**3GPP TSG-WG SA2 Meeting #162 *S2-2405104***

**Changsha, China, Apr 15 – 19, 2024 (revision of S2-2404182)**

**Source: Huawei, HiSilicon**

**Title: KI#5, Sol#30: Update on support of dynamic change in traffic burst**

**Document for: Approval**

**Agenda Item: 19.3**

**Work Item / Release: FS\_XRM\_Ph2 / Rel-19**

*Abstract: Update on Sol#30 to complete the solution and address the Editor’s Note.*

# 1. Introduction

The Sol#30, Support of dynamic change of traffic burst size, is agreed in last SA2#161 meeting. However, there are still some details missing and also Editor’s Note to be addressed.

- For Editor’s Note: " *Editor’s Note: How UPF identifies the data burst size is FFS.*", this paper lists different options for UPF to detect the burst size information, including further extending the RTP header extension to include the burst related traffic characteristics, or by the UPF implementation way. Therefore, it’s proposed to remove the EN and add corresponding clarifications.

- Add the missing details on the “Procedures” and “Impact” part and further clarify how the NG-RAN can make use of this burst size as examples.

# 2. Text Proposal

It is proposed to capture the following changes vs. TR 23.700-70.

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

## 6.30 Solution #30: Support of dynamic change of traffic burst size

### 6.30.1 Key Issue mapping

The solution addresses Key Issue #5: QoS Handling when Traffic Characteristics Change Dynamically.

### 6.30.2 Description

For XR or other interactive media services with traffic bursts (e.g., Media streaming, cloud gaming services), the application layer’s network requirements could be quite dynamic. Typically, the size of data burst in XRM services could vary in a wide range. To ensure the occasionally big bursts can be transferred within PDB/PSDB, currently the QoS parameters need to be set according to the potential maximum burst value. This overprovisioning leads to potential waste of network resource and lower user capacity.

In this solution, a fast adaptation mechanism is proposed to support the dynamic changes in traffic characteristics:

- The AF provisions the QoS Requirement for a target media flow, protocol description and indicates that traffic burst size can change dynamically.

- The PCF authorizes the service data flow in the PCC rule based on the AF input and/or local operator configuration.

- Based on the PCC rule from the PCF, the SMF generates and provides the QoS profile with authorized QoS parameter to the NG-RAN.

- The SMF instructs the UPF to detect the dynamic change in the burst size for the target service data flow and to further notify NG-RAN on the changed traffic burst size. The protocol description if provided by the AF would be sent from SMF to UPF to assist the burst size detection.

- The UPF detects the dynamic change of the burst size for the target service data flow and sends the burst size of the data burst to NG-RAN via GTP-U header. The burst size can be identified by UPF based on the N6 protocol (extensions of N6 protocol may be needed in SA4), or by the UPF implementation.

Editor’s Note: RAN2 and SA4 feedback is required on this solution.

- The NG-RAN can use the received burst size to assist radio resource management. For example, the NG-RAN may use the burst size to schedule radio resources for the coming burst traffic and/or release superfluous radio resources for other services or UEs for efficient radio resource scheduling.

6.30.3 Procedures

The existing AF Session with required QoS procedure in clauses 4.15.6.6 and 4.15.6.6a of TS 23.502 [3] can be reused to provision the protocol description and the indication that the traffic burst size can change dynamically by AF. The PCC rule is provided by PCF to the SMF using the existing PCF initiated SM Policy Association Modification procedure as specified in clause 4.16.5.2 of TS 23.502 [3]. The SMF then performs network requested PDU Session Modification procedure as specified in clause 4.3.3 of TS 23.502 [3].

Afterwards, the UPF detects the dynamic change of the burst size for the target service data flow and sends the burst size of the data burst to NG-RAN via GTP-U header as instructed by SMF. And the NG-RAN can use the received burst size to assist radio resource management.

6.30.4 Impacts on services, entities and interfaces

**AF**:

- provides an indication which indicates the traffic burst size can change dynamically.

**PCF:**

- based on the AF input and/or local configuration, generates the PCC rule.

**SMF**:

- indicates the UPF to identify and mark the burst size and provides the protocol description if available.

**UPF:**

- identifies the burst size and marks in the GTP-U header of DL packet based on the protocol description and/or implementation.

**RAN:**

- use the burst size indicated in the GTP-U header of DL packet to assist efficient radio resource scheduling

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