

ETSI TS 129 503 V16.16.0 (2023-07)



**5G;
5G System;
Unified Data Management Services;
Stage 3
(3GPP TS 29.503 version 16.16.0 Release 16)**

<https://standards.iteh.ai/catalog/standards/sist/69bf4169-48f2-48ef-9b08-701ea7db3566/etsi-ts-129-503-v16-16-0-2023-07>



ReferenceRTS/TSGC-0429503vvg0

Keywords5G

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - APE 7112B
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° w061004871

Important notice

The present document can be downloaded from:

<https://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the prevailing version of an ETSI deliverable is the one made publicly available in PDF format at www.etsi.org/deliver.

Users of the present document should be aware that the document may be subject to revision or change of status.

Information on the current status of this and other ETSI documents is available at

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:

<https://standards-portal.etsi.org/People/CommitteeSupportStaff.aspx>

If you find a security vulnerability in the present document, please report it through our

Coordinated Vulnerability Disclosure Program:

<https://www.etsi.org/standards/coordinated-vulnerability-disclosure>

Notice of disclaimer & limitation of liability

The information provided in the present deliverable is directed solely to professionals who have the appropriate degree of experience to understand and interpret its content in accordance with generally accepted engineering or other professional standard and applicable regulations.

No recommendation as to products and services or vendors is made or should be implied.

No representation or warranty is made that this deliverable is technically accurate or sufficient or conforms to any law and/or governmental rule and/or regulation and further, no representation or warranty is made of merchantability or fitness for any particular purpose or against infringement of intellectual property rights.

In no event shall ETSI be held liable for loss of profits or any other incidental or consequential damages.

Any software contained in this deliverable is provided "AS IS" with no warranties, express or implied, including but not limited to, the warranties of merchantability, fitness for a particular purpose and non-infringement of intellectual property rights and ETSI shall not be held liable in any event for any damages whatsoever (including, without limitation, damages for loss of profits, business interruption, loss of information, or any other pecuniary loss) arising out of or related to the use of or inability to use the software.

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2023.
All rights reserved.

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org/>).

Pursuant to the ETSI Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™** and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners. **GSM®** and the GSM logo are trademarks registered and owned by the GSM Association.

Legal Notice

This Technical Specification (TS) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities. These shall be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between 3GPP and ETSI identities can be found under <https://webapp.etsi.org/key/queryform.asp>.

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Contents

Intellectual Property Rights	2
Legal Notice	2
Modal verbs terminology.....	2
Foreword.....	16
1 Scope	18
2 References	18
3 Definitions and abbreviations.....	20
3.1 Definitions	20
3.2 Abbreviations	20
4 Overview	21
4.1 Introduction	21
5 Services offered by the UDM.....	22
5.1 Introduction	22
5.2 Nudm_SubscriberDataManagement Service.....	23
5.2.1 Service Description.....	23
5.2.2 Service Operations	23
5.2.2.1 Introduction	23
5.2.2.2 Get.....	23
5.2.2.2.1 General	23
5.2.2.2.2 Slice Selection Subscription Data Retrieval	24
5.2.2.2.3 Access and Mobility Subscription Data Retrieval	25
5.2.2.2.4 SMF Selection Subscription Data Retrieval	26
5.2.2.2.5 Session Management Subscription Data Retrieval	26
5.2.2.2.6 SMS Subscription Data Retrieval	27
5.2.2.2.7 SMS Management Subscription Data Retrieval	28
5.2.2.2.8 UE Context In SMF Data Retrieval	28
5.2.2.2.9 Retrieval Of Multiple Data Sets	29
5.2.2.2.10 Identifier Translation	29
5.2.2.2.11 Shared Subscription Data Retrieval.....	30
5.2.2.2.12 UE Context In SMSF Data Retrieval.....	30
5.2.2.2.13 Trace data Retrieval.....	31
5.2.2.2.14 Group Identifier Translation	31
5.2.2.2.15 LCS Privacy Data Retrieval	32
5.2.2.2.16 LCS Mobile Originated Data Retrieval	33
5.2.2.2.17 Enhanced Coverage Restriction Data Retrieval.....	33
5.2.2.2.18 V2X Subscription Data Retrieval	34
5.2.2.2.19 LCS Broadcast Assistance Subscription Data Retrieval.....	34
5.2.2.2.20 UE Context In AMF Data Retrieval	35
5.2.2.2.21 Individual Shared Subscription Data Retrieval	35
5.2.2.3 Subscribe	36
5.2.2.3.1 General	36
5.2.2.3.2 Subscription to notifications of data change.....	36
5.2.2.3.3 Subscription to notifications of shared data change	36
5.2.2.4 Unsubscribe.....	37
5.2.2.4.1 General	37
5.2.2.4.2 Unsubscribe to notifications of data change	37
5.2.2.4.3 Unsubscribe to notifications of shared data change.....	38
5.2.2.5 Notification	38
5.2.2.5.1 General	38
5.2.2.5.2 Data Change Notification To NF.....	38
5.2.2.6 Info	39
5.2.2.6.1 General	39
5.2.2.6.2 Providing acknowledgement of Steering of Roaming.....	40

5.2.2.6.3	Providing acknowledgement of UE parameters update	40
5.2.2.6.4	Providing acknowledgement of UE for Network Slicing Subscription Change	41
5.2.2.6.5	Providing acknowledgement of UE for CAG configuration change	41
5.2.2.6.6	Triggering Update of Steering Of Roaming information	41
5.2.2.7	ModifySubscription	42
5.2.2.7.1	General	42
5.2.2.7.2	Modification of a subscription to notifications of data change	42
5.2.2.7.3	Modification of a subscription to notifications of shared data change	43
5.3	Nudm_UEContextManagement Service	43
5.3.1	Service Description	43
5.3.2	Service Operations	43
5.3.2.1	Introduction	43
5.3.2.2	Registration	44
5.3.2.2.1	General	44
5.3.2.2.2	AMF registration for 3GPP access	45
5.3.2.2.3	AMF registration for non 3GPP access	45
5.3.2.2.4	SMF registration	46
5.3.2.2.5	SMSF Registration for 3GPP Access	47
5.3.2.2.6	SMSF Registration for Non 3GPP Access	47
5.3.2.2.7	IP-SM-GW registration	48
5.3.2.3	DeregistrationNotification	49
5.3.2.3.1	General	49
5.3.2.3.2	UDM initiated NF Deregistration	49
5.3.2.4	Deregistration	49
5.3.2.4.1	General	49
5.3.2.4.2	AMF deregistration for 3GPP access	50
5.3.2.4.3	AMF deregistration for non-3GPP access	50
5.3.2.4.4	SMF deregistration	51
5.3.2.4.5	SMSF Deregistration for 3GPP Access	51
5.3.2.4.6	SMSF Deregistration for Non 3GPP Access	52
5.3.2.4.7	IP-SM-GW deregistration	52
5.3.2.5	Get	52
5.3.2.5.1	General	52
5.3.2.5.2	Amf3GppAccessRegistration Information Retrieval	53
5.3.2.5.3	AmfNon3GppAccessRegistration Information Retrieval	53
5.3.2.5.4	Void	54
5.3.2.5.5	SmsfRegistration Information Retrieval for 3GPP Access	54
5.3.2.5.6	SmsfRegistration Information Retrieval for Non-3GPP Access	54
5.3.2.5.7	SmfRegistration Information Retrieval	55
5.3.2.5.8	Individual SmfRegistration Information Retrieval	55
5.3.2.5.9	Location Information Retrieval	56
5.3.2.5.10	Retrieval Of Multiple UE Registration Data Sets	57
5.3.2.5.11	IP-SM-GW Registration Information Retrieval	57
5.3.2.6	Update	57
5.3.2.6.1	General	57
5.3.2.6.2	Update A Parameter (e.g. PEI) in the AMF Registration For 3GPP Access	58
5.3.2.6.3	Update A Parameter (e.g. PEI) in the AMF Registration For Non 3GPP Access	58
5.3.2.7	P-CSCF-RestorationNotification	59
5.3.2.7.1	General	59
5.3.2.7.2	UDM initiated P-CSCF-Restoration	59
5.3.2.8	P-CSCF-RestorationTrigger	59
5.3.2.8.1	General	59
5.3.2.8.2	P-CSCF-RestorationTrigger	59
5.3.2.9	AMFDeregistration	60
5.3.2.9.1	General	60
5.3.2.9.2	AMF-Deregistration	60
5.3.2.10	PEI-Update	61
5.3.2.10.1	General	61
5.3.2.10.2	PEI Update	61
5.4	Nudm_UEAuthentication Service	61
5.4.1	Service Description	61
5.4.2	Service Operations	61

5.4.2.1	Introduction	61
5.4.2.2	Get	62
5.4.2.2.1	General	62
5.4.2.2.2	Authentication Information Retrieval	62
5.4.2.2.3	FN-RG Authentication	63
5.4.2.3	ResultConfirmationInform	63
5.4.2.3.1	General	63
5.4.2.3.2	Authentication Confirmation	63
5.4.2.3.3	Authentication Result Removal	64
5.4.2.4	GetHssAv	64
5.4.2.4.1	General	64
5.4.2.4.2	HSS Authentication Vector Retrieval	65
5.5	Nudm_EventExposure Service	65
5.5.1	Service Description	65
5.5.2	Service Operations	65
5.5.2.1	Introduction	65
5.5.2.2	Subscribe	66
5.5.2.2.1	General	66
5.5.2.2.2	Subscription to Notification of event occurrence	66
5.5.2.2.3	Void	67
5.5.2.3	Unsubscribe	67
5.5.2.3.1	General	67
5.5.2.3.2	Unsubscribe to notifications of event occurrence	68
5.5.2.4	Notify	68
5.5.2.4.1	General	68
5.5.2.4.2	Event Occurrence Notification	68
5.5.2.5	ModifySubscription	69
5.5.2.5.1	General	69
5.5.2.5.2	Modification of a subscription	69
5.6	Nudm_ParameterProvision Service	69
5.6.1	Service Description	69
5.6.2	Service Operations	70
5.6.2.1	Introduction	70
5.6.2.2	Update	70
5.6.2.2.1	General	70
5.6.2.2.2	Subscription data update	70
5.6.2.2.3	5G VN Group modification	71
5.6.2.2.4	SoR Information update	71
5.6.2.3	Create	72
5.6.2.3.1	General	72
5.6.2.3.2	5G-VN-Group creation	72
5.6.2.4	Delete	73
5.6.2.4.1	General	73
5.6.2.4.2	5G-VN-Group deletion	73
5.6.2.5	Get	73
5.6.2.5.1	General	73
5.6.2.5.2	5G-VN-Group get	74
5.7	Nudm_NIDDAuthorization Service	74
5.7.1	Service Description	74
5.7.2	Service Operations	74
5.7.2.1	Introduction	74
5.7.2.2	Get	75
5.7.2.2.1	General	75
5.7.2.2.2	NIDD Authorization Data Retrieval	75
5.7.2.3	Notification	75
5.7.2.3.1	General	75
5.7.2.3.2	NIDD Authorization Data Update Notification	76
5.8	Nudm_MT Service	76
5.8.1	Service Description	76
5.8.2	Service Operations	76
5.8.2.1	Introduction	76
5.8.2.2	ProvideUeInfo	77

5.8.2.2.1	General	77
5.8.2.2.2	UE Information Retrieval	77
5.8.2.3	ProvideLocationInfo	77
5.8.2.3.1	General	77
5.8.2.3.2	Network Provided Location Information Request	77
6	API Definitions	78
6.1	Nudm_SubscriberDataManagement Service API	78
6.1.1	API URI	78
6.1.2	Usage of HTTP	78
6.1.2.1	General	78
6.1.2.2	HTTP standard headers	79
6.1.2.2.1	General	79
6.1.2.2.2	Content type	79
6.1.2.2.3	Cache-Control	79
6.1.2.2.4	ETag	79
6.1.2.2.5	If-None-Match	79
6.1.2.2.6	Last-Modified	79
6.1.2.2.7	If-Modified-Since	79
6.1.2.2.8	When to Use Entity-Tags and Last-Modified Dates	79
6.1.2.3	HTTP custom headers	80
6.1.2.3.1	General	80
6.1.3	Resources	80
6.1.3.1	Overview	80
6.1.3.2	Resource: Nssai (Document)	84
6.1.3.2.1	Description	84
6.1.3.2.2	Resource Definition	84
6.1.3.2.3	Resource Standard Methods	84
6.1.3.3	Resource: SdmSubscriptions (Collection)	85
6.1.3.3.1	Description	85
6.1.3.3.2	Resource Definition	85
6.1.3.3.3	Resource Standard Methods	86
6.1.3.4	Resource: Individual subscription (Document)	87
6.1.3.4.1	Description	87
6.1.3.4.2	Resource Definition	87
6.1.3.4.3	Resource Standard Methods	87
6.1.3.5	Resource: AccessAndMobilitySubscriptionData (Document)	88
6.1.3.5.1	Description	88
6.1.3.5.2	Resource Definition	88
6.1.3.5.3	Resource Standard Methods	89
6.1.3.5.4	Resource Custom Operations	90
6.1.3.6	Resource: SmfSelectionSubscriptionData (Document)	91
6.1.3.6.1	Description	91
6.1.3.6.2	Resource Definition	91
6.1.3.6.3	Resource Standard Methods	91
6.1.3.7	Resource: UeContextInSmfData (Document)	92
6.1.3.7.1	Description	92
6.1.3.7.2	Resource Definition	92
6.1.3.7.3	Resource Standard Methods	92
6.1.3.8	Resource: SessionManagementSubscriptionData (Document)	93
6.1.3.8.1	Description	93
6.1.3.8.2	Resource Definition	93
6.1.3.8.3	Resource Standard Methods	93
6.1.3.9	Resource: SMSSubscriptionData (Document)	95
6.1.3.9.1	Description	95
6.1.3.9.2	Resource Definition	95
6.1.3.9.3	Resource Standard Methods	95
6.1.3.10	Resource: SMSManagementSubscriptionData (Document)	96
6.1.3.10.1	Description	96
6.1.3.10.2	Resource Definition	96
6.1.3.10.3	Resource Standard Methods	97
6.1.3.11	Resource: Supi (Document)	97

6.1.3.11.1	Description	97
6.1.3.11.2	Resource Definition.....	98
6.1.3.11.3	Resource Standard Methods	98
6.1.3.12	Resource: IdTranslationResult (Document)	99
6.1.3.12.1	Description	99
6.1.3.12.2	Resource Definition.....	99
6.1.3.12.3	Resource Standard Methods	99
6.1.3.13	Resource: SorAck (Document)	100
6.1.3.13.1	Description	100
6.1.3.13.2	Resource Definition.....	100
6.1.3.13.3	Resource Standard Methods	101
6.1.3.14	Resource: TraceData (Document)	101
6.1.3.14.1	Description	101
6.1.3.14.2	Resource Definition.....	101
6.1.3.14.3	Resource Standard Methods	101
6.1.3.15	Resource: SharedData (Collection)	102
6.1.3.15.1	Description	102
6.1.3.15.2	Resource Definition.....	103
6.1.3.15.3	Resource Standard Methods	103
6.1.3.16	Resource: SharedDataSubscriptions (Collection)	104
6.1.3.16.1	Description	104
6.1.3.16.2	Resource Definition.....	104
6.1.3.16.3	Resource Standard Methods	104
6.1.3.17	Resource: Individual subscription (Document).....	105
6.1.3.17.1	Description	105
6.1.3.17.2	Resource Definition.....	105
6.1.3.17.3	Resource Standard Methods	105
6.1.3.18	Resource: UeContextInSmsfData (Document)	107
6.1.3.18.1	Description	107
6.1.3.18.2	Resource Definition.....	107
6.1.3.18.3	Resource Standard Methods	107
6.1.3.19	Resource: UpuAck (Document)	108
6.1.3.19.1	Description	108
6.1.3.19.2	Resource Definition.....	108
6.1.3.19.3	Resource Standard Methods	108
6.1.3.20	Resource: GroupIdentifiers (Document)	109
6.1.3.20.1	Description	109
6.1.3.20.2	Resource Definition.....	109
6.1.3.20.3	Resource Standard Methods	109
6.1.3.21	Resource: SnssaisAck (Document)	110
6.1.3.21.1	Description	110
6.1.3.21.2	Resource Definition.....	110
6.1.3.21.3	Resource Standard Methods	111
6.1.3.22	Resource: CagAck (Document)	111
6.1.3.22.1	Description	111
6.1.3.22.2	Resource Definition.....	111
6.1.3.22.3	Resource Standard Methods	111
6.1.3.23	Resource: LcsPrivacySubscriptionData (Document)	112
6.1.3.23.1	Description	112
6.1.3.23.2	Resource Definition.....	112
6.1.3.23.3	Resource Standard Methods	112
6.1.3.24	Resource: LcsMobileOriginatedSubscriptionData (Document).....	113
6.1.3.24.1	Description	113
6.1.3.24.2	Resource Definition.....	113
6.1.3.24.3	Resource Standard Methods	113
6.1.3.25	Resource: EnhancedCoverageRestrictionData	114
6.1.3.25.1	Description	114
6.1.3.25.2	Resource Definition.....	114
6.1.3.25.3	Resource Standard Methods	114
6.1.3.26	Resource: UeContextInAmfData (Document)	115
6.1.3.26.1	Description	115
6.1.3.26.2	Resource Definition.....	115

6.1.3.26.3	Resource Standard Methods	115
6.1.3.27	Resource: V2xSubscriptionData (Document)	116
6.1.3.27.1	Description	116
6.1.3.27.2	Resource Definition	116
6.1.3.27.3	Resource Standard Methods	116
6.1.3.28	Resource: LcsBroadcastAssistanceSubscriptionData (Document)	117
6.1.3.28.1	Description	117
6.1.3.28.2	Resource Definition	117
6.1.3.28.3	Resource Standard Methods	117
6.1.3.29	Resource: IndividualSharedData (Document)	118
6.1.3.29.1	Description	118
6.1.3.29.2	Resource Definition	118
6.1.3.29.3	Resource Standard Methods	118
6.1.4	Custom Operations without associated resources	119
6.1.5	Notifications	119
6.1.5.1	General	119
6.1.5.2	Data Change Notification	119
6.1.6	Data Model	120
6.1.6.1	General	120
6.1.6.2	Structured data types	126
6.1.6.2.1	Introduction	126
6.1.6.2.2	Type: Nssai	126
6.1.6.2.3	Type: SdmSubscription	127
6.1.6.2.4	Type: AccessAndMobilitySubscriptionData	130
6.1.6.2.5	Type: SmfSelectionSubscriptionData	134
6.1.6.2.6	Type: DnnInfo	135
6.1.6.2.7	Type: SnsaiInfo	135
6.1.6.2.8	Type: SessionManagementSubscriptionData	136
6.1.6.2.9	Type: DnnConfiguration	137
6.1.6.2.10	Void	139
6.1.6.2.11	Type: PduSessionTypes	139
6.1.6.2.12	Type: SscModes	139
6.1.6.2.13	Type: SmsSubscriptionData	139
6.1.6.2.14	Type: SmsManagementSubscriptionData	140
6.1.6.2.15	Type: SubscriptionDataSets	140
6.1.6.2.16	Type: UeContextInSmfData	141
6.1.6.2.17	Type: PduSession	141
6.1.6.2.18	Type: IdTranslationResult	141
6.1.6.2.19	Void	141
6.1.6.2.20	Void	141
6.1.6.2.21	Type: ModificationNotification	141
6.1.6.2.22	Type: IpAddress	141
6.1.6.2.23	Type: UeContextInSmsfData	142
6.1.6.2.24	Type: SmsfInfo	142
6.1.6.2.25	Type: AcknowledgeInfo	142
6.1.6.2.26	Type: SorInfo	143
6.1.6.2.27	Type: SharedData	143
6.1.6.2.28	Type: PgwInfo	144
6.1.6.2.29	Type: TraceDataResponse	144
6.1.6.2.30	Type: SteeringContainer	144
6.1.6.2.31	Type: SdmSubsModification	144
6.1.6.2.32	Type: EmergencyInfo	145
6.1.6.2.33	Type: UpuInfo	145
6.1.6.2.34	Type: GroupIdentifiers	145
6.1.6.2.35	Type: NiddInformation	146
6.1.6.2.36	Type: CagData	146
6.1.6.2.37	Type: CagInfo	146
6.1.6.2.38	Type: AdditionalSnsaiData	147
6.1.6.2.39	Type: VnGroupData	147
6.1.6.2.40	Type: AppDescriptor	147
6.1.6.2.41	Type: AppPortId	147
6.1.6.2.42	Type: LcsPrivacyData	147

6.1.6.2.43	Type: Lpi	148
6.1.6.2.44	Type: UnrelatedClass	148
6.1.6.2.45	Type: PlmnOperatorClass	148
6.1.6.2.46	Type: ValidTimePeriod	148
6.1.6.2.47	Type: LcsMoData	149
6.1.6.2.48	Type: EcRestrictionDataWb	149
6.1.6.2.49	Type: ExpectedUeBehaviourData	150
6.1.6.2.50	Void	150
6.1.6.2.51	Void	150
6.1.6.2.52	Type: SuggestedPacketNumDl	150
6.1.6.2.53	Void	151
6.1.6.2.54	Type: FrameRouteInfo	151
6.1.6.2.55	Type: SorUpdateInfo	151
6.1.6.2.56	Type: EnhancedCoverageRestrictionData	151
6.1.6.2.57	Type: EdrxParameters	151
6.1.6.2.58	Type: PtwParameters	152
6.1.6.2.59	Void	152
6.1.6.2.60	Void	152
6.1.6.2.61	Type: Void	152
6.1.6.2.62	Type: ExternalUnrelatedClass	152
6.1.6.2.63	Type: AfExternal	152
6.1.6.2.64	Type: LcsClientExternal	153
6.1.6.2.65	Type: LcsClientGroupExternal	153
6.1.6.2.66	Type: ServiceTypeUnrelatedClass	153
6.1.6.2.67	Type: UeId	153
6.1.6.2.68	Type: DefaultUnrelatedClass	154
6.1.6.2.69	Type: ContextInfo	154
6.1.6.2.70	Type: UeContextInAmfData	154
6.1.6.2.71	Type: V2xSubscriptionData	154
6.1.6.2.72	Type: LcsBroadcastAssistanceTypesData	155
6.1.6.2.73	Type: DatasetNames	158
6.1.6.3	Simple data types and enumerations	158
6.1.6.3.1	Introduction	158
6.1.6.3.2	Simple data types	158
6.1.6.3.3	Enumeration: DataSetName	160
6.1.6.3.4	Void	160
6.1.6.3.5	Void	160
6.1.6.3.6	Void	160
6.1.6.3.7	Enumeration: PduSessionContinuityInd	160
6.1.6.3.8	Enumeration: LocationPrivacyInd	160
6.1.6.3.9	Enumeration: PrivacyCheckRelatedAction	161
6.1.6.3.10	Enumeration: LcsClientClass	161
6.1.6.3.11	Enumeration: LcsMoServiceClass	161
6.1.6.3.12	Enumeration: OperationMode	161
6.1.6.3.13	Enumeration: SorUpdateIndicator	161
6.1.6.3.14	Enumeration: CodeWordInd	162
6.1.6.3.15	Enumeration: MdtUserConsent	162
6.1.7	Error Handling	162
6.1.7.1	General	162
6.1.7.2	Protocol Errors	162
6.1.7.3	Application Errors	162
6.1.8	Feature Negotiation	163
6.1.9	Security	163
6.2	Nudm_UEContextManagement Service API	164
6.2.1	API URI	164
6.2.2	Usage of HTTP	164
6.2.2.1	General	164
6.2.2.2	HTTP standard headers	164
6.2.2.2.1	General	164
6.2.2.2.2	Content type	164
6.2.2.3	HTTP custom headers	164
6.2.2.3.1	General	164

6.2.3	Resources	165
6.2.3.1	Overview	165
6.2.3.2	Resource: Amf3GppAccessRegistration (Document)	167
6.2.3.2.1	Description	167
6.2.3.2.2	Resource Definition	167
6.2.3.2.3	Resource Standard Methods	167
6.2.3.2.4	Resource Custom Operations	170
6.2.3.3	Resource: AmfNon3GppAccessRegistration (Document)	171
6.2.3.3.1	Description	171
6.2.3.3.2	Resource Definition	171
6.2.3.3.3	Resource Standard Methods	171
6.2.3.4	Resource: SmfRegistrations	173
6.2.3.4.1	Description	173
6.2.3.4.2	Resource Definition	173
6.2.3.4.3	Resource Standard Methods	174
6.2.3.5	Resource: IndividualSmfRegistration (Document)	175
6.2.3.5.1	Resource Definition	175
6.2.3.5.2	Resource Standard Methods	175
6.2.3.6	Resource: Smsf3GppAccessRegistration (Document)	177
6.2.3.6.1	Description	177
6.2.3.6.2	Resource Definition	177
6.2.3.6.3	Resource Standard Methods	177
6.2.3.7	Resource: SmsfNon3GppAccessRegistration (Document)	179
6.2.3.7.1	Description	179
6.2.3.7.2	Resource Definition	179
6.2.3.7.3	Resource Standard Methods	179
6.2.3.8	Resource: Location	181
6.2.3.8.1	Description	181
6.2.3.8.2	Resource Definition	181
6.2.3.8.3	Resource Standard Methods	182
6.2.3.9	Resource: Registrations	182
6.2.3.9.1	Description	182
6.2.3.9.2	Resource Definition	182
6.2.3.9.3	Resource Standard Methods	183
6.2.3.10	Resource: IpSmGwRegistration	183
6.2.3.10.1	Description	183
6.2.3.10.2	Resource Definition	183
6.2.3.10.3	Resource Standard Methods	184
6.2.4	Custom Operations without associated resources	185
6.2.4.1	Overview	185
6.2.4.2	Operation: Trigger P-CSCF Restoration	186
6.2.4.2.1	Description	186
6.2.4.2.2	Operation Definition	186
6.2.5	Notifications	186
6.2.5.1	General	186
6.2.5.2	Deregistration Notification	186
6.2.5.3	P-CSCF Restoration Notification	188
6.2.6	Data Model	189
6.2.6.1	General	189
6.2.6.2	Structured data types	191
6.2.6.2.1	Introduction	191
6.2.6.2.2	Type: Amf3GppAccessRegistration	192
6.2.6.2.3	Type: AmfNon3GppAccessRegistration	195
6.2.6.2.4	Type: SmfRegistration	198
6.2.6.2.5	Type: DeregistrationData	198
6.2.6.2.6	Type: SmsfRegistration	199
6.2.6.2.7	Type: Amf3GppAccessRegistrationModification	199
6.2.6.2.8	Type: AmfNon3GppAccessRegistrationModification	200
6.2.6.2.9	Type: PscsfRestorationNotification	201
6.2.6.2.10	Type: NetworkNodeDiameterAddress	201
6.2.6.2.11	Type: EpsIwkPgw	201
6.2.6.2.12	Type: TriggerRequest	201

6.2.6.2.13	Type: AmfDeregInfo	202
6.2.6.2.14	Type: EpsInterworkingInfo	202
6.2.6.2.15	Type: LocationInfo	202
6.2.6.2.16	Type: RegistrationLocationInfo	202
6.2.6.2.17	Type: VgmlcAddress	202
6.2.6.2.18	Type: PeiUpdateInfo	203
6.2.6.2.19	Type: RegistrationDataSets	203
6.2.6.2.20	Type: IpSmGwRegistration	203
6.2.6.2.20A	Type: SmfRegistrationInfo	203
6.2.6.3	Simple data types and enumerations	203
6.2.6.3.1	Introduction	203
6.2.6.3.2	Simple data types	204
6.2.6.3.3	Enumeration: DeregistrationReason	204
6.2.6.3.4	Enumeration: ImsVoPs	204
6.2.6.3.5	Enumeration: RegistrationReason	205
6.2.6.3.6	Enumeration: RegistrationDataSetName	205
6.2.7	Error Handling	205
6.2.7.1	General	205
6.2.7.2	Protocol Errors	205
6.2.7.3	Application Errors	205
6.2.8	Feature Negotiation	206
6.2.9	Security	207
6.3	Nudm_UEAuthentication Service API	207
6.3.1	API URI	207
6.3.2	Usage of HTTP	207
6.3.2.1	General	207
6.3.2.2	HTTP standard headers	207
6.3.2.2.1	General	207
6.3.2.2.2	Content type	207
6.3.2.3	HTTP custom headers	208
6.3.2.3.1	General	208
6.3.3	Resources	208
6.3.3.1	Overview	208
6.3.3.2	Resource: SecurityInformation (Custom operation)	209
6.3.3.2.1	Description	209
6.3.3.2.2	Resource Definition	209
6.3.3.2.3	Resource Standard Methods	210
6.3.3.2.4	Resource Custom Operations	210
6.3.3.3	Resource: AuthEvents (Collection)	211
6.3.3.3.1	Description	211
6.3.3.3.2	Resource Definition	211
6.3.3.3.3	Resource Standard Methods	211
6.3.3.4	Resource: SecurityInformationForRg	212
6.3.3.4.1	Description	212
6.3.3.4.2	Resource Definition	212
6.3.3.4.3	Resource Standard Methods	212
6.3.3.5	Resource: HssSecurityInformation (Custom operation)	213
6.3.3.5.1	Description	213
6.3.3.5.2	Resource Definition	213
6.3.3.5.3	Resource Standard Methods	214
6.3.3.5.4	Resource Custom Operations	214
6.3.3.6	Resource: Individual AuthEvent	214
6.3.3.6.1	Resource Definition	214
6.3.3.6.2	Resource Standard Methods	215
6.3.4	Custom Operations without associated resources	215
6.3.5	Notifications	215
6.3.6	Data Model	215
6.3.6.1	General	215
6.3.6.2	Structured data types	217
6.3.6.2.1	Introduction	217
6.3.6.2.2	Type: AuthenticationInfoRequest	217
6.3.6.2.3	Type: AuthenticationInfoResult	217

6.3.6.2.4	Type: AvEapAkaPrime	217
6.3.6.2.5	Type: Av5GHeAka	218
6.3.6.2.6	Type: ResynchronizationInfo	218
6.3.6.2.7	Type: AuthEvent	218
6.3.6.2.8	Type: AuthenticationVector	218
6.3.6.2.9	Type: RgAuthCtx	219
6.3.6.2.10	Type: HssAuthenticationInfoRequest	219
6.3.6.2.11	Type: HssAuthenticationInfoResult	219
6.3.6.2.12	Type: HssAuthenticationVectors	219
6.3.6.2.13	Type: AvEpsAka	220
6.3.6.2.14	Type: AvImsGbaEapAka	220
6.3.6.3	Simple data types and enumerations	220
6.3.6.3.1	Introduction	220
6.3.6.3.2	Simple data types	220
6.3.6.3.3	Enumeration: AuthType	221
6.3.6.3.4	Enumeration: AvType	221
6.3.6.3.5	Enumeration: HssAuthType	221
6.3.6.3.6	Enumeration: HssAvType	221
6.3.6.3.7	Enumeration: HssAuthTypeInUri	221
6.3.6.3.8	Enumeration: AccessNetworkId	222
6.3.6.3.9	Enumeration: NodeType	222
6.3.7	Error Handling	222
6.3.7.1	General	222
6.3.7.2	Protocol Errors	222
6.3.7.3	Application Errors	222
6.3.8	Feature Negotiation	223
6.3.9	Security	223
6.4	Nudm_EventExposure Service API	223
6.4.1	API URI	223
6.4.2	Usage of HTTP	224
6.4.2.1	General	224
6.4.2.2	HTTP standard headers	224
6.4.2.2.1	General	224
6.4.2.2.2	Content type	224
6.4.2.3	HTTP custom headers	224
6.4.2.3.1	General	224
6.4.3	Resources	225
6.4.3.1	Overview	225
6.4.3.2	Resource: EeSubscriptions (Collection)	225
6.4.3.2.1	Description	225
6.4.3.2.2	Resource Definition	225
6.4.3.2.3	Resource Standard Methods	226
6.4.3.3	Resource: Individual subscription (Document)	227
6.4.3.3.1	Resource Definition	227
6.4.3.3.2	Resource Standard Methods	227
6.4.4	Custom Operations without associated resources	229
6.4.5	Notifications	229
6.4.5.1	General	229
6.4.5.2	Event Occurrence Notification	229
6.4.6	Data Model	230
6.4.6.1	General	230
6.4.6.2	Structured data types	232
6.4.6.2.1	Introduction	232
6.4.6.2.2	Type: EeSubscription	233
6.4.6.2.3	Type: MonitoringConfiguration	234
6.4.6.2.4	Type: MonitoringReport	236
6.4.6.2.5	Type: Report	237
6.4.6.2.6	Type: ReportingOptions	237
6.4.6.2.7	Type: ChangeOfSupiPeiAssociationReport	238
6.4.6.2.8	Type: RoamingStatusReport	238
6.4.6.2.9	Type: CreatedEeSubscription	238
6.4.6.2.10	Type: LocationReportingConfiguration	239

6.4.6.2.11	Type: CnTypeChangeReport	239
6.4.6.2.12	Type: ReachabilityForSmsReport	239
6.4.6.2.13	Type: DatalinkReportingConfiguration	240
6.4.6.2.14	Type: CmlInfoReport	240
6.4.6.2.15	Type: LossConnectivityCfg	240
6.4.6.2.16	Type: PduSessionStatusCfg	240
6.4.6.2.17	Type: LossConnectivityReport	240
6.4.6.2.18	Type: LocationReport	241
6.4.6.2.19	Type: PdnConnectivityStatReport	241
6.4.6.3	Simple data types and enumerations	241
6.4.6.3.1	Introduction	241
6.4.6.3.2	Simple data types	241
6.4.6.3.3	Enumeration: EventType	242
6.4.6.3.4	Enumeration: LocationAccuracy	242
6.4.6.3.5	Enumeration: CnType	242
6.4.6.3.6	Enumeration: AssociationType	243
6.4.6.3.7	Enumeration: EventReportMode	243
6.4.6.3.8	Enumeration: ReachabilityForSmsConfiguration	243
6.4.6.3.9	Enumeration: PdnConnectivityStatus	243
6.4.7	Error Handling	243
6.4.7.1	General	243
6.4.7.2	Protocol Errors	243
6.4.7.3	Application Errors	243
6.4.8	Feature Negotiation	245
6.4.9	Security	245
6.5	Nudm_ParameterProvision Service API	245
6.5.1	API URI	245
6.5.2	Usage of HTTP	246
6.5.2.1	General	246
6.5.2.2	HTTP standard headers	246
6.5.2.2.1	General	246
6.5.2.2.2	Content type	246
6.5.2.3	HTTP custom headers	246
6.5.2.3.1	General	246
6.5.3	Resources	247
6.5.3.1	Overview	247
6.5.3.2	Resource: PpData	248
6.5.3.2.1	Description	248
6.5.3.2.2	Resource Definition	248
6.5.3.2.3	Resource Standard Methods	248
6.5.3.3	Resource: 5GVnGroupConfiguration	249
6.5.3.3.1	Description	249
6.5.3.3.2	Resource Definition	249
6.5.3.3.3	Resource Standard Methods	249
6.5.4	Custom Operations without associated resources	252
6.5.5	Notifications	252
6.5.6	Data Model	252
6.5.6.1	General	252
6.5.6.2	Structured data types	253
6.5.6.2.1	Introduction	253
6.5.6.2.2	Type: PpData	253
6.5.6.2.3	Type: CommunicationCharacteristics	254
6.5.6.2.4	Type: PpSubsRegTimer	254
6.5.6.2.5	Type: PpActiveTime	255
6.5.6.2.6	Type: 5GVnGroupConfiguration	255
6.5.6.2.7	Type: 5GVnGroupData	256
6.5.6.2.8	Type: ExpectedUeBehaviour	257
6.5.6.2.9	Void	258
6.5.6.2.10	Type: LocationArea	258
6.5.6.2.11	Type: NetworkAreaInfo	258
6.5.6.2.12	Type: EcRestriction	258
6.5.6.2.13	Type: PlmnEcInfo	259

6.5.6.2.14	Type: PpDIPacketCountExt.....	259
6.5.6.2.15	Type: PpMaximumResponseTime	260
6.5.6.2.16	Type: PpMaximumLatency	260
6.5.6.2.17	Type: LcsPrivacy.....	261
6.5.6.3	Simple data types and enumerations	261
6.5.6.3.1	Introduction	261
6.5.6.3.2	Simple data types.....	261
6.5.6.3.3	Void.....	261
6.5.6.3.4	Void.....	261
6.5.7	Error Handling.....	261
6.5.7.1	General	261
6.5.7.2	Protocol Errors	261
6.5.7.3	Application Errors.....	262
6.5.8	Feature Negotiation.....	262
6.5.9	Security	262
6.6	Nudm_NIDDAuthorization Service API.....	262
6.6.1	API URI	262
6.6.2	Usage of HTTP	263
6.6.2.1	General	263
6.6.2.2	HTTP standard headers	263
6.6.2.2.1	General	263
6.6.2.2.2	Content type	263
6.6.2.3	HTTP custom headers	263
6.6.2.3.1	General	263
6.6.3	Resources.....	263
6.6.3.1	Overview.....	263
6.6.3.2	Resource: ueIdentity (Document)	264
6.6.3.2.1	Description	264
6.6.3.2.2	Resource Definition.....	264
6.6.3.2.3	Resource Standard Methods	264
6.6.3.2.4	Resource Custom Operations	264
6.6.4	Custom Operations without associated resources	265
6.6.5	Notifications	265
6.6.5.1	General	265
6.6.5.2	Nidd Authorization Data Update Notification	265
6.6.6	Data Model	266
6.6.6.1	General	266
6.6.6.2	Structured data types.....	267
6.6.6.2.1	Introduction	267
6.6.6.2.2	Type: AuthorizationData	267
6.6.6.2.3	Type: UserIdentifier	267
6.6.6.2.4	Type: NiddAuthUpdateInfo.....	267
6.6.6.2.5	Type: NiddAuthUpdateNotification	268
6.6.6.2.6	Type: AuthorizationInfo	268
6.6.6.3	Simple data types and enumerations	268
6.6.6.3.1	Introduction	268
6.6.6.3.2	Simple data types.....	268
6.6.6.3.3	Enumeration: NiddCause.....	269
6.6.7	Error Handling.....	269
6.6.7.1	General	269
6.6.7.2	Protocol Errors	269
6.6.7.3	Application Errors.....	269
6.6.8	Feature Negotiation.....	269
6.6.9	Security	269
6.7	Nudm_MT Service API.....	270
6.7.1	API URI	270
6.7.2	Usage of HTTP	270
6.7.2.1	General	270
6.7.2.2	HTTP standard headers	270
6.7.2.2.1	General	270
6.7.2.2.2	Content type	270
6.7.2.3	HTTP custom headers	270