**3GPP TSG-S4 Meeting #129e*****S4-241392***

**Electronic, , 19th–23rd August 2024** revision of S4aI240084

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **26.510** | **CR** | **0004** | **rev** | **-** | **Current version:** | **18.0.2** |  |
|  | | | | | | | | |
| *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:*** | [5GMS\_Pro\_Ph2] QoS mapping at N5/N33 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | BBC | | | | | | | | | |
| ***Source to TSG:*** | S4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GMS\_Pro\_Ph2 | | | | |  | ***Date:*** | | | 2024-07-29 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **D** |  | | | | | ***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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
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| ***Reason for change:*** | | The implementation options for mapping Policy Template and Dynamic Policy parameters to the PCF at N5 could be explained better by means of informative examples. | | | | | | | | |
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| ***Summary of change:*** | | Add an informative annex illustrating implementation options. | | | | | | | | |
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| ***Consequences if not approved:*** | | The specification is more difficult for implementers to understand. | | | | | | | | |
| ***Q*** | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.5.1, D (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 26.510 CR0003 | | |
| ***affected:*** | |  | **X** | Test specifications | | | |  | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | dCR [S4aI240084]: Submitted for WG ad hoc endorsement.  CR0004 [S4-241392]: Resubmitted for WG agreement. | | | | | | | | |

First change

### 5.5.1 Overview

Certain features of the Media Delivery System rely on interfaces and APIs that are defined in the 5G Core. The interactions between the Media AF and the Network Functions in the 5GC to support these features are specified in the following clauses.

NOTE: The Media Delivery System architecture may be applied to an EPS although such application is not specified in the present document and is left to the discretion of deployments and implementations.

Illustrative mappings from the Media AF resources and data structures specified in the present document to equivalent resources and data structures in the PCF and NEF are provided in annex D.

Next change

Annex D (informative)  
QoS mappings at reference point N5/N33

# D.1 QoS mappings for Dynamic Policy

## D.1.1 General

This clause presents mappings between the DynamicPolicy resource specified in clause 9.3.3.1 of the present document and the ApplicationSessionContext resource specified at reference point N5 in TS 29.514 [18] (see clause D.1.2 below), as well as with the equivalent AsSessionWithQosSubscription resource specified for use with the NEF at reference point N33 in TS 29.522 [19] and TS 29.122 [20] (see clause D.1.3 below).

The following common aspect apply to all the mappings described in this clause:

1. Each abstract *Application Service* is realised by a *Provisioning Session* in the Media Delivery System when a ProvisioningSession resource is created by the Media Application Provider in the Media AF at reference point M1. The Application Service is uniquely identified in the Media Delivery System by an *external service identifier* which is realised by the externalServiceId property of the ProvisioningSession resource.

2. Each abstract *Service Operation Point* of an Application Service is realised in the Media Delivery System by a *Policy Template* when a PolicyTemplate resource created by the Media Application Provider in the Media AF at reference point M1. The Service Operation Point is uniquely identified in the scope of its parent Provisioning Session by an *external reference* which is realised by the externalReference property of the PolicyTemplate resource.

3. Each abstract *Service Component* of a parent Service Operation Point is realised by a QosEnvelope object in the DynamicPolicy resource. The Service Component is uniquely identified in the scope of its parent Service Operation Point by a *component reference* that is realised by the component‌Reference property of the QosEnvelope object.

The Service Component may reference an existing QoS policy in the PCF by populating the qosReference property of the QosEnvelope resource with the identifier of the existing QoS policy. Alternatively, QoS envelopes for the downlink and uplink directions may instead be specified explicitly using the downlink‌Qos‌Specification and/or uplink‌Qos‌Specification properties.

4. A Policy Template is instantiated when the Media Session Handler creates a DynamicPolicy resource at reference point M5. The Policy Template is identified in the dynamicPolicyId property of the DynamicPolicy resource.

Any number of Dynamic Policy Instances may be associated at the same time with an abstract media delivery session. Each media delivery session is uniquely identified in the Media Delivery System by a *media delivery session identifier* which is cited in the sessionId property of the DynamicPolicy resource.

Each Service Component in the Dynamic Policy Instance is described by an Application‌Flow‌Binding object in the application‌Flow‌Bindings array of the Dynamic‌Policy resource:

a. The applicationFlowDescription property describes the traffic belonging to the Service Component, either in terms of specific protocol header values (e.g. IP 3-tuple, 5-tuple), or else in terms of a domain name.

b. The qosSpecification property specifies the Media Session Handler's QoS requirements for the Service Component in the downlink and/or uplink direction. The QoS requirements are expressed in terms of bit rates as well as targets for packet latency and packet loss.

c. The componentReference property identifies which provisioned QoSEnvelope of the Policy Template (see 3 above) is applicable. This is used by the Media AF to constrain the Media Session Handler's QoS requirements for the Service Component.

The Application Flow Description is used by the 5G Core to construct a downlink Packet Detection Rule (PDR) in the UPF for the Service Component in question and to signal an uplink rule to the UE modem via the control plane.

The Media Session Handler's QoS requirements, as constrained by the QoS envelope of the referenced Policy Template and Service Component, are used by the 5G Core to construct a corresponding QoS Enforcement Rule (QER) in the UPF for the Service Component in question.

## D.1.2 QoS mapping for Dynamic Policy at reference point N5

When the Media AF directly invokes the Npcf\_PolicyAuthorization service at reference point N5 according to TS 29.514 [18], each DynamicPolicy resource is mapped by the Media AF to an Application‌Session‌Context resource in the PCF.

Two alternative implementation options exist for the mapping of the ApplicationFlowBinding object by the Media AF:

1. Each Application‌Flow‌Binding object of the Dynamic Policy Instance (each one representing a distinct Service Component) is associated with a different Media‌Component object in the PCF, as shown in figure D.1.2‑1. A single MediaSubComponent is created to describe the downlink and/or uplink aspects of that Service Component.

2. In the limited case where all Service Components share the same minimum desired bit rate, minimum requested bit rate and PDU Set QoS requirements and none of the QosEnvelope objects cites a qosReference, each Application‌Flow‌Binding object of the Dynamic Policy Instance (each one representing a distinct Service Component) is associated with a different Media‌Sub‌Component object in the PCF, and these all share a common parent Media‌Component object, as shown in figure D.1.2-2.

In both options, the descriptions of the downlink and/or uplink application flow are populated in the fDescs array of the MediaSubComponent unless a qosReference is cited in the corresponding QosEnvelope.

## D.1.3 QoS mapping for Dynamic Policy at reference point N33

When the Media AF invokes the Nnef\_AFsessionWithQoS service at reference point N33 according to TS 29.522 [19] and TS 29.122 [20], each DynamicPolicy resource is mapped by the Media AF to an AsSession‌WithQoS‌Subscription resource in the NEF.

Each Application‌Flow‌Binding object of the Dynamic Policy Instance (each one representing a distinct Service Component) is associated with a different AsSession‌Media‌Component object in the NEF, as shown in figure D.1.3‑1. The qosReference, protoDescDl, protoDescUl, pduSerQosDl and pduSetQosUl properties are not populated in this resource.

The QoS requirements of the Service Component are instead populated in the AsSession‌Media‌Component.

The descriptions of the downlink and/or uplink directions of the application flow corresponding to the Service Component are populated the flowInfos array of the AsSession‌Media‌Component unless a qosReference is cited in the corresponding QosEnvelope.



Figure D.1.2‑1: General case mapping of ApplicationFlowBinding to PCF MediaComponent at reference point N5



Figure D.1.2‑2: Limited case mapping of ApplicationFlowBinding to PCF MediaSubComponent at reference point N5



Figure D.1.3‑1: Mapping of ApplicationFlowBinding to NEF AsSessionMediaComponent at reference point N33

End of changes