3GPP TSG-WG SA2 Meeting #149E e-meeting *S2-2200774r02*

Elbonia, February 14th – 25th, 2022 (revision of S2-220xxxx)

Source: CATT, Huawei?, Nokia?, OPPO, Futurewei?, Intel?, Tencent?, Lenovo?, vivo?, Ericsson?, Samsung?, interdigital?,

Title: New Key Issue: The differentiated QoS handling considering different importance of media units

Document for: Approval

Agenda Item: 9.19

Work Item / Release: FS\_XRM / Rel-18

Abstract: Proposes a new key issue to study the differentiated QoS handling considering different importance of media units for WT#3.3.

# 1. Introduction

XR services are characterized by high data rate and low latency. XR services bring more chances or more quickly to the RAN congestion. If there is data congestion in the RAN, the XR media units can be dropped by the RAN. In this release, it is anticipated that 5GS QoS framework will be enhanced to support different QoS handling for different XR media unit. And there are different levels of media units in the same QoS Flow, e.g., slices/tiles in the same I/B/P frame, I/B/P frame, GOP, multi-layer sub-streams and media stream. The RAN can drop the least important media units to quickly recover from the congestion state. In such cases, In order to identify the different importance of the different media units in different levels, the 5GS QoS framework needs to get importance/priority information, identify and mark the packets of the media unit. The 5GS QoS framework also needs to consider different relationship for different level media units.

# 2. Text Proposal

It is proposed to capture the following changes vs. TR 23.700-60.

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

XR/media services are characterized by high data rate and low latency. XR/media services bring more chances or more quickly to the RAN congestion. If there is data congestion in the RAN, the XR media units can be dropped by the RAN. In this release, it is anticipated that 5GS QoS framework will be enhanced to support different QoS handling for different XR media unit. And there are different levels of media units in the same QoS Flow, e.g., slices/tiles in the same I/B/P frame, I/B/P frame, GOP, multi-layer sub-streams and media stream. The RAN can drop the least important media units to quickly recover from the congestion state. In such cases, in order to identify the different importance of the different media units in different levels, the 5GS PCC and QoS framework needs to get importance information, identify and mark the packets of the media unit. The 5GS PCC and QoS framework also needs to consider different relationship for different level media units.

This key issue proposes to support differentiated QoS handling considering different importance of media units. e.g., eligible drop packets belong to less important media units to reduce the resource wasting. The key issue includes the following aspects:

- How the 5GS identifies and marks the packets of the one media unit?

- How the 5GS identifies and marks the packets from different media unit?

- How the 5GS (e.g. PCF) receives the different importance/ information for media unit?

- Whether to provide the required information to 5Gs to determine the inter-frame associations?

- At which condition and which network entity and how to enforce to drop all or parts of packets of the same media unit based on the different importance for the media unit?

- How the 5GS defines and handles (e.g., dropping, deferring) the importance relationship between the different media unit? E.g. the tiles/slices in the same frame, the I/B (if available)/P frames in the same GOP, the multiple layer/view/channel media sub-streams for the same media service.

NOTE 1: The 5GS also includes the UE.

NOTE 2: RAN related aspects will be coordinated with RAN WGs.

NOTE 3: Media, e.g I/B/P frames, slice/tile, GoP etc related aspects will be coordinated with SA4.