**Title: Informal feedback on companies' position in xRM\_ph2 (TR 23.700-70 v0.4.0)**

# 1 Overall description

TR 23.700-70 v0.4.0 contains 30 solutions covering all KIs except for KI#8. Some solutions contain various options as well like (e.g., using control plane vs. user plane, UPF detection vs. info sending from AS, etc).

To optimize (or consolidate) the input paper for future meetings; companies are requested to provide feedback regarding the solution(s) and/or agreeable principles for various KIs, currently documented in TR 23.700-70 v0.4.0. It also helps to determine the solutions that have majority interest and/or result in significant concerns.

We ask each company to give your view towards this question (one so far). This is not an evaluation for each of the solutions that are currently documented. It is mainly to seek your view on how each key issue can be addressed, based on the input form TR 23.700 so far. Then we will seek a volunteer for each key issue to drive summarizing the input.

**Q1. How should this problem be resolved?**

E.g., list the principles you think are the right approach to resolve this key issue and point to the subclause of TR 23.700-70

E.g., none of the principle suggested defined so far is good enough and why.

**Key Issue #1**

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| Key area | Input from Company - ABC |
| (1a): Active discard by RAN due to FEC (all FEC related Solutions - #1, #2, #3, #4, #21) | In general, all solutions have a large number of ENs where number of such require feedback from other WGs.  While adding large complexity, the solutions lacking a proof of benefits. All solutions suffer from contradicting the paradigm of how applications on Internet are expected to behave, i.e., react to packet losses by reducing the rate (see <https://datatracker.ietf.org/doc/html/rfc8083>). Hence, given all solutions propose to continuously discard packets by RAN, a properly behaving Internet application will reduce the rate to a level where at some point no service will be provided. Other issues are partly reflected by the ENs.  At this stage we have strong concerns to consider these solutions for conclusions, especially before the feedback on ENs from other WGs is received. |
| (1b): Alternative PDU Set QoS handling (Sol #6, #7, #19) | 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. |
| (1c): Other PDU set and QoS related topics (Sol #5, #8, #20, #22, #23) | Ok to provide PDU Set information independent of PDU Set QoS Parameters availability. |
| Do you plan to submit a new solution for this KI? | No. |
| What is your preferred conclusion (e.g. solution#, agreeable principles) for this KI? | #5 opt 2 |

**Key Issue #2**

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| (2): end-to-end encrypted XRM (Sol #9, #10, #11, #12, #24, #25, #26, #27) | Following the principles shown below, we consider solutions #26 and #24 as our preferred ones, although solution #24 should not open the door to an indeterminate number of implementations based on SLA, see below. |
| Do you plan to submit a new solution for this KI? | No. |
| What is your preferred conclusion (e.g. solution#, agreeable principles) for this KI? | #26 and #24 can be merged.  These are our agreeable principles:  Metadata needs to be integrity protected, but PDU Set information is not considered privacy sensitive. In addition, identification of the media fetched by an end-user should not be exposed (e.g. through MoQ track id) to avoid privacy violation.    Solutions putting additional requirements on the UPF not related with the goals of the key issue, such as implementing a MoQ relay should be avoided.    Solutions should be applicable to most use cases. We believe MoQ relay works for MoQ framework only.    Solutions based on any number of undefined implementation options (to be agreed by means of SLA), don't provide a basis for a standard. They are not acceptable to us.    Solutions should minimize impact on the UPF and Application Servers. |

**Key Issue #3**

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| (3): Leverage PDU Set QoS information for DSCP marking over N3/N9 in the transport network (Sol #13, #27) | The benefits of adding such functionality have not been shown, hence the ‘whether’ part is not addressed. It is emphasized that PSI is not a QoS parameter and thus there is no justification to consider it on the transport in the same way as QoS parameters are considered. The purpose and the need for any functionality based on that KI still remains unknown. |
| Do you plan to submit a new solution for this KI? | No |
| What is your preferred conclusion (e.g. solution#, agreeable principles) for this KI? | Given no benefits are shown, there is no justification for introduction of specification changes. |

**Key Issue #4**

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| (4): Traffic detection and QoS flow mapping for multiplexed data flows (Sol #8, #9, #12, #14, #15, #27, #28, #29) | Agree to KI: applications may need to multiplex different types of streams on a single transport connections |
| Do you plan to submit a new solution for this KI? | Yes. The need of extending the packet filter set has not been assessed. It is possible to multiplex streams in a single transport connection using MP-QUIC and steer the streams to QoS flows with the Rel-18 packet filters. In-band assistance can facilitate traffic differentiation and reduce the interactions needed between the 5GC and the AF. |
| What is your preferred conclusion (e.g. solution#, agreeable principles) for this KI? | The solution should not be coupled or dependent on the solution for PDU Set handling for encrypted traffic (e.g. KI#2). Good if the same technology is used, but the solution should be valid for XRM applications and all type of multiplexing applications. Preferably one solution is selected both for encrypted and unencrypted traffic.  To be agreeable, the solution shall not compromise the 5GS user plane performance. For that, any extension to the packet filters, should be very simple. If 5-tuple is determined not to be enough for media stream differentiation, we should consider adding to the packet filters the QUIC CID, which is also sent in clear. If needed, the packet filter could be extended instead with a simple additional filter e.g. a stream code. This added element is provided in the packet filter by the AF in the QoS request and in-band by the application to assist 5GC to differentiate the traffic. For example, solutions #12, #14, #17 are based on this principle.  To reduce the AF-5GC interactions, the solution should not require that the AF requests are sent per multiplexed stream.  The selection of the technology for in-band collaboration requires further discussion. There are still ENs that need to be solved and some solutions could not be discussed in last meeting. |

**Key Issue #5**

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| (5): QoS handling with dynamic traffic characteristics (Sol #12, #16, #30) |  |
| Do you plan to submit a new solution for this KI? | Yes, to support in-band (N6/N3) update of changed periodicity. |
| What is your preferred conclusion (e.g. solution#, agreeable principles) for this KI? |  |

**Key Issue #6**

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| (6): L4S for non-3GPP access networks and intermediate 5GS nodes (Sol #17) |  |
| Do you plan to submit a new solution for this KI? |  |
| What is your preferred conclusion (e.g. solution#, agreeable principles) for this KI? |  |

**Key Issue #7**

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| (7): Support for PDU Set in non-3GPP access (Sol #18) |  |
| Do you plan to submit a new solution for this KI? |  |
| What is your preferred conclusion (e.g. solution#, agreeable principles) for this KI? |  |

**Key Issue #8**

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| (8): Enhancement for UE with the tethered devices (Sol #--) |  |
| Do you plan to submit a new solution for this KI? |  |
| What is your preferred conclusion (e.g. solution#, agreeable principles) for this KI? |  |

**Key Issue #9**

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| (9): Enhancement for XR related network information exposure (Sol #19) | The solution have ENs that require feedback from other WGs and thus it is premature to consider it. It also lacks evaluation against already supporting functionalities, i.e., against the baseline. |
| Do you plan to submit a new solution for this KI? | No |
| What is your preferred conclusion (e.g. solution#, agreeable principles) for this KI? | We do not see justification to introduce more solutions in that area. |