**3GPP TSG-SA WG4 Meeting #132 *S4-250881r02***

**Japan, Fukuoka, 19 – 23 May 2025**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **26.510** | **CR** | **0024** | **rev** |  | **Current version:** | **18.3.0** |  |
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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:*** | [iRTCW, 5GMS\_Pro\_Ph2] Correction to Dynamic Policy Instance creation | | | | | | | | | |
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| ***Source to WG:*** | Nokia, Lenovo | | | | | | | | | |
| ***Source to TSG:*** | S4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | iRTCW, 5GMS\_Pro\_Ph2 | | | | |  | ***Date:*** | | | 2025-05-13 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
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| ***Reason for change:*** | | When PDU Set QoS is desired but PDU Set marking is not enabled, a Dynamic Policy invoker needs to indicate the RTP payload information in the media transport parameters that are to be used by the Media Access Function/Media AS for uplink/downlink PDUs.  The RTP payload information contains the list of Payload Type (PT) values in the RTP header of RTP packets the UPF may parse to derive the PDU Set Information and may also contain the RTP payload format. The corresponding data type *RtpPayloadInfo* is defined in TS 29.571 clause 5.5.4.15. | | | | | | | | |
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| ***Summary of change:*** | | Dynamic Policy invoker indicates the RTP payload information in the media transport parameters when PDU Set QoS is desired but PDU Set marking is not enabled. | | | | | | | | |
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| ***Consequences if not approved:*** | | 5GC cannot obtain the PDU Set information from the RTP payload when PDU Set marking is not enabled. | | | | | | | | |
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| ***Clauses affected:*** | | 5.3.3.2 | | | | | | | | |
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|  | | **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:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |
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\* \* \* \* First change \* \* \* \*

#### 5.3.3.2 Create Dynamic Policy Instance resource operation

In order to instantiate a new dynamic policy, the Media Session Handler or Media AS (whichever is acting as Dynamic Policy invoker) shall first create a resource for the Dynamic Policy Instance in the Media AF. The Dynamic Policy invoker shall use the HTTP POST message for this purpose. The body of the HTTP POST message shall be a Dynamic Policy Instance resource representation that includes a Provisioning Session identifier, the resource identifier of the target Policy Template and a set of Service Data Flow descriptions identifying the application flow(s) to be policed.

1. The provisioningSessionId property associates the Dynamic Policy Instance resource with a Provisioning Session.

2. The policyTemplateId property uniquely identifies the Policy Template on which the Dynamic Policy Instance is based.

3. For each application flow to be managed by the Dynamic Policy Instance resource, an instance of the Application‌Flow‌Binding object shall be present in the application‌Flow‌Bindings array. The applicationFlow‌Description property of this object shall be populated by the Dynamic Policy invoker and shall declare a Service Data Flow template according to TS 23.503 [17] that describes application flow in question. Exactly one of the following filtering specifications shall be populated in the Application‌FlowDescription object to identify traffic belonging to a media delivery application flow:

- a packetFilter object (including 5-tuples, Type of Service, Security Parameter Index, etc.). A Media Client shall not attempt to instantiate more than one Dynamic Policy Instance at the same time that cites the same set of packet filters*.*

- a domainName populated with the fully-qualified Internet domain name of a Media AS at reference point M4*.* A Media Client shall not attempt to instantiate more than one Dynamic Policy Instance at the same time that cites the same domainName*.*

In addition, the top-level media type of the application flow may be declared in the mediaType property.

When the policy binding for the chosen Policy Template indicates that PDU Set marking is enabled (i.e., the pduSetMarking flag is set to true in Service Access Information), the Dynamic Policy invoker shall also populate the mediaTransportParameters property with the media transport protocol parameters to be used by the Media Access Function on the application flow in question to label uplink PDUs belonging to the same PDU Set and/or to indicate the last PDU in each PDU Set and/or to indicate the end of a data burst comprising one or more PDU Sets.

When the policy binding for the chosen Policy Template indicates that PDU Set marking is not enabled (i.e., the pduSetMarking flag is set to false in Service Access Information) but specific QoS handling based on PDU Sets is nevertheless desired, the Dynamic Policy invoker shall also populate the mediaTransportParameters property with the media transport protocol parameters to be used by the Media Access Function on the application flow in question to indicate the RTP payload information for uplink PDUs which can be used to derive the PDU Set information.NOTE: RTP payload information includes the RTP payload type and RTP payload format. The corresponding data type RtpPayloadInfo is specified in clause 5.5.4.15 of TS 29.571 [33].

When the policy binding for the chosen Policy Template indicates that PDU Set marking is enabled (i.e., the pduSetMarking flag is set to true in Service Access Information), the Dynamic Policy invoker shall also populate the mediaTransportParameters property with the media transport protocol parameters to be used by the Media AS on the application flow in question to label downlink PDUs belonging to the same PDU Set and/or to indicate the last PDU in each PDU Set and/or to indicate the end of a data burst comprising one or more PDU Sets.

When the policy binding for the chosen Policy Template indicates that PDU Set marking is not required (i.e., the pduSetMarking flag is set to false in Service Access Information) but specific QoS handling based on PDU Sets is nevertheless desired, the Dynamic Policy invoker shall also populate the mediaTransportParameters property with the media transport protocol parameters to be used by the Media AS on the application flow in question to indicate the RTP payload information for downlink PDUs which can be used to derive the PDU Set information.

NOTE: RTP payload information includes the RTP payload type and RTP payload format. The corresponding data type RtpPayloadInfo is specified in clause 5.5.4.15 of TS 29.571 [33].

4. When the Dynamic Policy invoker attempts to activate a QoS-related Policy Template, the qosSpecification property shall also be present in the Application‌Flow‌Binding object containing the following properties specified in clause 7.3.3.6 to describe the QoS requirements of the media application flows described by the bound applicationFlowDescription property:

- downlinkBitRates shall indicate the maximum requested bit rate, minimum desired bit rate and minimum requested bit rate in the downlink direction.

- uplinkBitRates shall indicate the maximum requested bit rate, minimum desired bit rate and minimum requested bit rate in the uplink direction.

- desiredPacketLatency may indicate the desired packet latency in both the downlink and uplink directions.

- desiredPacketLossRate may indicate the desired packet loss rate in both the downlink and uplink directions.

- desiredDownlinkPduSetQosParameters may be populated to indicate the desired delay budget and error rate for PDU Sets in the downlink direction, as well as indicating whether the loss of a single PDU in a PDU Set is significant for the receiving application.

- desiredUplinkPduSetQosParameters may be populated to indicate the desired delay budget and error rate for PDU Sets in the uplink direction, as well as indicating whether the loss of a single PDU in a PDU Set is significant for the receiving application.

5. When the Dynamic Policy invoker instantiates a Policy Template that is provisioned with a Background Data Transfer (BDT) specification per clause 5.2.7.1, the bdtSpecification property shall be present and it shall contain the following properties:

- estimatedDataTransferVolume, indicating the data volume that the Media Client estimates it will use during the current Background Data Transfer time window.

- Each object (see clause 7.3.3.14) conveyed in the windows array indicates a time window over which Background Data Transfers are requested by the Dynamic Policy invoker from those offered in the dynamic policy configuration of the Service Access Information resource (see clause 5.3.2.1).

- Each such window may additionally indicate the maximum bit rate for Background Data Transfers in the downlink and uplink directions that the Dynamic Policy invoker is bidding for in (respectively) the maximimumDownlinkBitRate and maximimumUplinkBitRate properties. In response, the Media AF populates these properties with the maximum permitted bit rate for Background Data Transfers in the downlink and uplink directions respectively when the dynamic policy is in force.

6. When the 5G System employs a traffic enforcement function to ensure that traffic complies with the policy described by the qosSpecification property, the Media AF shall explicitly indicate this in the Dynamic Policy resource representation by setting the qosEnforcement property to true.

If the operation is successful, the Media AF shall create a new Dynamic Policy Instance resource. In this case, the Media AF shall return a 201 (Created) HTTP response message to the Dynamic Policy invoker, and the URL of the newly created Dynamic Policy Instance resource, including its resource identifier, shall be provided as the value of the Location HTTP header field. The response message body shall be a representation of the current state of the Dynamic Policy Instance resource (see clause 9.3.3.1), including any properties assigned by the Media AF.

Upon successful creation of the Dynamic Policy Instance resource, notifications of updates to the resource may be notified asynchronously to the Dynamic Policy invoker:

- If the notificationURL property is present in the Service Access Information, the Dynamic Policy invoker shall subscribe to the MQTT sub-topic corresponding to the resourceId of the Dynamic Policy Instance and shall expect to receive asynchronous notifications published by the Media AF on the MQTT notification channel of type NOTIFICATION\_‌DYNAMIC\_‌POLICY\_‌INSTANCE concerning changes to the Dynamic Policy Instance, including details about new Background Data Transfer opportunities.

- The Media AF shall use the MQTT notification channel signalled in the Service Access Information (if any, see clause 5.3.2.3) to notify the Dynamic Policy invoker subscriber about updates to the Dynamic Policy Instance resource. A notification message of type NOTIFICATION\_‌DYNAMIC\_‌POLICY\_‌INSTANCE shall be published to the MQTT sub-topic corresponding to the resourceId of the Dynamic Policy Instance.

The usage and message formats for the MQTT notification channel are specified in clause 10.2.

When the Dynamic Policy Instance is successfully instantiated, the Media AF triggers the creation of a corresponding PCC rule in the 5G System according to clause 5.5.3 to enforce the required QoS and/or charging policy on the specified application flow(s). Depending on the ApplicationFlowDescription objects in the received Dynamic Policy Instance resource representation and the filterMethod indicated by each one, the Media AF shall populate for each one a flowDescription object and/or provide an Application Identifier referring to a PFD (Packet Flow Description) object containing the domain name of a Media AS instance.

NOTE: When the Media AF is deployed in an external Data Network, it is the responsibility of the NEF to map any external Application Identifier supplied by the Media AF into an internal Application Identifier that is known to the PCF.

If the supplied Dynamic Policy Instance is not acceptable to the Media AF, the create operation shall fail with an HTTP response status code of 400 (Bad Request) and an error message body per clause 7.1.7. In this case, the Dynamic Policy Instance resource shall remain in an uncreated state in the Media AF.

If the request is acceptable but the Media AF forbids the instantiation of the referenced Policy Template, for example because the quota for Background Data Transfers has been exceeded or because the UE is not permitted in the charging specification, the create operation shall fail with an HTTP response status code of 403 (Forbidden) and an error message body per clause 7.1.7. In this case, the Dynamic Policy Instance resource shall remain in an uncreated state in the Media AF.

If the request is acceptable but the Media AF is unable to provision the resources required by the supplied Dynamic Policy Instance, the create operation shall fail with an HTTP response status code of 500 (Internal Server Error) and an error message body per clause 7.1.7. In this case, the Dynamic Policy Instance resource shall remain in an uncreated state in the Media AF.

If the Dynamic Policy invoker needs to instantiate several dynamic policies, it may invoke this operation as often as needed.