**3GPP TSG SA WG4 #116e *S4-211542***

**E-meeting, 10-19 November, 2021**

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| *CR-Form-v12.0* | | | | | | | | |
| **Pseudo CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **26.804** | **CR** | **<CR#>** | **rev** | **1** | **Current version:** | **0.5.0** |  |
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| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

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|  | | | | | | | | | | |
| ***Title:*** | [FS\_5GMS-EXT] HTTP/3 Candidate Solution - Metrics reporting using QLOG events | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Tencent | | | | | | | | | |
| ***Source to TSG:*** | SA4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | FS\_5GMS-EXT | | | | |  | ***Date:*** | | | 2021-11-03 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) Rel-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Describe candidate solution for HTTP/3 operation on 5GMS | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 2, 3, 5.4.6, | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
| ***56*** | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**===== CHANGE =====**

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

…

[QLOG-schema] Robin Marx, Luca Niccolini, Marten Seemann, draft-ietf-quic-qlog-main-schema-01, "Main logging schema for qlog", Internet-Draft, Work in Progress, 25 October 2021.

[QLOG-H3] Robin Marx, Luca Niccolini, Marten Seemann, draft-ietf-quic-qlog-h3-events-00, "HTTP/3 and QPACK event definitions for qlog", Internet-Draft, Work in Progress, 10 June 2021.

[QLOG-QUIC] Robin Marx, Luca Niccolini, Marten Seemann, draft-ietf-quic-qlog-quic-events-00, "QUIC event definitions for qlog", Internet-Draft, Work in Progress, 10 June 2021.

[HLS] Roger Pantos and William May, Jr., "HTTP Live Streaming", RFC 8216, August 2017.

**===== CHANGE =====**

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

CDN Content Delivery Network

FAR Forward Action Rule

MAR Multi-Access Rule

PDR Packet Detection Rule

PFCP Packet Forwarding Control Protocol

QER QoS Enforcement Rule

QLOG QUIC Logging

PFD Packet Flow Description

SDF Service Data Flow

URL Uniform Resource Locator

URR Usage Reporting Rule

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#### 5.4.1.6 QLOG metrics reporting for HTTP/3 and QUIC

One adjustment to the 5GMS architecture to accommodate HTTP/3 could be to provide additional metrics reporting at Layer 7 and Layer 4. In addition to DASH application metrics, providing metrics on HTTP/3 protocol operation and, perhaps, even on QUIC might be useful for 5GMS System operators.

When DASH is used as a streaming protocol, DASH metrics would continue to be available when a DASH client creates an HTTP/3 connection to an HTTP/3 server.

When a non-DASH client, for example, an HLS [HLS] client, creates an HTTP/3 connection to an HTTP/3 server, a different mechanism would be necessary for metrics reporting. A capability called “QLOG”, currently under development in the QUIC working group of the Internet Engineering Task Force, is one such mechanism.

QLOG is composed of three related specifications:

- a protocol-independent schema specification and mapping to JSON in [QLOG-schema]

- a specification for HTTP/3-level events [QLOG-H3], and

- a specification for QUIC-level events [QLOG-QUIC].

QLOG events can be stored, aggregated, and reported in a variety of ways. In particular, QLOG events can be collected at both endpoints of a connection, so these events could be reported by an HTTP client, an HTTP server, or both, if comparison is desired.

QLOG could be used to collect HTTP-level events for any HTTP-based streaming protocol running over HTTP/3.

QLOG could also be used to collect QUIC-level events for any streaming protocol encapsulated in QUIC, but consideration of this usage can be deferred until such protocols are identified.

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#### 5.4.5.5 5GMS Operation taking advantage of HTTP/3 capabilities

5G Media Streaming provides the ability to support regular OTT media streaming by providing additional and auxiliary information between the Media Session Handler and the 5GMSd AF. Supported functions in Rel-16 include telco CDN, network assistance and for example metrics reporting. It would be appropriate to adjust 5GMS function to HTTP/3 based delivery. As an example, certain DASH metrics are designed for TCP based streaming and would preferably be updated to account for HTTP/3 based delivery.

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5.4.6 Candidate Solutions

Editor’s Note: Provide candidate solutions (including call flows) for each of the identified issues.

#### 5.4.6.1 Metrics reporting using QLOG events

Editor’s Note: Contribution pending.

**===== END CHANGES =====**