**3GPP TSG CT WG3 Meeting #138 *C3-246510***

**Orlando, US, 18 - 22 November, 2024 (revision of *C3-246460*)**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.522** | **CR** | **1426** | **rev** | **2** | **Current version:** | **19.0.0** |  |
|  | | | | | | | | |
| *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 |  | Radio Access Network |  | Core Network | **X** |

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|  | | | | | | | | | | |
| ***Title:*** | Definition of Nnef\_ImsSessionManagement Service | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, Nokia | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NG\_RTC\_Ph2 | | | | |  | ***Date:*** | | | 2024-11-11 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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 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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | S2-2411012 defines a new NEF service that supports the service consumer to create, update and release IMS session.  This CR is to add the definition of Nnef\_ImsSessionManagement service. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add the definition of Nnef\_ImsSessionManagement service | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Does not support stage 2 feature. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 2, 4.1, 4.4.x(new), 5.1, 5.x (new), A.x(new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS/TR 23.502 CR 5087 | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\* \* \* \* First 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".

[2] 3GPP TS 23.502: "Procedures for the 5G system".

[3] 3GPP TS 23.501: "System Architecture for the 5G".

[4] 3GPP TS 29.122: "T8 reference point for northbound Application Programming Interfaces (APIs)".

[5] OpenAPI: "OpenAPI Specification Version 3.0.0", <https://spec.openapis.org/oas/v3.0.0>.

[6] 3GPP TS 33.501: "Security architecture and procedures for 5G System".

[7] 3GPP TS 29.514: "5G System; Policy Authorization Service; Stage 3".

[8] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces; Stage 3".

[9] 3GPP TS 29.521: "5G System; Binding Support Management Service; Stage 3".

[10] Void.

[11] 3GPP TS 23.222: "Common API Framework for 3GPP Northbound APIs; Stage 2".

[12] 3GPP TS 29.222: "Common API Framework for 3GPP Northbound APIs; Stage 3".

[13] IETF RFC 6749: "The OAuth 2.0 Authorization Framework".

[14] 3GPP TS 33.122: "Security Aspects of Common API Framework for 3GPP Northbound APIs".

[15] Void.

[16] Void

[17] 3GPP TS 29.503: "5G System; Unified Data Management Services; Stage 3".

[18] 3GPP TS 29.518: "5G System; Access and Mobility Management Services; Stage 3".

[19] 3GPP TS 29.554: "5G System; Background Data Transfer Policy Control Service; Stage 3".

[20] 3GPP TS 29.504: "5G System; Unified Data Repository Services; Stage 3".

[21] 3GPP TR 21.900: "Technical Specification Group working methods".

[22] 3GPP TS 29.523: "5G System; Policy Control Event Exposure Service; Stage 3".

[23] 3GPP TS 29.519: "5G System; Usage of the Unified Data Repository service for Policy Control Data, Application Data and Structured Data for Exposure; Stage 3".

[24] 3GPP TS 29.541: "5G System; Network Exposure (NE) function services for Non-IP Data Delivery (NIDD) and Short Message Services (SMS); Stage 3".

[25] 3GPP TS 29.542: "5G System, Session management services for Non-IP Data Delivery (NIDD); Stage 3".

[26] 3GPP TS 29.508: "5G System; Session Management Event Exposure Service; Stage 3".

[27] 3GPP TS 29.520: "5G System; Network Data Analytics Services; Stage 3".

[28] 3GPP TS 23.316: "Wireless and wireline convergence access support for the 5G system (5GS)".

[29] 3GPP TS 23.288: "Architecture enhancements for 5G System (5GS) to support network data analytics services".

[30] 3GPP TS 23.032: "Universal Geographical Area Description (GAD)".

[31] Void

[32] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".

[33] 3GPP TS 24.588: "Vehicle-to-Everything (V2X) services in 5G System (5GS); User Equipment (UE) policies; Stage 3".

[34] 3GPP TS 29.572: "5G System; Location Management Services; Stage 3".

[35] 3GPP TS 29.515: "5G System; Gateway Mobile Location Services; Stage 3".

[36] 3GPP TS 23.273: "5G System Location Services (LCS)".

[37] 3GPP TS 33.535: "Authentication and Key Management for Applications (AKMA) based on 3GPP credentials in the 5G System (5GS)".

[38] 3GPP TS 29.535: "5G System; AKMA Anchor Services; Stage 3".

[39] 3GPP TS 33.220: "Generic Authentication Architecture (GAA); Generic Bootstrapping Architecture (GBA)".

[40] IETF RFC 7542: "The Network Access Identifier".

[41] 3GPP TS 29.512: "5G System; Session Management Policy Control Service; Stage 3".

[42] 3GPP TS 23.548: "5G System Enhancements for Edge Computing; Stage 2".

[43] 3GPP TS 29.534: "5G System; Access and Mobility Policy Authorization Service; Stage 3".

[44] IETF RFC 3986: "Uniform Resource Identifier (URI): Generic Syntax".

[45] IEEE Std 1588-2019: "IEEE Standard for a Precision Clock Synchronization Protocol for Networked Measurement and Control".

[46] IEEE Std 802.1AS-2020: "IEEE Standard for Local and metropolitan area networks--Timing and Synchronization for Time-Sensitive Applications".

[47] 3GPP TS 29.536: "5G System; Network Slice Admission Control Services; Stage 3".

[48] 3GPP TS 24.526: "User Equipment (UE) policies for 5G System (5GS); Stage 3".

[49] 3GPP TS 24.555: "Proximity based services (ProSe) in 5G system (5GS); User Equipment (UE) policies; Stage 3".

[50] 3GPP TS 29.565: "5G System; Time Sensitive Communication and Time Synchronization Function Services; Stage 3".

[51] IEEE 802.1Q: "Virtual Bridged Local Area Networks".

[52] 3GPP TS 29.532: "5G System; 5G Multicast-Broadcast Session Management Services; Stage 3".

[53] 3GPP TS 23.247: "Architectural enhancements for 5G multicast-broadcast services; Stage 2".

[54] IETF RFC 6733: "Diameter Base Protocol".

[55] 3GPP TS 23.003: "Numbering, addressing and identification".

[56] 3GPP TS 33.558: "Security aspects of enhancement of support for enabling edge applications; Stage 2".

[57] 3GPP TS 29.510: "Network Function Repository Services; Stage 3".

[58] 3GPP TS 29.517: "5G System; Application Function (AF) event exposure service".

[59] 3GPP TS 26.531: "Data Collection and Reporting; General Description and Architecture".

[60] 3GPP TS 26.532: "Data Collection and Reporting; Protocols and Formats".

[61] 3GPP TS 29.564: "5G System; User Plane Function Services; Stage 3".

[62] 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS)".

[63] 3GPP TS 29.537: "Multicast/Broadcast Policy Control Services; Stage 3".

[64] 3GPP TS 29.214: "Policy and Charging Control over Rx reference point".

[65] 3GPP TS 26.502: "5G multicast–broadcast services; User Service architecture".

[66] 3GPP TS 29.580: "Multicast/Broadcast Service Function Services; Stage 3".

[67] 3GPP TS 26.512: "5G Media Streaming (5GMS); Protocols".

[68] 3GPP TS 29.543: "5G System; Data Transfer Policy Control Services; Stage 3".

[69] 3GPP TS 24.578: "Aircraft-to-Everything (A2X) services in 5G System (5GS); UE policies".

[70] 3GPP TS 23.503: "Policy and Charging Control Framework for the 5G System; Stage 2".

[71] 3GPP TS 26.517: "5G Multicast-Broadcast User Services; Protocols and Formats".

[72] 3GPP TS 24.514: "Ranging based services and sidelink positioning in 5G system(5GS); Stage 3".

[73] 3GPP TS 29.591: "5G System; Network Exposure Function Southbound Services; Stage 3".

[74] 3GPP TS 26.522: "5G Real-time Media Transport Protocol Configurations".

[75] GSMA PRD NG.135, version 3.0: "E2E Network Slicing Requirements".

[76] 3GPP TS 23.586: "Architectural Enhancements to support Ranging based services and Sidelink Positioning".

[78] 3GPP TS 29.175: "IP Multimedia Subsystem (IMS) Application Server (AS) Services Stage 3".

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

## 4.1 Overview

The NEF Northbound interface is between the NEF and the AF. It specifies RESTful/RPC APIs that allow the AF to access the services and capabilities provided by 3GPP network entities and securely exposed by the NEF.

This document also specifies the procedures triggered at the NEF by API requests from the AF and by event notifications received from 3GPP network entities.

The stage 2 level requirements and signalling flows for the NEF Northbound interface are defined in 3GPP TS 23.502 [2], 3GPP TS 23.247 [53] for MBS specific aspects and 3GPP TS 26.531 [59] for data reporting provisioning and Media Streaming Event Exposure specific aspects.

The NEF Northbound interface supports the following procedures:

1) Procedures for Monitoring.

2) Procedures for Device Triggering.

3) Procedures for resource management of Background Data Transfer.

4) Procedures for CP Parameters, Network Configuration Parameters Provisioning, 5G LAN Parameters Provisioning, ACS Configuration Parameter Provisioning, Location Privacy Indication Parameters Provisioning, ECS address provisioning, Slice Parameters Provisioning, DNN and S-NSSAI specific Group Parameters provisioning and Ranging and SideLink Positioning Privacy Indication (RSLPPI) Parameters Provisioning.

5) Procedures for PFD Management.

6) Procedures for Traffic Influence.

7) Procedures for changing the chargeable party at session set up or during the session.

8) Procedures for AF required QoS.

9) Procedures for MSISDN-less Mobile Originated SMS.

10) Procedures for non-IP data delivery.

11) Procedures for analytics information exposure.

12) Procedure for applying BDT policy.

13) Procedures for Enhanced Coverage Restriction Control.

14) Procedures for IPTV Configuration.

15) Procedures for Service Parameter Provisioning.

16) Procedures for RACS Parameter Provisioning.

17) Procedures for Mobile Originated Location Request.

18) Procedures for AKMA.

19) Procedures for AF triggered Access and Mobility Influence.

20) Procedures for AF triggered Access and Mobility Policy Authorization.

21) Procedures for Time Synchronization Exposure.

22) Procedures for EAS Deployment information provisioning.

23) Procedures for TMGI allocation, deallocation, expiry timer refresh and timer expiry notification.

24) Procedures for MBS session management and MBS parameters provisioning.

25) Procedures for Data Reporting.

26) Procedures for Data Reporting Provisioning.

27) Procedures for AF specific UE ID retrieval.

28) Procedures for Media Streaming Event Exposure.

29) Procedures for MBS User Service management.

30) Procedures for MBS User Data Ingest Session management.

31) Procedures for MBS Group Message Delivery management.

32) Procedures for DNAI mapping.

33) Procedures for negotiation of Planned Data Transfer with QoS requirements.

34) Procedures for Member UE Slection Assistance.

37) Procedures for UE Address retrieval.

38) Procedures for ECS Address configuration in roaming.

39) Procedures for IMS session management with data channel.

Which correspond to the following services respectively, supported by the NEF as defined in 3GPP TS 23.502 [2] or 3GPP TS 26.531 [59]:

1) Nnef\_EventExposure service and Nnef\_APISupportCapability service.

2) Nnef\_Trigger service.

3) Nnef\_BDTPNegotiation service.

4) Nnef\_ParameterProvision service.

5) Nnef\_PFDManagement service.

6) Nnef\_TrafficInfluence service.

7) Nnef\_ChargeableParty service.

8) Nnef\_AFsessionWithQoS service and Nnef\_AF\_Request\_for\_QoS service.

9) Nnef\_MSISDN-less\_MO\_SMS service.

10) Nnef\_NIDDConfiguration and Nnef\_NIDD services.

11) Nnef\_AnalyticsExposure service.

12) Nnef\_ApplyPolicy service.

13) Nnef\_ECRestriction service.

14) Nnef\_IPTVConfiguration service.

15) Nnef\_ServiceParameter service.

16) Nnef\_UCMFProvisioning service.

17) Nnef\_Location service.

18) Nnef\_AKMA service.

19) Nnef\_AMInfluence service.

20) Nnef\_AMPolicyAuthorization service.

21) Nnef\_TimeSynchronization and Nnef\_ASTI services.

22) Nnef\_EASDeployment service.

23) Nnef\_MBSTMGI service.

24) Nnef\_MBSSession service.

25) Nnef\_DataReporting service.

26) Nnef\_DataReportingProvisioning service.

27) Nnef\_UEId service.

28) Nnef\_MSEventExposure service.

29) Nnef\_MBSUserService service.

30) Nnef\_MBSUserDataIngestSession service.

31) Nnef\_MBSGroupMsgDelivery service.

32) Nnef\_DNAIMapping service.

33) Nnef\_PDTQPolicyNegotiation service.

34) Nnef\_MemberUESelectionAssistance service.

37) Nnef\_UEAddress service.

38) Nnef\_ECSAddress service.

39) Nnef\_ImsSessionManagement.

NOTE 1: For the Nnef\_PFDManagement service, only the Nnef\_PFDManagement\_Create/Update/Delete service operations are applicable for the NEF Northbound interface.

NOTE 2: For the Nnef\_NIDD service, NF consumer other than the AF does not use the NEF Northbound interface.

NOTE 3: For the Nnef\_NIDDConfiguration service, the Nnef\_NIDDConfiguration\_Trigger service operation is only applicable for the NEF Northbound interface.

NOTE 4: The Nnef\_APISupportCapability service is only applicable in the MonitoringEvent API when the monitoring type is set to "API\_SUPPORT\_CAPABILITY".

NOTE 5: The Nnef\_MSEventExposure service maps to the Nnef\_EventExposure service and is applicable for the case where the event consumer AF in the Application Service Provider is deployed outside the trusted domain, as described in 3GPP TS 26.531 [59], and the subscribed event is set to "MS\_QOE\_METRICS", "MS\_CONSUMPTION", "MS\_NET\_ASSIST\_INVOCATION", "MS\_DYN\_POLICY\_INVOCATION", or "MS\_ACCESS\_ACTIVITY".

NOTE 6: The stage 2 Nnef\_AF\_Request\_for\_QoS API is defined by reusing the Nnef\_AFsessionWithQoS API together with the support of the "GMEC" feature.

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

### 4.4.x Procedures for IMS Session Management

#### 4.4.x.1 General

The procedures are used by an AF to request the creation or release of an IMS session with standalone data channel media and the modification of data channel media in a specific session as described in clause 5.2.6.Y of 3GPP TS 23.502 [2].

NOTE: In this release only session management of IMS data channel is specified.

#### 4.4.x.2 Creation a new IMS session

In order to request the creation of the a new IMS session with standalone data channel media, the AF shall trigger the Nnef\_ImsSessionManagement API by sending a POST request to the NEF targeting the "IMS Sessions" collection resource, with the request body including a representation of the individual IMS session resource (ImsSessionInfo) to be created.

Upon receipt of the corresponding HTTP POST request, the NEF authorizes the request and if the AF is authorized, the NEF shall interact with the IMS AS to create the associated IMS Session by using the Nimsas\_ImsSessionManagement service API of the IMS AS to request the creation of IMS session.

Upon reception of a successful response from the IMS AS and successful processing of the request, the NEF shall create a new "Individual IMS Session" resource and respond to the AF with an HTTP status code "201 Created" including a newly created "Individual IMS Session" resource within the ImsSessionInfo data structure. Upon reception of an error response from the IMS AS, the NEF shall not create the resource and shall respond to the AF with a proper error status code. If the NEF received within an error response a ProblemDetails structure with the "cause" attribute indicating an application errors, the NEF shall reply this error response to the AF with an acoordingly application error.

#### 4.4.x.3 Modification of an existing IMS session

In order to modify the data channel media within a specific session, the AF shall trigger the Nnef\_ImsSessionManagement API by sending a PATCH request to the "Individual IMS Session" resource by including an "add", "remove" or "replace" PATCH operation respectively, with one item of the attribute "mediaInfoSet" of the ImsSessionInfo.

Upon receipt of the corresponding HTTP PATCH request, the NEF authorizes the request and if the AF is authorized, the NEF shall interact with the IMS AS to update the associated IMS session by using the Nimsas\_ImsSessionManagement service.

Upon reception of a successful response from the IMS AS and successful processing of the request, the NEF shall update the "Individual IMS Session" resource and respond to the AF with an HTTP status code "200 OK" including the updated "Individual IMS Session" resource within the ImsSessionInfo data structure or 204 "No Content". Upon reception of an error response from the IMS AS, the NEF shall not update the resource and shall respond to the AF with a proper error status code. If the NEF received within an error response a ProblemDetails structure with the "cause" attribute indicating an application errors, the NEF shall reply this error response to the AF with an acoordingly application error.

#### 4.4.x.3 Release an existing IMS session

In order to release an existing IMS session, the AF shall send an HTTP DELETE request to the NEF to the targeting the "Individual IMS Session" resource.

The NEF shall interact with IMS AS by invoking the Nimsas\_ImsSessionManagement service to release the IMS session in IMS AS.

Upon reception of a successful response from the IMS AS and successful processing of the request, the NEF shall delete the "Individual IMS Session" resource and respond to the AF with an HTTP status code 204 "No Content". Upon reception of an error response from the IMS AS, the NEF shall not delete the resource and shall respond to the AF with a proper error status code. If the NEF received within an error response a ProblemDetails structure with the "cause" attribute indicating an application errors, the NEF shall reply this error response to the AF with an acoordingly application error.

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

## 5.1 Introduction

The NEF Northbound APIs are a set of APIs defining the related procedures and resources for the interaction between the NEF and the AF.

Tables 5.1-1 summarizes the APIs defined in this specification.

Table 5.1-1: API Descriptions

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Service Name | Clause defined | Description | OpenAPI Specification File | API Name | Annex |
| TrafficInfluence | 5.4 | Traffic Influence API | TS29522\_TrafficInfluence.yaml | 3gpp-traffic-influence | A.2 |
| NiddConfigurationTrigger | 5.5 | NIDD (Non-IP Data Delivery) Configuration Trigger API | TS29522\_NiddConfigurationTrigger.yaml | 3gpp-nidd-configuration-trigger | A.3 |
| AnalyticsExposure | 5.6 | Analytics Exposure API | TS29522\_AnalyticsExposure.yaml | 3gpp-analyticsexposure | A.4 |
| 5GLANParameterProvision | 5.7 | 5G LAN Parameter Provision API | TS29522\_5GLANParameterProvision.yaml | 3gpp-5glan-pp | A.5 |
| ApplyingBdtPolicy | 5.8 | Applying BDT Policy API | TS29522\_ApplyingBdtPolicy.yaml | 3gpp-applying-bdt-policy | A.6 |
| IPTVConfiguration | 5.9 | IPTV Configuration API | TS29522\_IPTVConfiguration.yaml | 3gpp-iptvconfiguration | A.7 |
| LpiParameterProvision | 5.10 | LPI (Location Privacy Indicator) Parameter Provision API | TS29522\_LpiParameterProvision.yaml | 3gpp-lpi-pp | A.8 |
| ServiceParameter | 5.11 | Service Parameter API | TS29522\_ServiceParameter.yaml | 3gpp-service-parameter | A.9 |
| ACSParameterProvision | 5.12 | ACS Parameter Provision API | TS29522\_ACSParameterProvision.yaml | 3gpp-acs-pp | A.10 |
| MoLcsNotify | 5.13 | MO LCS Notify API | TS29522\_MoLcsNotify.yaml | 3gpp-mo-lcs-notify | A.11 |
| AKMA | 5.14 | AKMA API | TS29522\_AKMA.yaml | 3gpp-akma | A.12 |
| TimeSyncExposure | 5.15 | Time Sync Exposure API | TS29522\_TimeSyncExposure.yaml | 3gpp-time-sync-exposure | A.13 |
| EcsAddressProvision | 5.16 | ECS Address Provision API | TS29522\_EcsAddressProvision.yaml | 3gpp-ecs-address-provision | A.14 |
| AMPolicyAuthorization | 5.17 | AM Policy Authorization API | TS29522\_AMPolicyAuthorization.yaml | 3gpp-am-policyauthorization | A.15 |
| AMInfluence | 5.18 | AM Influence API | TS29522\_AMInfluence.yaml | 3gpp-am-influence | A.16 |
| MBSTMGI | 5.19 | MBS TMGI API | TS29522\_MBSTMGI.yaml | 3gpp-mbs-tmgi | A.17 |
| MBSSession | 5.20 | MBS Session API | TS29522\_MBSSession.yaml | 3gpp-mbs-session | A.18 |
| EASDeployment | 5.21 | EAS Deployment API | TS29522\_EASDeployment.yaml | 3gpp-eas-deployment | A.19 |
| ASTI | 5.22 | ASTI API | TS29522\_ASTI.yaml | 3gpp-asti | A.20 |
| DataReporting | 5.23 | DataReporting API | TS29522\_DataReporting.yaml | 3gpp-data-reporting | A.21 |
| DataReportingProvisioning | 5.24 | DataReportingProvisioning API | TS29522\_DataReportingProvisioning.yaml | 3gpp-data-reporting-provisioning | A.22 |
| UEId | 5.25 | UE ID API | TS29522\_UEId.yaml | 3gpp-ueid | A.23 |
| MBSUserService | 5.26 | MBSUserService API | TS29522\_MBSUserService.yaml | 3gpp-mb-us | A.24 |
| MBSUserDataIngestSession | 5.27 | MBSUserDataIngestSession API | TS29522\_MBSUserDataIngestSession.yaml | 3gpp-mb-ud-ingest | A.25 |
| MSEventExposure | 5.28 | MSEventExposure API | TS29522\_MSEventExposure.yaml | 3gpp-event-exposure | A.26 |
| MBSGroupMsgDelivery | 5.29 | MBSGroupMsgDelivery API | TS29522\_MBSGroupMsgDelivery.yaml | 3gpp-mbs-group-msg | A.27 |
| DNAIMapping | 5.30 | DNAIMapping API | TS29522\_DNAIMapping.yaml | 3gpp-dnai-mapping | A.28 |
| PDTQPolicyNegotiation | 5.31 | PDTQPolicyNegotiation API | TS29522\_PDTQPolicyNegotiation.yaml | 3gpp-pdtq-policy-negotiation | A.29 |
| MemberUESelectionAssistance | 5.32 | MemberUESelectionAssistance API | TS29522\_MemberUESelectionAssistance.yaml | 3gpp-musa | A.30 |
| GroupParametersProvisioning | 5.33 | Group Parameters Provisioning API | TS29.522\_GroupParametersProvisioning.yaml | 3gpp-grp-pp | A.31 |
| SliceParamProvision | 5.34 | Network Slice Parameters Provisioning API | TS29.522\_SliceParamProvision.yaml | 3gpp-slice-pp | A.32 |
| UEAddress | 5.35 | UE Address API | TS29522\_UEAddress.yaml | 3gpp-ue-address | A.33 |
| ECSAddress | 5.36 | ECS Address Configuration Information API | TS29522\_ECSAddress.yaml | 3gpp-ecs-address | A.34 |
| RSLPPIParametersProvisioning | 5.37 | RSLPPI Parameters Provisioning API | TS29522\_RSLPPIParametersProvisioning.yaml | 3gpp-rslppi-pp | A.35 |
| ImsSessionManagement | 5.x | ImsSessionMangement API | TS29522\_ImsSessionManagement.yaml | 3gpp-ims session management | A.x |

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

## 5.x ImsSessionManagement API

### 5.x.1 Introduction

The Nnef\_ImsSessionManagement service shall use the Nnef\_ImsSessionManagement API.

The API URI of the Nnef\_ImsSessionManagement API shall be:

**{apiRoot}/<apiName>/<apiVersion>**

The request URIs used in HTTP requests from the NF service consumer towards the NF service producer shall have the Resource URI structure defined in clause 5.2.4 of 3GPP TS 29.122 [4], i.e.:

**{apiRoot}/<apiName>/<apiVersion>/<apiSpecificResourceUriPart>**

with the following components:

- The {apiRoot} shall be set as described in clause 5.2.4 of 3GPP TS 29.122 [4].

- The <apiName> shall be "3gpp-ims-session-management".

- The <apiVersion> shall be "v1".

- The <apiSpecificResourceUriPart> shall be set as described in clause 5.2.4 of 3GPP TS 29.122 [4].

All resource URIs in the clauses below are defined relative to the above API URI.

### 5.x.2 Resources

#### 5.x.2.1 Overview

This clause describes the structure for the Resource URIs and the resources and methods used for the service.

Figure 5.x.2.1-1 depicts the resource URIs structure for the Nnef\_ImsSessionManagement service API.



Figure 5.x.2.1-1: Resource URI structure of the ImsSessionManagement API

Table 5.x.2.1-1 provides an overview of the resources and applicable HTTP methods.

Table 5.x.2.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource purpose/name | Resource URI (relative path after API URI) | HTTP method or custom operation | Description (service operation) |
| IMS Sessions (Collection) | /ims-sessions | POST | Creates a new Individual IMS Session resource. |
| Individual IMS Session (Document) | /ims-sessions/{sessionId} | PATCH | Updates an existing Individual IMS Session resource identified by {sessionId}. |
| DELETE | Delete an existing Individual IMS Session resource identified by {sessionId}. |

#### 5.x.2.2 Resource: IMS Sessions

##### 5.x.2.2.1 Description

The IMS Sessions Collection resource represents a collection of IMS Sessions created by AF managed by the NEF. The resource is modelled as Collection resource archetype (see clause C.2 of 3GPP TS 29.501 [32]).

##### 5.x.2.2.2 Resource Definition

Resource URI: **{apiRoot}/3gpp-ims-session-management/<apiVersion>/ims-sessions**

This resource shall support the resource URI variables defined in table 5.x.2.2.2-1.

Table 5.x.2.2.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| apiRoot | string | See clause 5.x.1 |

##### 5.x.2.2.3 Resource Standard Methods

5.x.2.2.3.1 POST

This method shall support the URI query parameters specified in table 5.x.2.2.3.1-1.

Table 5.x.2.2.3.1-1: URI query parameters supported by the POST method on this resource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description | Applicability |
| n/a |  |  |  |  |  |

This method shall support the request data structures specified in table 5.x.2.2.3.1-2 and the response data structures and response codes specified in table 5.x.2.2.3.1-3.

Table 5.x.2.2.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| ImsSessionInfo | M | 1 | Creates a new Individual IMS Session resource |

Table 5.x.2.2.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| ImsSessionInfo | M | 1 | 201 Created | Successful response  The "Individual IMS Session" resource is successfully created and a representation of the updated resource is returned in the response body.  The URI of the created resource shall be returned in an HTTP "Location" header. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative target URI of the resource located in an alternative NEF.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection. (NOTE 2) |
| NOTE: The manadatory HTTP error status code for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] also apply. | | | | |

Table 5.x.2.2.3.1-4: Headers supported by the 201 response code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains the URI of the newly created resource, according to the structure: {apiRoot}/3gpp-ims-session-management/<apiVersion>/ims-sessions/{sessionId}. |

Table 5.x.2.2.3.1-5: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located on an alternative NEF. |

Table 5.x.2.2.3.1-6: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located on an alternative NEF. |

#### 5.x.2.3 Resource: Individual IMS Session

##### 5.x.2.3.1 Description

The Individual IMS Session resource represents an individual IMS session managed by the NEF. This resource is modelled as the Document resource archetype (see clause C.1 of 3GPP TS 29.501 [32]).

##### 5.x.2.3.2 Resource Definition

Resource URI: **{apiRoot}/3gpp-ims-session-management/<apiVersion>/ims-sessions/{sessionId}**

The <apiVersion> shall be set as described in clause 5.x.1.

This resource shall support the resource URI variables defined in table 5.x.2.3.2-1.

Table 5.x.2.3.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| apiRoot | string | See clause 5.x.1. |
| sessionId | string | Identifies an individual IMS session. |

##### 5.x.2.3.3 Resource Standard Methods

5.x.2.3.3.1 PATCH

This method shall support the URI query parameters specified in table 5.x.2.3.3.1-1.

Table 5.x.2.3.3.1-1: URI query parameters supported by the PATCH method on this resource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description | Applicability |
| n/a |  |  |  |  |  |

This method shall support the request data structures specified in table 5.x.2.3.3.1-2 and the response data structures and response codes specified in table 5.x.2.3.3.1-3.

Table 5.x.2.3.3.1-2: Data structures supported by the PATCH Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| array(PatchItem) | M | 1..N | Document describes the modification(s) to an Individual IMS Session resource. |

Table 5.x.2.3.3.1-3: Data structures supported by the PATCH Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| ImsSessionInfo | M | 1..N | 200 OK | Successful response  The "Individual IMS Session" resource is successfully updated and a representation of the updated resource is returned in the response body. |
| n/a |  |  | 204 No Content | Successful response  The "Individual IMS Session" resource is successfully updated and no content is returned in the response body. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative target URI of the resource located in an alternative NEF.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.  The response shall include a Location header field containing an alternative target URI of the resource located in an alternative NEF.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| ProblemDetails | O | 0..1 | 404 Not Found | Indicates the modification of IMS session has failed due to application error.  The "cause" attribute may be used to indicate one of the following application errors:  - SESSION\_NOT\_FOUND |
| NOTE 1: The manadatory HTTP error status code for the PATCH method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] shall also apply. | | | | |

Table 5.x.2.3.3.1-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located on an alternative NEF. |

Table 5.x.2.3.3.1-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located on an alternative NEF. |

5.x.2.3.3.2 DELETE

This method shall support the URI query parameters specified in table 5.x.2.3.3.2-1.

Table 5.x.2.3.3.2-1: URI query parameters supported by the DELETE method on this resource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description | Applicability |
| n/a |  |  |  |  |  |

This method shall support the request data structures specified in table 5.x.2.3.3.2-2 and the response data structures and response codes specified in table 5.x.2.3.3.2-3.

Table 5.x.2.3.3.2-2: Data structures supported by the DELETE Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| n/a |  |  |  |

Table 5.x.2.3.3.2-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| n/a |  |  | 204 No content | Successful response. The "Individual IMS Session" resource is successfully deleted. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative target URI of the resource located in an alternative NEF.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.  The response shall include a Location header field containing an alternative target URI of the resource located in an alternative NEF.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| Problem Details | O | 0..1 | 404 Not Found | Indicates the deletion of the IMS session has failed due to application error.  The "cause" attribute may be used to indicate one of the following application errors:  - SESSION\_NOT\_FOUND |
| NOTE 1: The manadatory HTTP error status code for the DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] shall also apply. | | | | |

Table 5.x.2.3.3.2-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located on an alternative NEF. |

Table 5.x.2.3.3.2-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located on an alternative NEF. |

### 5.x.3 Custom Operations without associated resources

None in this release of specification.

### 5.x.4 Notifications

None in this release of specification.

### 5.x.5 Data Model

#### 5.x.5.1 General

This clause specifies the application data model supported by the API.

Table 5.x.5.1-1 specifies the data types defined for the Nnef\_ImsSessionManagement service based interface protocol.

Table 5.x.5.1-1: Nnef\_ImsSessionManagement specific Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Clause defined | Description |
| n/a |  |  |

Table 5.x.5.1-2 specifies data types re-used by the Nnef\_ImsSessionManagement service based interface protocol from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the Nnef\_ImsSessionManagement service based interface.

Table 5.x.5.1-2: Nnef\_ImsSessionManagement re-used Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Reference | Comments |
| ProblemDetails | 3GPP TS 29.122 [4] | Represents error related information. |
| ImsSessionInfo | 3GPP TS 29.175 [78] | Represents the information of an IMS session. |
| PatchItem | 3GPP TS 29.571 [8] | Represents the requested modifications to a resource via the PATCH method. |

Editor’s Note: The data mdodel of Nnef\_ImsSessionManagement is FFS.

### 5.x.6 Used Features

The table below defines the features applicable to the ImsSessionManagement API. Those features are negotiated as described in clause 5.2.7 of 3GPP TS 29.122 [4].

Table 5.x.6-1: Supported Features

|  |  |  |
| --- | --- | --- |
| Feature number | Feature Name | Description |
|  |  |  |

### 5.x.7 Error Handling

#### 5.x.7.1 General

HTTP error handling shall be supported as specified in clause 5.2.6 of 3GPP TS 29.122 [4]. In addition, the requirements in the following clauses shall apply.

#### 5.x.7.2 Protocol Errors

No specific procedures for the Nnef\_ImsSessionManagement service are specified.

#### 5.x.7.3 Application Errors

The application errors defined for the Nnef\_ImsSessionManagement service are listed in Table 5.x.7.3-1.

Table 5.x.7.3-1: Application errors

|  |  |  |
| --- | --- | --- |
| Application Error | HTTP status code | Description |
|  |  |  |

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

# A.x ImsSessionManagement API

Editor’s Note: The OpenAPI of ImsSessionManagement is FFS.

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