**SA WG2 Meeting #162 S2-240xxxx**

**Changsha, China, April 15 –19, 2024**

**Source: China Mobile (Volunteer for Rel-19 FS\_XRM\_Ph2 KI#1b)**

**Title: Report of Rel-19 SA2 FS\_XRM\_Ph2 KI#1b discussion**

**Document for: Information**

**Agenda Item: 19.3**

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

*Abstract of the contribution: This contribution provides a report of SA2 Rel-19 FS\_XRM\_Ph2 KI#1b discussion.*

# 1. Description of Key Issue#1b

The followings are described in TR 23.700-70 v0.4.0.

|  |
| --- |
| 5.1 Key Issue #1: Support of PDU set based QoS handling enhancement5.1.1 Description This key issue will study PDU set based QoS handling enhancements considering both control plane and user plane perspectives. In particular, this KI will address:  - whether, what and how PDU Set based handling (e.g. new standardized 5QI, enhancements to Alternative QoS profiles, FEC, etc.) and PDU Set information (including Control Plane and/or User plane information) provided by the AF/AS are enhanced.  NOTE: This will require close coordination with SA WG4 and RAN WGs. |

# 2. Solution for KI#1b

Currently no solution is captured in the TR for KI#1b.

# 3. Summary on KI#1b view

Q1: Do you plan to submit a new solution for KI#1b?

* No company replied;

Q2 : What is your preferred conclusion (e.g. solution#, agreeable principles) for this KI?

* 16 companies replied, and seems all agree to enhance AQP with PDU Set QoS Parameters;
* 7 companies proposed their preferred solutions;
* 7 companies propose their general ideas and basic principles;

Summary table from the input as FYI:

|  |  |
| --- | --- |
| **Main area from input** | **Support companies** |
| Support Solution 19 concept | China Mobile, Nokia, LGE, CATT, Samsung |
| Support common idea of Solution 6 and Solution 19 to extend AQP to include PSDB and PSER considering media type information | Tencent, Xiaomi, |
| Upgrade of Alternative QoS(Sol#7) | OPPO |
| Only adding the PDU set QoS parameters in Alternative QoS profiles and keep the existing NG-RAN mechanism to handle the Alternative QoS profiles | Ericsson |
| Support the PDU set QoS included in Alternative QoS profile | Lenovo, Qualcomm, Huawei, vivo, China Telecom, Xiaomi, |
| No strong opinion | MediaTek, Interdigital |

# 4. Way forward proposal for KI#1b

Based on the input from r22 of XRM\_QA on KI1b, the following are proposed as possible way forward:

**Proposal 1**: To discuss and agree the following agreeable principle as proposed in Sol#19, #6 and #7.

* to extend AQP to include PSDB and PSER considering media type information

**Proposal 2**:

* To refine Sol#19 further as baseline solution (e.g. to merge common agreeable aspects in other solutions if necessary) for TR conclusion in next meeting.

# Annex. Companies’ view for KI#1b

The following views were extracted from [https://www.3gpp.org/ftp/tsg\_sa/WG2\_Arch/TSGS2\_162\_Changsha\_2024-04/INBOX/DRAFTS/R19%20FS\_XRM](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_162_Changsha_2024-04/INBOX/DRAFTS/R19%20FS_XRM_Ph2)[\_Ph2](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_162_Changsha_2024-04/INBOX/DRAFTS/R19%20FS_XRM_Ph2)

Key Issue #1b

|  |  |
| --- | --- |
| **(1b): Alternative PDU Set QoS handling (Sol #6, #7, #19)** | [Nokia] – Prefer solution #19 - allow alt-QoS profiles with PDU Set QoS parameters, to enable switching between profiles based on PDU Set information (e.g. media type, or QoS/Alt-QoS Indicator) provided as PDU Set Information to the RAN, and notification of profile switching to the AF. This switch can happen when there is a transition in the media transition over a period of time.  [LGE] - Solution #19, Support the Alternative QoS profile to include alternative PDU Set QoS parameter Set(s) with PSDB and PSER and QoS notification via control plane  [Tencent] Solution #6 and19# are aligned in some aspects ie.g. media type information and also the idea to extend AQP to include PSDB and PSER. Prefer to capture common principles from solutions.  [Lenovo] PDU set QoS parameters should be included in the alternative QoS profile, which enables NG-RAN to perform PDU set based handling based on the alternative PDU set QoS.  [MediaTek] No strong views yet.  [InterDigital] No strong views yet.  [Qualcomm] We support adding PSER, PSDB and PSIHI to AQP.  [Ericsson]: We are OK to enhance AQP with PDU Set QoS Parameters as they are missing, should have been done in Rel-18 already.  Additional changes proposed lack proof of benefit and consequently should not be considered.  At this stage we have strong concerns to consider these solutions for conclusions, especially before the feedback on ENs from other WGs is received.  Based on our current understanding of the documented solutions, we have strong concerns with solutions that propose fundamental change to the 5GS QoS Framework, where a QoS Flow is the smallest entity subject to QoS handling describing packet forwarding for all data mapped on that QoS Flow and there is only one QoS profile at any given time. This is fundamental as it is valid throughout the whole 5GS including NG-RAN. It was deliberately specified in that way enabling different QoS profiles being applicable to separate QoS Flows that carry data with flow with different QoS requirements. No benefits or drivers that would justify such drastic change have been shown.  [Huawei]  We are supportive on adding PDU Set QoS parameters into alternative QoS profile. Based on the RAN capability of PDU Set handling support, the Alternative QoS profiles can be updated accordingly, i.e., with or without the PDU Set QoS parameters.  On the exposure part, this can be discussed together with Key Issue#9.  [vivo] We support adding PSER, PSDB to AQP. PHISI is not suitable as alternative QoS.  **[China Telecom]**  We are OK to add PDU Set QoS parameters to AQP, so that NG-RAN can perform PDU set based handling based on these alternative PDU Set QoS.  [CATT]  We support to enhance AQP with PDU Set QoS Parameters and prefer the solution #19 to be further refined.  [OPPO]  Prefer Sol#7 option 2, i.e., add PDU set QoS parameters into the alternative QoS profile to get the upgraded alternative QoS profile.  [China Mobile] Support solution 19, and propose to enhancement the Alternative QoS feature with considering the PDU set information, or media type information.  **[Xiaomi]** 1) To enhance the Alternative QoS profiles with PDU set Parameters (proposed by Sol#6, Sol#7 and Sol#19). 2) AQPs applied considering the PDU set information based on the AF request is preferred in Sol#19. 3) Traffics with different media types with different QoS requirements are mapped into different QoS flows, the proposal of media types in Sol#6 is supported by exist mechanism.  **[Samsung]** we are supportive on enhancement of AQP qith PDU Set QoS parameters. Further refinement can be based on #19. |
| **Do you plan to submit a new solution for this KI?** | Seems No new solution will be provided for this 1b. |
| **What is your preferred conclusion (e.g. solution#, agreeable principles) for this KI?** | [Nokia] Solution #19 - Alt-QoS with PDU Set QoS Params and profile switching based on new PDU Set Information (in GTP-U HE from UPF)  [Tencent]We propose to focus on resolving the ENs and update solutions in Apirl meeting and make evaluation and conclusion in May meeting.  [Lenovo]. For 1b, the basic principle is to add PDU set QoS parameters into alternative QoS profile, e.g., solution#7.    [Qualcomm] For AQP handling for PDU sets: Solution 6 (or the same aspects of solution 19).  Ericsson: #5 opt 2  [Huawei] Support alternative QoS Profile enhancement. Solutions under 1c (e.g. AL-FEC) are valuable to discuss but generally need further clarifications for evaluation, see above.  [vivo]  1b  - adding PSER, PSDB to AQP. PHISI is not suitable as alternative QoS.  [CATT]  Alterantive QoS based on solution #19  [OPPO]  For Alternative PDU Set QoS handling, Sol#7 option 2, i.e. add PDU set QoS parameters into the alternative QoS profile.  [Xiaomi]:  (1b) To enhance the Alternative QoS profiles with PDU set Parameters (proposed by Sol#6, Sol#7 and Sol#19), and AQPs applied considering the PDU set information based on the AF request in Sol#19 is preferred. |