scheduling way.

**Observation 1: In order to reduce the latency of XR conversational video data in some scenarios, the AS needs to provide data boosting indication to the 5G network, and then the 5G network provides direct or indirect data boosting indication to the NG-RAN.**

SA2 has agreed to define that such data boosting (namely “expediated transfer indication”) enabled firstly by AF during the PDU Session Establishment procedure, then the AS send out the data boosting indication in the RTP HE of traffic payload of XR application. Data boosting may be used for non-GBR QoS flow only. SA2 has agreed to use different 5QI for the data boosting, i.e. before the data boosting, the application traffic is transmitted with a normal performance 5QI (e.g. 20ms PDB), after the data boosting is received in the UPF, the UPF will move the application traffic into a QoS Flow with high performance 5QI (e.g. 5 ms PDB).

One key part of data boosting is how the AS can provide in-band data boosting indication to the 5G network. One simple way is to define the data boosting indication in the RTP HE (e.g., the RTP HE for PDU Set marking). The AS needs to stop providing the data boosting indication to the 5G network after some time if the data rate and or latency is OK for the application. However, based on static local policies (as indicated by the PCF), the 5G network can still stop the data boosting even if the DL data carry the data boosting indication.

**Observation 2: The AS can provide in-band data boosting indication to the 5G network with the data needed for boosting in the RTP HE. The AS stops providing the data boosting indication to the 5G network after some time.**

**Observation 3: Based on local policies the 5G network can reject or stop the data boosting even if the DL data is with a data boosting indication.**

### 6.x.3 Conclusion

Based on the gap analysis in the above, it is proposed to make the following conclusions.

1. **Observation 1: In order to reduce the latency of conversation video data in some scenarios, the application needs to provide data boosting indication to the 5G network, and then the 5G network provides direct or indirect data boosting indication to the NG-RAN.**
2. **Observation 2: The AS can provide in-band data boosting indication to the 5G network with the data needed for boosting in the RTP HE. The AS stops providing the data boosting indication to the 5G network after some time.**
3. **Observation 3: Based on its local policies the 5G network can reject or stop the data boosting even if the DL data is with a data boosting indication.**

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