**3GPP TSG-WG SA2 Meeting #154 *S2-2210695***

**Toulouse, France, November 14 – 18, 2022 (revision of S2-220xxxx)**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.501** | **CR** | **3803** | **rev** | **-** | **Current version:** | **17.6.0** |  |
|  | | | | | | | | |
| *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:*** | QoS Monitoring for Dynamic Satellite Backhaul | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, HiSilicon, Xiaomi, CATT, Samsung Electronics Romania | | | | | | | | | |
| ***Source to TSG:*** | SA2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GSATB | | | | |  | ***Date:*** | | | 2022-11-04 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Support of Satellite Edge Computing via UPF deployed on satellite is concluded in clause 8.1 of TR 23.700-27.  According to the conclusion, a new clause is proposed to contain all changes related to satellite backhaul and move existing satellite backhaul texts to the new clause since the enhancments are not only about UP management (which is the main purpose of clause 5.8 of TS 23.501) | | | | | | | | |
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| ***Summary of change:*** | | 1. Add a new clause to describe QoS monitoring for dynamic satellite backhaul. 2. Move the existing clause 5.8.2.15 to clause 5.x.x | | | | | | | | |
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| ***Consequences if not approved:*** | | 1. QoS monitoring for dynamic satellite backhaul is not supported. 2. The structure of satellite backhaul is not easy to read. | | | | | | | | |
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| ***Clauses affected:*** | | 5.X.X(new), 5.X.Y(new), 5.8.2.15 | | | | | | | | |
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|  | | **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:*** | | Further potential changes to QoS Monitoring clause and 23.502/503 need to coordinate with other studies e.g. UPEAS, XRM etc. If the CR is approved, the source companies will provide corresponding CRs in next meeting to specifications including 23.502 and 23.503 considering the outputs of other WIs. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\* \* \* \* First change \* \* \* \*

# 5 High level features

## 5.X Support for 5G satellite backhaul

### 5.X.X Reporting of satellite backhaul to SMF

In the case of dynamic satellite backhaul is used by the NG-RAN, e.g. LEO satellite backhaul with inter-satellite link, the AMF notifies the SMF that a dynamic satellite backhaul is used to serve the PDU session.

and whether dynamic satellite category is used

### 5.X.Y QoS monitoring for Dynamic Satellite Backhaul

The QoS Monitoring for dynamic satellite backhaul is applied for packet delay measurement over N3 interface if dynamical satellite backhaul is in use.

If AMF informs SMF that the dynamic satellite backhaul is used, the SMF inform this to PCF. The PCF determines to trigger QoS monitoring for dynamic satellite backhaul if the dynamic satellite backhaul is used. QoS monitoring for dynamic satellite backhaul follows the description in clause 5.33 with the following differences:

- The QoS monitoring request sent by SMF to UPF requests the UPF to only report packet delay between the NG-RAN and the PSA UPF (i.e. delay of the backhaul part) to SMF as described in clause 4.3.3.2 of TS 23.502 [3].

- The PSA UPF calculates the UL/DL packet delay between the NG-RAN and the PSA UPF (i.e. delay of the backhaul part) and reports the result to the SMF.

\* \* \* \* Second change \* \* \* \*

#### 5.8.2.15 Void

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