

ETSI TS 137 483 V19.2.0 (2026-04)



TECHNICAL SPECIFICATION

5G; E1 Application Protocol (E1AP) (3GPP TS 37.483 version 19.2.0 Release 19)

get full document from standards.iteh.ai



Reference

RTS/TSGR-0337483vj20

Keywords

5G

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 the
[ETSI Search & Browse Standards](#) application.

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 on [ETSI deliver](#) repository.

Users should be aware that the present document may be revised or have its status changed, this information is available in the [Milestones listing](#).

If you find errors in the present document, please send your comments to the relevant service listed under [Committee Support Staff](#).

If you find a security vulnerability in the present document, please report it through our [Coordinated Vulnerability Disclosure \(CVD\)](#) program.

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 2026.
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 IPR online database](#).

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™**, **LTE™** and **5G™** logo 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 at [3GPP to ETSI numbering cross-referencing](#).

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.....	12
1 Scope	13
2 References	13
3 Definitions and abbreviations.....	14
3.1 Definitions	14
3.2 Abbreviations	16
4 General	17
4.1 Procedure specification principles.....	17
4.2 Forwards and backwards compatibility.....	17
4.3 Specification notations	17
5 E1AP services	18
6 Services expected from signalling transport.....	18
7 Functions of E1AP	18
8 E1AP procedures.....	18
8.1 List of E1AP Elementary Procedures.....	18
8.2 Interface Management procedures	20
8.2.1 Reset	20
8.2.1.1 General	20
8.2.1.2 Successful Operation.....	20
8.2.1.2.1 Reset Procedure Initiated from the gNB-CU-CP.....	20
8.2.1.2.2 Reset Procedure Initiated from the gNB-CU-UP	22
8.2.1.3 Abnormal Conditions	22
8.2.2 Error Indication.....	23
8.2.2.1 General	23
8.2.2.2 Successful Operation.....	23
8.2.2.3 Abnormal Conditions	23
8.2.3 gNB-CU-UP E1 Setup.....	24
8.2.3.1 General	24
8.2.3.2 Successful Operation.....	24
8.2.3.3 Unsuccessful Operation	25
8.2.3.4 Abnormal Conditions	25
8.2.4 gNB-CU-CP E1 Setup	26
8.2.4.1 General	26
8.2.4.2 Successful Operation.....	26
8.2.4.3 Unsuccessful Operation	27
8.2.4.4 Abnormal Conditions	27
8.2.5 gNB-CU-UP Configuration Update.....	27
8.2.5.1 General	27
8.2.5.2 Successful Operation.....	28
8.2.5.3 Unsuccessful Operation	29
8.2.5.4 Abnormal Conditions	29
8.2.6 gNB-CU-CP Configuration Update.....	29
8.2.6.1 General	29
8.2.6.2 Successful Operation.....	30
8.2.6.3 Unsuccessful Operation	31
8.2.6.4 Abnormal Conditions	31
8.2.7 E1 Release	31
8.2.7.1 General	31

8.2.7.2	Successful Operation.....	31
8.2.7.2.1	E1 Release Procedure Initiated from the gNB-CU-CP.....	31
8.2.7.2.2	E1 Release Procedure Initiated from the gNB-CU-UP.....	32
8.2.7.3	Abnormal Conditions.....	32
8.2.8	gNB-CU-UP Status Indication.....	33
8.2.8.1	General.....	33
8.2.8.2	Successful Operation.....	33
8.2.8.3	Abnormal Conditions.....	33
8.2.9	Resource Status Reporting Initiation.....	33
8.2.9.1	General.....	33
8.2.9.2	Successful Operation.....	33
8.2.9.3	Unsuccessful Operation.....	34
8.2.9.4	Abnormal Conditions.....	34
8.2.10	Resource Status Reporting.....	34
8.2.10.1	General.....	34
8.2.10.2	Successful Operation.....	35
8.2.10.3	Unsuccessful Operation.....	35
8.2.10.4	Abnormal Conditions.....	35
8.2.11	Data Collection Reporting Initiation.....	35
8.2.11.1	General.....	35
8.2.11.2	Successful Operation.....	35
8.2.11.3	Unsuccessful Operation.....	36
8.2.11.4	Abnormal Conditions.....	37
8.2.12	Data Collection Reporting.....	37
8.2.12.1	General.....	37
8.2.12.2	Successful Operation.....	37
8.2.12.3	Unsuccessful Operation.....	37
8.2.12.4	Abnormal Conditions.....	38
8.3	Bearer Context Management procedures.....	38
8.3.1	Bearer Context Setup.....	38
8.3.1.1	General.....	38
8.3.1.2	Successful Operation.....	38
8.3.1.3	Unsuccessful Operation.....	44
8.3.1.4	Abnormal Conditions.....	44
8.3.2	Bearer Context Modification (gNB-CU-CP initiated).....	44
8.3.2.1	General.....	44
8.3.2.2	Successful Operation.....	45
8.3.2.3	Unsuccessful Operation.....	52
8.3.2.4	Abnormal Conditions.....	52
8.3.3	Bearer Context Modification Required (gNB-CU-UP initiated).....	52
8.3.3.1	General.....	52
8.3.3.2	Successful Operation.....	53
8.3.3.3	Abnormal Conditions.....	53
8.3.4	Bearer Context Release (gNB-CU-CP initiated).....	53
8.3.4.1	General.....	53
8.3.4.2	Successful Operation.....	54
8.3.4.3	Abnormal Conditions.....	54
8.3.5	Bearer Context Release Request (gNB-CU-UP initiated).....	54
8.3.5.1	General.....	54
8.3.5.2	Successful Operation.....	54
8.3.5.3	Abnormal Conditions.....	55
8.3.6	Bearer Context Inactivity Notification.....	55
8.3.6.1	General.....	55
8.3.6.2	Successful Operation.....	55
8.3.6.3	Abnormal Conditions.....	55
8.3.7	DL Data Notification.....	56
8.3.7.1	General.....	56
8.3.7.2	Successful Operation.....	56
8.3.7.3	Abnormal Conditions.....	56
8.3.8	Data Usage Report.....	56
8.3.8.1	General.....	56
8.3.8.2	Successful Operation.....	57

8.3.8.3	Abnormal Conditions	57
8.3.9	gNB-CU-UP Counter Check.....	57
8.3.9.1	General	57
8.3.9.2	Successful Operation.....	57
8.3.9.3	Unsuccessful Operation	57
8.3.9.4	Abnormal Conditions	58
8.3.10	UL Data Notification	58
8.3.10.1	General	58
8.3.10.2	Successful Operation.....	58
8.3.10.3	Abnormal Conditions	58
8.3.11	MR-DC Data Usage Report.....	58
8.3.11.1	General	58
8.3.11.2	Successful Operation.....	58
8.3.11.3	Abnormal Conditions	59
8.3.12	Early Forwarding SN Transfer.....	59
8.3.12.1	General	59
8.3.12.2	Successful Operation.....	59
8.3.12.3	Unsuccessful Operation	59
8.3.12.4	Abnormal Conditions	59
8.3.13	GNB-CU-CP Measurement Results Information.....	59
8.3.13.1	General	59
8.3.13.2	Successful Operation.....	60
8.3.13.3	Abnormal Conditions	60
8.4	Trace Procedures	60
8.4.1	Trace Start.....	60
8.4.1.1	General	60
8.4.1.2	Successful Operation.....	60
8.4.1.3	Abnormal Conditions	60
8.4.2	Deactivate Trace	61
8.4.2.1	General	61
8.4.2.2	Successful Operation.....	61
8.4.2.3	Abnormal Conditions	61
8.4.3	Cell Traffic Trace.....	61
8.4.3.1	General	61
8.4.3.2	Successful Operation.....	61
8.4.3.3	Abnormal Conditions	61
8.5	IAB Procedures	62
8.5.1	IAB UP TNL Address Update	62
8.5.1.1	General	62
8.5.1.2	Successful Operation.....	62
8.5.1.3	Unsuccessful Operation	62
8.5.1.4	Abnormal Conditions	63
8.5.2	IAB PSK Notification.....	63
8.5.2.1	General	63
8.5.2.2	Successful Operation.....	63
8.5.2.3	Abnormal Conditions	64
8.6	MBS Procedures.....	64
8.6.1	MBS Procedures for Broadcast.....	64
8.6.1.1	BC Bearer Context Setup	64
8.6.1.1.1	General	64
8.6.1.1.2	Successful Operation	64
8.6.1.1.3	Unsuccessful Operation.....	65
8.6.1.1.4	Abnormal Conditions	65
8.6.1.2	BC Bearer Context Modification (gNB-CU-CP initiated)	65
8.6.1.2.1	General	65
8.6.1.2.2	Successful Operation	66
8.6.1.2.3	Unsuccessful Operation.....	66
8.6.1.2.4	Abnormal Conditions	67
8.6.1.3	BC Bearer Context Modification Required.....	67
8.6.1.3.1	General	67
8.6.1.3.2	Successful Operation	67
8.6.1.3.3	Abnormal Conditions	67

8.6.1.4	BC Bearer Context Release (gNB-CU-CP initiated).....	68
8.6.1.4.1	General	68
8.6.1.4.2	Successful Operation	68
8.6.1.4.3	Abnormal Conditions	68
8.6.1.5	BC Bearer Context Release Request (gNB-CU-UP initiated).....	68
8.6.1.5.1	General	68
8.6.1.5.2	Successful Operation	68
8.6.1.5.3	Abnormal Conditions	69
8.6.2	MBS Procedures for Multicast.....	69
8.6.2.1	MC Bearer Context Setup	69
8.6.2.1.1	General	69
8.6.2.1.2	Successful Operation	69
8.6.2.1.3	Unsuccessful Operation.....	70
8.6.2.1.4	Abnormal Conditions	71
8.6.2.2	MC Bearer Context Modification (gNB-CU-CP initiated)	71
8.6.2.2.1	General	71
8.6.2.2.2	Successful Operation	71
8.6.2.2.3	Unsuccessful Operation.....	73
8.6.2.2.4	Abnormal Conditions	73
8.6.2.3	MC Bearer Context Modification Required (gNB-CU-UP initiated).....	73
8.6.2.3.1	General	73
8.6.2.3.2	Successful Operation	73
8.6.2.3.3	Abnormal Conditions	74
8.6.2.4	MC Bearer Context Release (gNB-CU-CP initiated).....	74
8.6.2.4.1	General	74
8.6.2.4.2	Successful Operation	74
8.6.2.4.3	Abnormal Conditions	75
8.6.2.5	MC Bearer Context Release Request (gNB-CU-UP initiated).....	75
8.6.2.5.1	General	75
8.6.2.5.2	Successful Operation	75
8.6.2.5.3	Abnormal Conditions	75
8.6.2.6	MC Bearer Notification.....	75
8.6.2.6.1	General	75
8.6.2.6.2	Successful Operation	75
8.6.2.6.3	Abnormal Conditions	76
9	Elements for E1AP communication	76
9.1	General	76
9.2	Message Functional Definition and Content	76
9.2.1	Interface Management messages	76
9.2.1.1	RESET	76
9.2.1.2	RESET ACKNOWLEDGE	77
9.2.1.3	ERROR INDICATION	77
9.2.1.4	GNB-CU-UP E1 SETUP REQUEST	78
9.2.1.5	GNB-CU-UP E1 SETUP RESPONSE.....	79
9.2.1.6	GNB-CU-UP E1 SETUP FAILURE.....	79
9.2.1.7	GNB-CU-CP E1 SETUP REQUEST	79
9.2.1.8	GNB-CU-CP E1 SETUP RESPONSE.....	80
9.2.1.9	GNB-CU-CP E1 SETUP FAILURE.....	81
9.2.1.10	GNB-CU-UP CONFIGURATION UPDATE.....	81
9.2.1.11	GNB-CU-UP CONFIGURATION UPDATE ACKNOWLEDGE.....	82
9.2.1.12	GNB-CU-UP CONFIGURATION UPDATE FAILURE	82
9.2.1.13	GNB-CU-CP CONFIGURATION UPDATE	82
9.2.1.14	GNB-CU-CP CONFIGURATION UPDATE ACKNOWLEDGE	83
9.2.1.15	GNB-CU-CP CONFIGURATION UPDATE FAILURE	84
9.2.1.16	E1 RELEASE REQUEST	84
9.2.1.17	E1 RELEASE RESPONSE.....	85
9.2.1.18	GNB-CU-UP STATUS INDICATION.....	85
9.2.1.19	RESOURCE STATUS REQUEST	85
9.2.1.20	RESOURCE STATUS RESPONSE.....	86
9.2.1.21	RESOURCE STATUS FAILURE	86
9.2.1.22	RESOURCE STATUS UPDATE	87

9.2.1.23	DATA COLLECTION REQUEST.....	87
9.2.1.24	DATA COLLECTION RESPONSE.....	88
9.2.1.25	DATA COLLECTION FAILURE.....	89
9.2.1.26	DATA COLLECTION UPDATE.....	89
9.2.2	Bearer Context Management messages.....	90
9.2.2.1	BEARER CONTEXT SETUP REQUEST.....	90
9.2.2.2	BEARER CONTEXT SETUP RESPONSE.....	91
9.2.2.3	BEARER CONTEXT SETUP FAILURE.....	92
9.2.2.4	BEARER CONTEXT MODIFICATION REQUEST.....	92
9.2.2.5	BEARER CONTEXT MODIFICATION RESPONSE.....	94
9.2.2.6	BEARER CONTEXT MODIFICATION FAILURE.....	95
9.2.2.7	BEARER CONTEXT MODIFICATION REQUIRED.....	95
9.2.2.8	BEARER CONTEXT MODIFICATION CONFIRM.....	96
9.2.2.9	BEARER CONTEXT RELEASE COMMAND.....	96
9.2.2.10	BEARER CONTEXT RELEASE COMPLETE.....	97
9.2.2.11	BEARER CONTEXT RELEASE REQUEST.....	97
9.2.2.12	BEARER CONTEXT INACTIVITY NOTIFICATION.....	98
9.2.2.13	DL DATA NOTIFICATION.....	98
9.2.2.14	DATA USAGE REPORT.....	99
9.2.2.15	GNB-CU-UP COUNTER CHECK REQUEST.....	99
9.2.2.16	UL DATA NOTIFICATION.....	100
9.2.2.17	MR-DC DATA USAGE REPORT.....	101
9.2.2.18	EARLY FORWARDING SN TRANSFER.....	101
9.2.2.19	GNB-CU-CP MEASUREMENT RESULTS INFORMATION.....	102
9.2.3	Trace Messages.....	102
9.2.3.1	TRACE START.....	102
9.2.3.2	DEACTIVATE TRACE.....	103
9.2.3.3	CELL TRAFFIC TRACE.....	103
9.2.4	IAB Messages.....	104
9.2.4.1	IAB UP TNL ADDRESS UPDATE.....	104
9.2.4.2	IAB UP TNL ADDRESS UPDATE ACKNOWLEDGE.....	104
9.2.4.3	IAB UP TNL ADDRESS UPDATE FAILURE.....	105
9.2.4.4	IAB PSK NOTIFICATION.....	105
9.2.5	MBS Messages.....	105
9.2.5.1	MBS Messages for Broadcast.....	105
9.2.5.1.1	BC BEARER CONTEXT SETUP REQUEST.....	105
9.2.5.1.2	BC BEARER CONTEXT SETUP RESPONSE.....	105
9.2.5.1.3	BC BEARER CONTEXT SETUP FAILURE.....	106
9.2.5.1.4	BC BEARER CONTEXT MODIFICATION REQUEST.....	106
9.2.5.1.5	BC BEARER CONTEXT MODIFICATION RESPONSE.....	106
9.2.5.1.6	BC BEARER CONTEXT MODIFICATION FAILURE.....	107
9.2.5.1.7	BC BEARER CONTEXT MODIFICATION REQUIRED.....	107
9.2.5.1.8	BC BEARER CONTEXT MODIFICATION CONFIRM.....	107
9.2.5.1.9	BC BEARER CONTEXT RELEASE COMMAND.....	107
9.2.5.1.10	BC BEARER CONTEXT RELEASE COMPLETE.....	108
9.2.5.1.11	BC BEARER CONTEXT RELEASE REQUEST.....	108
9.2.5.2	MBS Messages for Multicast.....	108
9.2.5.2.1	MC BEARER CONTEXT SETUP REQUEST.....	108
9.2.5.2.2	MC BEARER CONTEXT SETUP RESPONSE.....	109
9.2.5.2.3	MC BEARER CONTEXT SETUP FAILURE.....	109
9.2.5.2.4	MC BEARER CONTEXT MODIFICATION REQUEST.....	109
9.2.5.2.5	MC BEARER CONTEXT MODIFICATION RESPONSE.....	109
9.2.5.2.6	MC BEARER CONTEXT MODIFICATION FAILURE.....	110
9.2.5.2.7	MC BEARER CONTEXT MODIFICATION REQUIRED.....	110
9.2.5.2.8	MC BEARER CONTEXT MODIFICATION CONFIRM.....	110
9.2.5.2.9	MC BEARER CONTEXT RELEASE COMMAND.....	111
9.2.5.2.10	MC BEARER CONTEXT RELEASE COMPLETE.....	111
9.2.5.2.11	MC BEARER CONTEXT RELEASE REQUEST.....	111
9.2.5.2.12	MC BEARER NOTIFICATION.....	111
9.3	Information Element Definitions.....	112
9.3.1	Radio Network Layer Related IEs.....	112
9.3.1.1	Message Type.....	112

9.3.1.2	Cause.....	112
9.3.1.3	Criticality Diagnostics.....	116
9.3.1.4	gNB-CU-CP UE E1AP ID.....	117
9.3.1.5	gNB-CU-UP UE E1AP ID.....	117
9.3.1.6	Time To wait.....	117
9.3.1.7	PLMN Identity.....	117
9.3.1.8	Slice Support List.....	118
9.3.1.9	S-NSSAI.....	118
9.3.1.10	Security Information.....	118
9.3.1.11	Cell Group Information.....	118
9.3.1.12	QoS Flow List.....	119
9.3.1.13	UP Parameters.....	119
9.3.1.14	NR CGI.....	120
9.3.1.15	gNB-CU-UP ID.....	120
9.3.1.16	DRB ID.....	120
9.3.1.16a	MRB ID.....	121
9.3.1.17	E-UTRAN QoS.....	121
9.3.1.18	E-UTRAN Allocation and Retention Priority.....	121
9.3.1.19	GBR QoS Information.....	122
9.3.1.20	Bit Rate.....	122
9.3.1.21	PDU Session ID.....	123
9.3.1.22	PDU Session Type.....	123
9.3.1.23	Security Indication.....	123
9.3.1.24	QoS Flow Identifier.....	124
9.3.1.25	QoS Flow QoS Parameters List.....	124
9.3.1.26	QoS Flow Level QoS Parameters.....	124
9.3.1.27	Non Dynamic 5QI Descriptor.....	126
9.3.1.28	Dynamic 5QI Descriptor.....	126
9.3.1.29	NG-RAN Allocation and Retention Priority.....	127
9.3.1.30	GBR QoS Flow Information.....	128
9.3.1.31	Security Algorithm.....	129
9.3.1.32	User Plane Security Keys.....	130
9.3.1.33	UL Configuration.....	130
9.3.1.34	gNB-CU-UP Cell Group Related Configuration.....	130
9.3.1.35	PDCP Count.....	131
9.3.1.35a	MBS PDCP COUNT.....	131
9.3.1.36	NR CGI Support List.....	131
9.3.1.37	QoS Parameters Support List.....	131
9.3.1.38	PDCP Configuration.....	132
9.3.1.39	SDAP Configuration.....	135
9.3.1.40	ROHC Parameters.....	135
9.3.1.41	T-Reordering Timer.....	136
9.3.1.42	Discard Timer.....	137
9.3.1.43	UL Data Split Threshold.....	137
9.3.1.44	Data Usage Report List.....	137
9.3.1.45	Flow Failed List.....	138
9.3.1.46	Packet Loss Rate.....	138
9.3.1.47	Packet Delay Budget.....	138
9.3.1.48	Packet Error Rate.....	139
9.3.1.49	Averaging Window.....	139
9.3.1.50	Maximum Data Burst Volume.....	139
9.3.1.51	Priority Level.....	139
9.3.1.52	Security Result.....	139
9.3.1.53	Transaction ID.....	140
9.3.1.54	Inactivity timer.....	140
9.3.1.55	Paging Priority Indicator (PPI).....	140
9.3.1.56	gNB-CU-UP Capacity.....	140
9.3.1.57	Maximum Integrity Protected Data Rate.....	140
9.3.1.58	PDCP SN Status Information.....	141
9.3.1.59	QoS Flow Mapping List.....	141
9.3.1.60	QoS Flow Mapping Indication.....	142
9.3.1.61	PDCP SN Size.....	142

9.3.1.62	Network Instance	142
9.3.1.63	MR-DC Usage Information.....	142
9.3.1.64	MR-DC Data Usage Report List	143
9.3.1.65	gNB-DU ID.....	143
9.3.1.66	Common Network Instance.....	144
9.3.1.67	Activity Notification Level	144
9.3.1.68	Trace Activation.....	144
9.3.1.69	Subscriber Profile ID for RAT/Frequency priority	145
9.3.1.70	Additional RRM Policy Index.....	145
9.3.1.71	Retainability Measurements Information	146
9.3.1.72	TNL Available Capacity Indicator.....	146
9.3.1.73	HW Capacity Indicator	147
9.3.1.74	Redundant QoS Flow Indicator.....	147
9.3.1.75	TSC Traffic Characteristics.....	147
9.3.1.76	TSC Assistance Information	147
9.3.1.77	Periodicity	147
9.3.1.78	Burst Arrival Time	148
9.3.1.79	Extended Packet Delay Budget.....	148
9.3.1.80	Redundant PDU Session Information	148
9.3.1.81	QoS Mapping Information	148
9.3.1.82	NID	148
9.3.1.83	NPN Support Information.....	149
9.3.1.84	NPN Context Information	149
9.3.1.85	MDT Configuration	149
9.3.1.86	M4 Configuration.....	150
9.3.1.87	M6 Configuration.....	150
9.3.1.88	M7 Configuration.....	150
9.3.1.89	MDT PLMN List	151
9.3.1.90	EHC Parameters	151
9.3.1.91	DAPS Request Information.....	152
9.3.1.92	Early Forwarding COUNT Information.....	152
9.3.1.93	Alternative QoS Parameters Set List.....	153
9.3.1.94	Extended Slice Support List.....	154
9.3.1.95	Extended gNB-CU-CP Name.....	154
9.3.1.96	Extended gNB-CU-UP Name	154
9.3.1.97	Extended NR CGI Support List	154
9.3.1.98	Direct Forwarding Path Availability	155
9.3.1.99	IAB-donor-CU-UP PSK Info	155
9.3.1.100	ECGI Support List	155
9.3.1.101	ECGI	155
9.3.1.102	UE Slice Maximum Bit Rate List	156
9.3.1.103	Survival Time.....	156
9.3.1.104	UDC Parameters	156
9.3.1.105	SCG Activation Status	157
9.3.1.106	gNB-CU-CP MBS E1AP ID.....	157
9.3.1.107	gNB-CU-UP MBS E1AP ID.....	157
9.3.1.108	Global MBS Session ID	158
9.3.1.109	DU Cell Reference	158
9.3.1.110	gNB-CU-UP MBS Support Information.....	158
9.3.1.111	MBS Area Session ID	158
9.3.1.112	BC Bearer Context NG-U TNL Info at 5GC	159
9.3.1.113	MBS NG-U Information at 5GC.....	159
9.3.1.114	BC MRB Setup Configuration	159
9.3.1.115	Requested Action for Available Shared NG-U Termination.....	160
9.3.1.116	BC Bearer Context NG-U TNL Info at NG-RAN.....	160
9.3.1.117	MBS NG-U Information at NG-RAN	160
9.3.1.118	BC Bearer Context F1-U TNL Info at CU	161
9.3.1.119	BC Bearer Context F1-U TNL Info at DU	161
9.3.1.120	MC MRB Setup Configuration	162
9.3.1.121	MC Bearer Context NG-U TNL Info at NG-RAN.....	162
9.3.1.122	MC Bearer Context NG-U TNL Info at 5GC.....	162
9.3.1.123	MC Bearer Context NG-U TNL Info at NG-RAN Request.....	163

9.3.1.124	MC Bearer Context F1-U TNL Info at DU	163
9.3.1.125	MBS Multicast F1-U Context Descriptor	163
9.3.1.126	Void.....	164
9.3.1.127	MC Bearer Context NG-U TNL Info at NG-RAN Modify Response.....	164
9.3.1.128	Discard Timer Extended	164
9.3.1.129	MDT PLMN Modification List.....	164
9.3.1.130	MRB Progress Information	164
9.3.1.131	MRB Progress Information Type	165
9.3.1.132	MC Forwarding Resource ID	165
9.3.1.133	MBS Session Associated Information.....	165
9.3.1.134	MC Forwarding Resource Request	165
9.3.1.135	MC Forwarding Resource Indication	166
9.3.1.136	MC Forwarding Resource Response.....	166
9.3.1.137	MC Forwarding Resource Release.....	166
9.3.1.138	MC Forwarding Resource Release Indication.....	166
9.3.1.139	Multicast F1-U Context ReferenceE1	167
9.3.1.139a	Broadcast F1-U Context ReferenceE1	167
9.3.1.140	MBS Session Associated Information Non-Support-to-Support.....	167
9.3.1.141	MBS Session Associated Information List	167
9.3.1.142	MT-SDT Information.....	168
9.3.1.143	PDU Set QoS Information	168
9.3.1.144	N6 Jitter Information.....	168
9.3.1.145	ECN Marking or Congestion Information Reporting Request	168
9.3.1.146	PSI Based Discard Timer	169
9.3.1.147	BC Bearer Context NG-U TNL Info at NG-RAN Request.....	169
9.3.1.148	MBS NG-U Information at NG-RAN Request	169
9.3.1.149	UE Performance	170
9.3.1.150	Average Packet Delay	170
9.3.1.151	Data Collection ID	170
9.3.1.152	Available Bitrate Report Threshold List	170
9.3.1.153	UE Performance Collection Configuration	171
9.3.2	Transport Network Layer Related IEs	171
9.3.2.1	UP Transport Layer Information.....	171
9.3.2.2	CP Transport Layer Information	171
9.3.2.3	GTP-TEID.....	172
9.3.2.4	Transport Layer Address.....	172
9.3.2.5	Data Forwarding Information Request.....	172
9.3.2.6	Data Forwarding Information.....	172
9.3.2.7	Transport Network Layer Address Info	173
9.3.2.8	URI.....	173
9.3.2.9	User Plane Failure Indication	174
9.3.3	Container and List IE definitions	174
9.3.3.1	DRB To Setup List E-UTRAN	174
9.3.3.2	PDU Session Resource To Setup List	175
9.3.3.3	DRB Setup List E-UTRAN.....	176
9.3.3.4	DRB Failed List E-UTRAN.....	177
9.3.3.5	PDU Session Resource Setup List	177
9.3.3.6	PDU Session Resource Failed List.....	178
9.3.3.7	DRB To Setup Modification List E-UTRAN.....	178
9.3.3.8	DRB To Modify List E-UTRAN	179
9.3.3.9	DRB To Remove List E-UTRAN	179
9.3.3.10	PDU Session Resource To Setup Modification List	180
9.3.3.11	PDU Session Resource To Modify List	181
9.3.3.12	PDU Session Resource To Remove List.....	185
9.3.3.13	DRB Setup Modification List E-UTRAN	185
9.3.3.14	DRB Failed Modification List E-UTRAN	186
9.3.3.15	DRB Modified List E-UTRAN	186
9.3.3.16	DRB Failed To Modify List E-UTRAN.....	186
9.3.3.17	PDU Session Resource Setup Modification List.....	186
9.3.3.18	PDU Session Resource Failed Modification List.....	187
9.3.3.19	PDU Session Resource Modified List.....	188
9.3.3.20	PDU Session Resource Failed To Modify List	189

9.3.3.21	DRB Required To Modify List E-UTRAN.....	189
9.3.3.22	DRB Required To Remove List E-UTRAN.....	189
9.3.3.23	PDU Session Resource Required To Modify List.....	190
9.3.3.24	DRB Confirm Modified List E-UTRAN.....	190
9.3.3.25	PDU Session Resource Confirm Modified List	191
9.3.3.26	BC Bearer Context To Setup.....	191
9.3.3.27	BC Bearer Context To Setup Response	191
9.3.3.28	BC Bearer Context To Modify.....	192
9.3.3.29	BC Bearer Context To Modify Response.....	193
9.3.3.30	BC Bearer Context To Modify Required	194
9.3.3.31	BC Bearer Context To Modify Confirm	194
9.3.3.32	MC Bearer Context To Setup.....	194
9.3.3.33	MC Bearer Context To Setup Response.....	195
9.3.3.34	MC Bearer Context To Modify.....	195
9.3.3.35	MC Bearer Context To Modify Response.....	196
9.3.3.36	MC Bearer Context To Modify Required	197
9.3.3.37	MC Bearer Context To Modify Confirm	198
9.3.3.38	Associated Session ID.....	198
9.3.3.39	MBS Service Area	198
9.3.3.40	MBS Service Area information.....	199
9.3.3.41	5GS TAC	199
9.4	Message and Information Element Abstract Syntax (with ASN.1).....	199
9.4.1	General.....	199
9.4.2	Usage of private message mechanism for non-standard use.....	199
9.4.3	Elementary Procedure Definitions	201
9.4.4	PDU Definitions	211
9.4.5	Information Element Definitions	253
9.4.6	Common Definitions.....	330
9.4.7	Constant Definitions	331
9.4.8	Container Definitions.....	338
9.5	Message Transfer Syntax	341
9.6	Timers	341
10	Handling of unknown, unforeseen and erroneous protocol data.....	341
Annex A (informative): Change History		342
History		345

Foreword

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

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

Sample Document

get full document from standards.iteh.ai

1 Scope

The present document specifies the 5G radio network layer signalling protocol for the E1 interface. The E1 interface provides means for interconnecting a gNB-CU-CP and a gNB-CU-UP of a gNB within an NG-RAN, or for interconnecting a gNB-CU-CP and a gNB-CU-UP of an en-gNB within an E-UTRAN, or for interconnecting an eNB-CP and an eNB-UP of an eNB within an E-UTRAN, or for interconnecting an ng-eNB-CU-CP and an ng-eNB-CU-UP of an ng-eNB within an NG-RAN. The E1 Application Protocol (E1AP) supports the functions of E1 interface by signalling procedures defined in the present document. E1AP is developed in accordance to the general principles stated in TS 38.401 [2] and TS 37.480 [3].

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 38.401: "NG-RAN; Architecture Description".
- [3] 3GPP TS 37.480: "E1 general aspects and principles".
- [4] 3GPP TS 38.300: "NR; Overall description; Stage-2".
- [5] 3GPP TR 25.921 (version.7.0.0): "Guidelines and principles for protocol description and error".
- [6] 3GPP TS 38.413: "NG-RAN; NG Application Protocol (NGAP)".
- [7] ITU-T Recommendation X.691 (2002-07): "Information technology - ASN.1 encoding rules - Specification of Packed Encoding Rules (PER)".
- [8] ITU-T Recommendation X.680 (07/2002): "Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation".
- [9] ITU-T Recommendation X.681 (07/2002): "Information technology – Abstract Syntax Notation One (ASN.1): Information object specification".
- [10] 3GPP TS 38.331: "NR; Radio Resource Control (RRC); Protocol Specification".
- [11] 3GPP TS 23.401: "General Packet Radio Service (GPRS) Enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access".
- [12] 3GPP TS 23.203: "Policy and Charging Control Architecture".
- [13] 3GPP TS 33.501: "Security Architecture and Procedures for 5G System".
- [14] IETF RFC 5905: "Network Time Protocol Version 4: Protocol and Algorithms Specification".
- [15] 3GPP TS 29.281: "General Packet Radio System (GPRS) Tunnelling Protocol User Plane (GTPv1-U)".
- [16] 3GPP TS 38.414: "NG-RAN; NG Data Transport".
- [17] 3GPP TS 38.323: "NR; Packet Data Convergence Protocol (PDCP) specification".

- [18] 3GPP TS 37.482: "E1 Signalling Transport".
- [19] 3GPP TS 37.340: "NR; Multi-connectivity; Overall description; Stage-2".
- [20] 3GPP TS 23.501: "System Architecture for the 5G System".
- [21] Void
- [22] 3GPP TS 28.552: "Management and orchestration; 5G performance measurements".
- [23] 3GPP TS 23.003: "Numbering, addressing and identification".
- [24] 3GPP TS 32.422: "Trace control and configuration management".
- [25] 3GPP TS 36.300: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2".
- [26] 3GPP TS 32.425: "Performance measurements; Evolved Universal Terrestrial Radio Access Network (E-UTRAN)".
- [27] 3GPP TS 37.320: "Universal Terrestrial Radio Access (UTRA) and Evolved Universal Terrestrial Radio Access (E-UTRA); Radio measurement collection for Minimization of Drive Tests (MDT); Overall description; Stage 2".
- [28] 3GPP TS 38.474: "NG-RAN; F1 data transport".
- [29] 3GPP TS 29.244: "Interface between the Control Plane and the User Plane Nodes; Stage 3".
- [30] 3GPP TS 37.470: "W1 interface; General aspects and principles".
- [31] 3GPP TS 36.401: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Architecture description".
- [32] 3GPP TS 33.401: "3GPP System Architecture Evolution (SAE); Security architecture".
- [33] 3GPP TS 36.331: " Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification".
- [34] 3GPP TS 36.323: " Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Packet Data Convergence Protocol (PDCP) specification".
- [35] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces; Stage 3".
- [36] 3GPP TS 23.527: "5G System; Restoration procedures".
- [37] 3GPP TS 28.558: "Management and orchestration; UE level measurements for 5G system".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

Elementary Procedure: E1AP consists of Elementary Procedures (EPs). An Elementary Procedure is a unit of interaction between gNB-CU-CP and gNB-CU-UP, or between eNB-CP and eNB-UP, or between ng-eNB-CU-CP and ng-eNB-CU-UP. These Elementary Procedures are defined separately and are intended to be used to build up complete sequences in a flexible manner. If the independence between some EPs is restricted, it is described under the relevant EP description. Unless otherwise stated by the restrictions, the EPs may be invoked independently of each other as standalone procedures, which can be active in parallel. The usage of several E1AP EPs together is specified in stage 2 specifications (e.g., TS 37.480 [3]).