**3GPP TSG-WG SA4 Meeting #119E e-meeting  *S4-220661***

**Elbonia, May 11th– 19th, 2022**

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| *CR-Form-v12.1* | | | | | | | | |
| **Pseudo CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **26.806** | **CR** | **-** | **rev** | **-** | **Current version:** | **0.0.1** |  |
|  | | | | | | | | |
| *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 |  |

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| ***Title:*** | pCR QoS Control for Relay AR when 5G sidelink used | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | SA4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | FS\_SmarTAR | | | | |  | ***Date:*** | | | 2022-05-04 |
|  |  | | | |  | |  | | |  |
| ***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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | For WLAR Relay device, the tethering link can be 5G sidelink and the end-to-end QoS-handling to compensate for the non-5G link between the UE and the AR glasses is in the scope. | | | | | | | | |
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| ***Summary of change:*** | | Add existing Layer-3 Relay QoS control mechanism as informative Annex. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The report is not complete. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 2, Annex A | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \* \* \* \*

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TR 26.998: "Support of 5G glass-type Augmented Reality / Mixed Reality (AR/MR) devices".

[3] 3GPP TR 22.859: "Study on Personal Internet of Things (PIoT) networks".

[4] 3GPP TS 22.261: "Service requirements for the 5G system".

[X] 3GPP TS 23.304: "Proximity based Services (ProSe) in the 5G System (5GS)".

[Y] 3GPP TS 23.287: "Architecture enhancements for 5G System (5GS) to support Vehicle-to-Everything (V2X) services".

[Z] 3GPP TS 23.501: "System Architecture for the 5G System; Stage 2".

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

Annex <A> (informative):  
QoS Control of Relay WLAR UE when 5G Sidelink Used for Tethering Link

For Relay WLAR UE, the 5G sidelink communication is used for the tethering link. The tethering 5G Phone providing the IP network connectivitiy can be seemed as a 5G ProSe Layer-3 UE-to-Network Relay and the tethered AR glass can be semmed as a Remote UE as specified in TS 23.304 [X]. The QoS requirements for the end-to-end AR session can be satisfied by the corresponding QoS control for the tethering link between AR glass and 5G Relay UE (i.e. PC5 QoS control), and the QoS control through the 5G system (i.e. the PDU Session between UE and UPF). The tethering link QoS and the 5G System QoS are separately controlled with corresponding QoS rules and QoS parameters (e.g. 5QI, PQI) as specified in TS 23.287 [Y] and TS 23.501 [Z].

As shown in figure A-1 below, the end-to-end QoS can be met only when the QoS requirements are properly translated and satisfied over the two legs respectively.



Figure A-1: End-to-End QoS translation for 5G Layer-3 Relay operation

To achieve this, the QoS mapping can be pre-configured or provided to the 5G Relay UE from the 5GC. The QoS mapping includes combinations of the 5QIs for the 5G link and the PQIs for the tethering link as entries. Both 5QIs and PQIs have standardized values as specified in TS 23.501 [Z] and TS 23.287 [Y].

If the QoS setup of 5G system link is initiated by network, the 5G Core Network can generates the QoS parameters (e.g. 5QI) and signal to the 5G Relay UE. Then the 5G Relay UE determines the tethering link QoS parameters based the pre-retrieved QoS mapping and then setup the tethering link between AR glasses and the 5G Relay UE.

If the AR glass initiates QoS setup or modification for the tethering link, it provides the QoS Info to the 5G Relay UE. The QoS Info (i.e. PQI, etc.) are interpreted as the end-to-end QoS requirements by the 5G Relay UE for the traffic transmission through the 5G system. The 5G Relay UE would check if the end-to-end QoS requirements can be supported, and decide the 5GS QoS and tethering linik QoS parameters based on the QoS mapping.\* \* \* \* End of changes \* \* \* \*