**3GPP TSG-SA WG4 Meeting #132S4-250999**

**Japan, Fukuoka, 19 – 23 May 2025 revision of S4-250513**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
|  |
| *For* [***HELP***](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)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  | [5G\_RTP\_Ph2] Enabling Dynamic Policy API with dynamic traffic characteristics markings |
|  |  |
| ***Source to WG:*** | Lenovo |
| ***Source to TSG:*** | S4 |
|  |  |
| ***Work item code:*** | 5G\_RTP\_Ph2 |  | ***Date:*** | 2025-05-13 |
|  |  |  |  |  |
| ***Category:*** |  |  | ***Release:*** | Rel-19 |
|  | *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 canbe 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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | Lack of support of dynamic traffic characteristics markings for Real-Time Media Communications Dynamic Policy API.The dynamic traffic characteristics (i.e., data burst size, time to next burst, expedited transfer indication) have been defined in Rel-19 of TS 23.501 as downlink enhancements to support XR media services. Furthermore, TS 26.522 defined RTP header extensions to transport in user plane the dynamic traffic characteristics as required by TS 23.501. Yet, TS 26.113 lacks details about how dynamic traffic characteristics are applicable and usable in the context of RTC media delivery system protocols and Dynamic Policy API |
|  |  |
| ***Summary of change:*** | - Complemented RTC Dynamic Policy API and associated media delivery protocols details with dynamic traffic characteristics (incl. data burst size marking, time to next burst marking and expedited transfer indication marking). |
|  |  |
| ***Consequences if not approved:*** | Lack of Stage 3 support for dynamic traffic characteristics for RTC media delivery and misalignment with Stage 2 architecture and procedures. |
|  |  |
| ***Clauses affected:*** | 2, 10.3, 10.3.1 (new sectioning), 10.3.2 (new sectioning), 10.3.X (new) |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS 26.522 CR0016 rev0  |
| ***affected:*** |  |  |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  |  |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | * This further depends on agreement of a new standalone RTP header extension for ETI in TS 26.522, as proposed in CR0016 rev0.
* This further depends on addition of *DYN\_CHANGING\_TRAFFIC\_CHAR\_ETI* RtpHeaderExtType to TS 29.571 for support of a new RTP Header Extension for ETI.
 |
|  |  |
| ***This CR's revision history:*** | Rev1: * Resolved EN on rtpHeaderExtType value and integrated new data model from CT4 CR639 rev2
* Introduced separate RTP header extension for ETI marking and split the dynamic traffic characteristics markings according to the associated RTP HEs (i.e., RTP HE for dynamcally changing traffic characteristics and RTP HE for ETI marking).
 |

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

# 2 References

[x1] 3GPP TS 29.244: "Interface between the Control Plane and the User Plane nodes".

\* \* \* \* Next change \* \* \* \*

## 10.3 Dynamic Policy API

### 10.3.1 Introduction

The Dynamic Policy API allows the RTC Media Session Handler of the RTC Client or the ICE Function of the RTC AS or the WebRTC Signalling Function of the RTC AS to request a specific QoS and/or charging policy to be applied to the application flows of an RTC session. The Dynamic Policy API is invoked as a result of SDP negotiation during the WebRTC signalling phase of the RTC session.

The relevant procedures are specified in clause 5.3.3 of TS 26.510 [3].

The resource structure and the data model are specified in clause 9.3 of TS 26.510 [3].

### 10.3.2 Enabling PDU Set handling in dynamic policies

If specific QoS with PDU Set parameters is desired, and PDU Set marking is not enabled for the selected Policy Template as specified in clause 5.3.3.2 of TS 26.510 [3], the Media Session Handler shall additionally populate the mediaTransportParameters property of the Application‌Flow‌Description object (see clause 5.5.4.13 of TS 29.571 [36]) as follows when creating or updating a Dynamic Policy Instance based on that Policy Template:

- The transportProto property shall be set to the value SRTP.

- The rtpHeaderExtInfo object (see clause 5.5.4.14 of TS 29.571 [36]) shall be omitted.

- The rtpPayloadInfoList property shall contain a single member populated as follows:

- rtpPayloadTypeList shall be set to the *RTP Payload Type* value(s) to be used by the RTC endpoint (e.g., the RTC Access Function of an RTC Client) for the negotiated SRTP session(s) to be carried by the application flow in question.

- rtpPayloadFormat shall be populated as appropriate in the absence of RTP header extensions.

If PDU Set marking is enabled for the selected Policy Template as specified in clause 5.3.3.2 of TS 26.510 [3], the Media Session Handler shall additionally populate the mediaTransportParameters property of the Application‌Flow‌Description object (see clause 5.5.4.13 of TS 29.571 [36]) as follows when creating or updating a Dynamic Policy Instance based on that Policy Template:

- The transportProto property shall be set to the value SRTP.

- The properties of the rtpHeaderExtInfo object (see clause 5.5.4.14 of TS 29.571 [36]) shall be populated as follows:

- rtpHeaderExtType shall be set to PDU\_SET\_MARKING.

- rtpHeaderExtId shall be set to the value of the *ID* field to be used by the RTC endpoint (e.g., the RTC Access Function of an RTC Client) in the *RTP Header Extension for PDU Set Marking* on the application flow in question, as specified in clause 4.2 of TS 26.522 [37]. The value of this parameter is negotiated via the SDP offer/answer procedure during the WebRTC signalling phase of the RTC session.

- longFormat shall be set according to the use of the one- or two-byte *RTP Header Extension for PDU Set Marking*, as specified in clause 4.2.1 of TS 26.522 [37]. The value of this parameter is negotiated via the SDP offer/answer procedure during the WebRTC signalling phase of the RTC session.

- pduSetSizeActive shall be set to reflect the presence of the *PDU Set Size* field in the *RTP Header Extension for PDU Set Marking*, as specified in clause 4.2.4 of TS 26.522 [37]. The value of this parameter is negotiated via the SDP offer/answer procedure during the WebRTC signalling phase of the RTC session.

NOTE: The intention of the RTC Access Function of the RTC Client to include the optional NPDS (Number of PDUs in the PDU Set) field in the *RTP Header Extension for PDU Set Marking* is not yet signalled in advance to the 5G Core by means of a Boolean flag in the RtpHeaderExtInfo specified in clause 5.5.4.14 of TS 29.571 [36].

- The rtpPayloadInfoList property shall contain a single member populated as follows:

- rtpPayloadTypeList shall be set to the *RTP Payload Type* value(s) to be used by the RTC endpoint (e.g., the RTC Access Function of an RTC Client) for the negotiated SRTP session(s) to be carried by the application flow in question.

- rtpPayloadFormat shall be omitted because RTP header extensions are present.

In all PDUs it contributes at reference point RTC‑4m or RTC‑12 that fall within the scope of the application flow description, the RTC Access Function (Media Access Function) shall use the protocol indicated in transportProto; it shall set the SRTP header fields in accordance with rtpPayloadInfoList; and it shall include a one- or two- byte (consistent with the signalled length) *RTP Header Extension for PDU Set Marking* in the SRTP header with fields set according to the values declared in the rtpHeaderExtInfo property per above.

### 10.3.X Enabling dynamically changing traffic characteristics marking in dynamic policies

#### 10.3.X.1 Dynamically changing traffic characteristics marking for data bursts

If any dynamically changing traffic characteristics marking for data bursts is required by the selected Policy Template, as specified in clause 5.3.3.2 of TS 26.510 [3] (i.e., *downlinkData‌Burst‌Size‌Marking* is set to *true*, and/or *downlinkTime‌To‌Next‌Burst‌Marking* is set to *true* in the policy binding of the Service Access Information), the Media Session Handler shall additionally populate the media‌Transport‌Parameters property of the Application‌Flow‌Description object (see clause 5.5.4.13 of TS 29.571 [36]) as follows when creating or updating a Dynamic Policy Instance based on that Policy Template:

- The transportProto property shall be set to the value SRTP.

- The properties of the *RtpHeaderExtInfo* type (see clause 5.5.4.14 of TS 29.571 [36]) as either a rtpHeaderExtInfo object or as an element of the *addRtpHeaderExtInfo* object (see clause 5.5.4.13 of TS 29.571 [36]) shall be populated as follows:

- rtpHeaderExtType shall be set to *DYN\_CHANGING\_TRAFFIC\_CHAR*.

- rtpHeaderExtId shall be set to the value of the *ID* field to be used by the Media Function of an RTC AS in the *RTP Header Extension for Dynamically Changing Traffic Characteristics Marking* on the application flow in question, as specified in clause 4.5 of TS 26.522 [37]. The value of this parameter is negotiated via the SDP offer/answer procedure during the WebRTC signalling phase of the RTC session.

- longFormat shall be set according to the use of the one- or two-byte *RTP Header Extension for Dynamically Changing Traffic Characteristics Marking*, as specified in clause 4.5.1 of TS 26.522 [37]. The value of this parameter is negotiated via the SDP offer/answer procedure during the WebRTC signalling phase of the RTC session.

If any dynamically changing traffic characteristics marking for data bursts is required by the selected Policy Template (see clause 5.2.7.1 of TS 26.510 [3]), in all PDUs it contributes for media delivery at reference point RTC-4m that fall within the scope of the application flow description, the Media Function of the RTC AS shall use the protocol indicated in *transportProto* and in addition shall behave as follows:

- If data burst size marking is required (i.e., *downlink‌Data‌Burst‌Size‌Marking* is set to *true* in the Policy Template instantiated by the Dynamic Policy Instance), the Media Function of the RTC AS shall include in at least one SRTP header of each downlink data burst it transmits a one- or two-byte (consistent with the signalled length) *RTP Header Extension for Dynamically Changing Traffic Chacteristics Marking* with fields set according to the values declared in the *rtpHeaderExtInfo* property per above and a data burst size indication, *BSize*, per clause 4.5.4 of TS 26.522 [37].

- If time to next burst marking is required (i.e., *downlink‌Time‌To‌Next‌Burst‌Marking* is set to *true* in the Policy Template instantiated by the Dynamic Policy Instance), the Media Function of the RTC AS shall include in at least one SRTP header of each downlink data burst it transmits a one- or two-byte (consistent with the signalled length) *RTP Header Extension for Dynamically Changing Traffic Chacteristics Marking* with fields set according to the values declared in the *rtpHeaderExtInfo* property per above and a time to next burst indication, *TTNB*, per clause 4.5.4 of TS 26.522 [37].

NOTE 1: The frequency and occurrence of *RTP Header Extension for Dynamically Changing Traffic Characteristics* relative to associated dynamically changing traffic characteristics is left to sender implementation. For more details, see guidelines provided in clause 4.5 of TS 26.522 [37].

NOTE 2: Procedures to configure the required RTC AS behaviour via reference point RTC‑3 are not defined in this version of the present document

#### 10.3.X.2 Dynamically changing traffic characteristics marking for expedited data transfers

If dynamically changing traffic characteristics marking for expedited data transfers is required by the selected Policy Template, as specified in clause 5.3.3.2 of TS 26.510 [3] (i.e., downlink‌Expedited‌Transfer‌Indication‌Marking is set to *true* in the policy binding of the Service Access Information), the Media Session Handler shall additionally populate the media‌Transport‌Parameters property of the Application‌Flow‌Description object (see clause 5.5.4.13 of TS 29.571 [36]) as follows when creating or updating a Dynamic Policy Instance based on that Policy Template

- The transportProto property shall be set to the value SRTP.

- The properties of the *RtpHeaderExtInfo* type (see clause 5.5.4.14 of TS 29.571 [36]) as either a rtpHeaderExtInfo object or as an element of the *addRtpHeaderExtInfo* object (see clause 5.5.4.13 of TS 29.571 [36]) shall be populated as follows:

- rtpHeaderExtType shall be set to *DYN\_CHANGING\_TRAFFIC\_CHAR\_ETI*.

Editor’s Note: The addition of a new RtpHeaderExtType enumeration value (e.g., *DYN\_*‌*CHANGING\_*‌*TRAFFIC\_*‌*CHAR\_*‌*ETI)* as part of the Protocol Description corresponding to the *RTP Header Extension for Expedited Transfer Indication Marking* is up to CT4 TS 29.571 specification.

- rtpHeaderExtId shall be set to the value of the *ID* field to be used by the Media Function of an RTC AS in the *RTP Header Extension for Expedited Transfer Indication Marking* on the application flow in question, as specified in clause 4.x of TS 26.522 [37]. The value of this parameter is negotiated via the SDP offer/answer procedure during the WebRTC signalling phase of the RTC session.

- longFormat shall be set according to the use of the one- or two-byte *RTP Header Extension for Expedited Transfer Indication Marking*, as specified in clause 4.x.1 of TS 26.522 [37]. The value of this parameter is negotiated via the SDP offer/answer procedure during the WebRTC signalling phase of the RTC session.

If dynamically changing traffic characteristics marking for expedited data transfers is required by the selected Policy Template (see clause 5.2.7.1 of TS 26.510 [3]), in all PDUs it contributes for media delivery at reference point RTC-4m that fall within the scope of the application flow description, the Media Function of the RTC AS shall use the protocol indicated in *transportProto* and shall include in all SRTP headers of downlink packets a one- or two-byte (consistent with the signalled length) *RTP Header Extension for Dynamically Changing Traffic Chacteristics Marking* with fields set according to the values declared in the *rtpHeaderExtInfo* property per above.

NOTE 1: PDUs contributed within the scope of the application flow description at RTC-4m that cannot be marked (e.g., RTCP, STUN, see clause 4.x.6 of TS 26.522 [37]) are not expedited and can be handled by the 5G System on a default QoS flow depending on the User Plane Function configuration, see TS 29.244 [x1].

NOTE 2: Procedures to configure the required RTC AS behaviour via reference point RTC‑3 are not defined in this version of the present document.

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