

MoQ relays for Support of High-Throughput Low-Latency Traffic in 5G

draft-defoy-moq-relay-network-handling-02

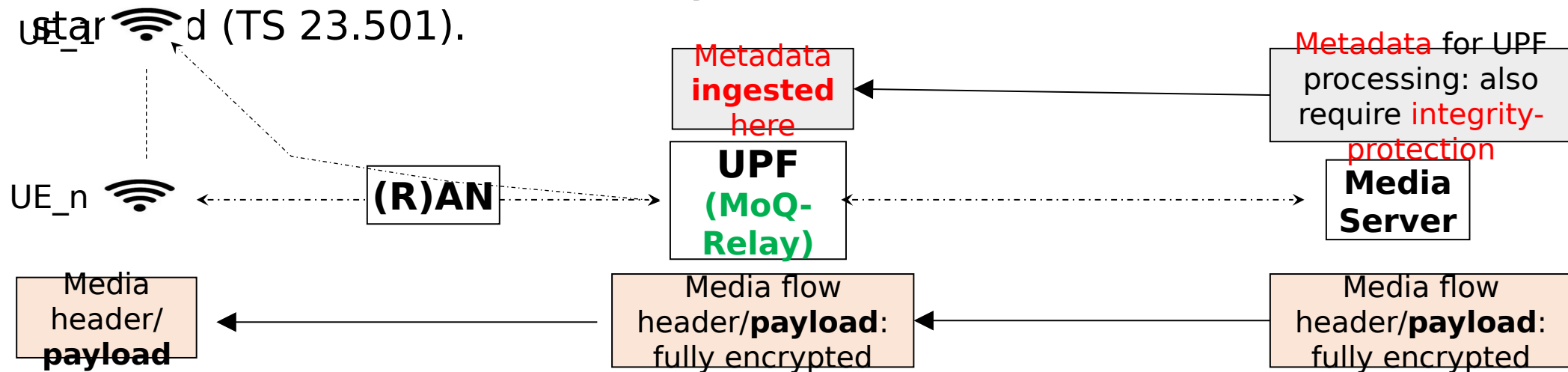
Xavier de Foy, Renan Krishna, **Tianji Jiang**

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MoQT to support per-object metadata for E2E encrypted XRM media streams

Already accepted into the 3GPP 5G standard

- XRM (eXtended Reality & Multi-modality) service: high throughput (100s Mbps to Gbps), low-latency (10-20 ms)
 - RAN/wireless channel conditions, interference, end-users' movement leading to variation in link capacity over short interval
- **Fully-encrypted** header/payload to be transmitted end-to-end (Media Server ↔ UEs)
- The media **metadata**, i.e., named as PDU Set information and related to the characteristics of transported media data/payload, needs to be identified in the 5GS
- The *metadata* is processed by UPF, while the transmission of metadata must be integrity-protected.
- The solution based on **MoQ-relay** (deployed in UPF) has been accepted by 5G standard (TS 23.501).



Requirements on MoQT protocol :

XRM Metadata (PDU-set info, Per-PDU) => MoQ Object Metadata

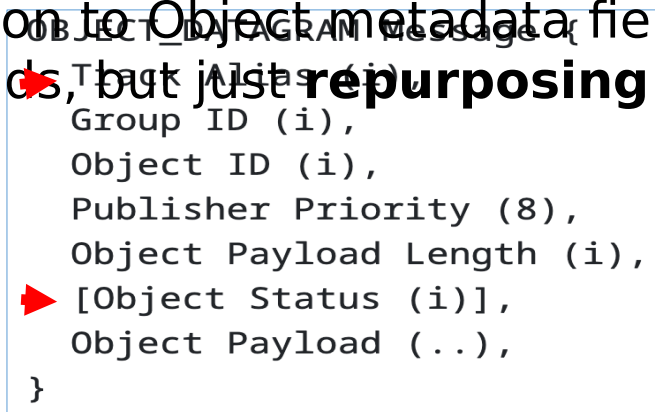
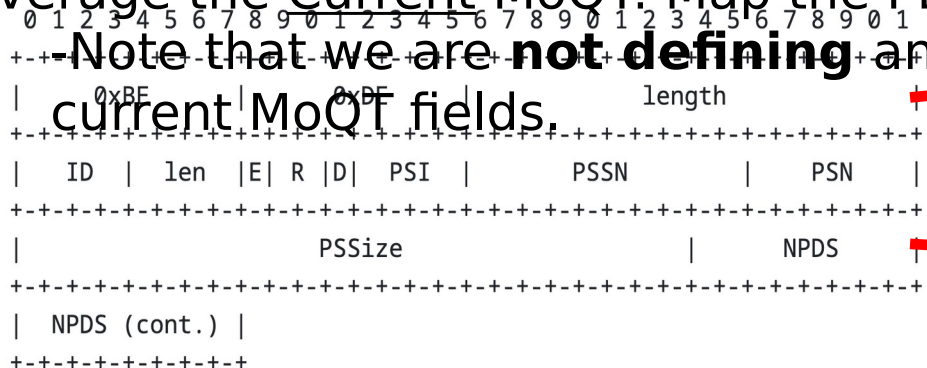
(**Per-Object mapping**) XRM Metadata defined by 3GPP (TS 23.501, TS 26.522)

- Example: one-byte RTP HE for XRM metadata, demonstrating various kinds of PDU-Set information: e.g.,

PSI: PDU-set importance **PSSN**: PDU set sequence number **NPDS**: #PDUs in a PDU Set

- Leverage the Current MoQT: Map the PDU Set information to Object metadata fields:

- Note that we are **not defining** any new MoQT fields, but just **repurposing** the current MoQT fields.

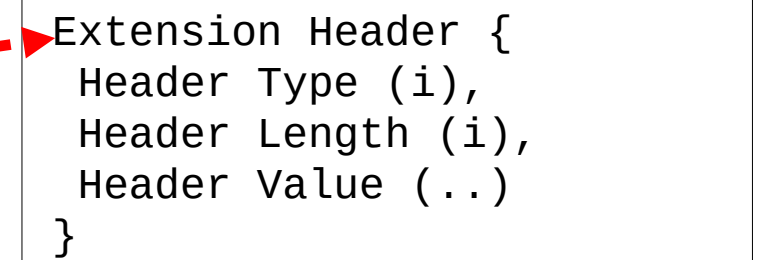
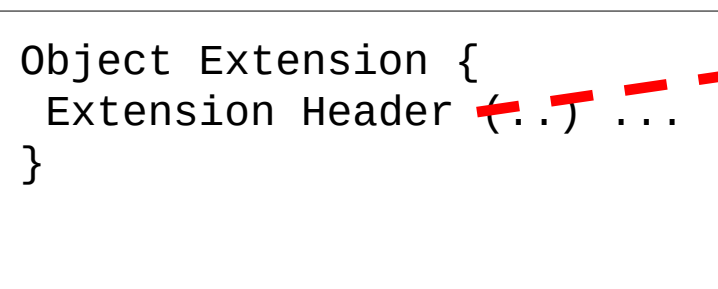


Challenges:

- Mapping accuracy w/o affecting the controllability of MoQ object metadata (NO-repurpose)
- Extensibility: e.g., map more XRM related parameters with the evolution of 3GPP releases

So, a much better scheme with MoQ Object Extension Header:

<https://github.com/moq-wa/moq-transport/pull/>



Thank you!