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Contents

Intellectual Property Rights	2
Legal Notice	2
Modal verbs terminology.....	2
Foreword.....	9
1 Scope	11
2 References	11
3 Measurement family and abbreviations.....	12
3.1 Measurement family.....	12
3.2 Abbreviations	13
4 Measurements related to eNodeB, Donor eNodeB and relay node.....	14
4.0 Applicability of measurements.....	14
4.1 RRC connection related measurements	15
4.1.1 RRC connection establishment	15
4.1.1.0 General	15
4.1.1.1 Attempted RRC connection establishments	15
4.1.1.2 Successful RRC connection establishments.....	15
4.1.1.3 Failed RRC connection establishments.....	16
4.1.1.4 Failed RRC connection establishment per failure cause	16
4.1.2 RRC connection re-establishment.....	16
4.1.2.0 General	16
4.1.2.1 Attempted RRC connection re-establishments.....	17
4.1.2.2 Successful RRC connection re-establishments	17
4.1.2.3 Failed RRC connection re-establishments	17
4.1.3 RRC connection number.....	18
4.1.3.1 Mean number of RRC Connections	18
4.1.3.2 Maximum number of RRC Connections.....	18
4.1.3.3 RRC connection usage per UE multi-RAT capability	19
4.1.4 RRC connection setup time	19
4.1.4.1 Mean RRC connection setup time.....	19
4.1.4.2 Maximum RRC connection setup time	19
4.1.5 UE CONTEXT Release	20
4.1.5.1 Number of UE CONTEXT Release Request initiated by eNodeB/RN.....	20
4.1.5.2 Successful UE CONTEXT Release	20
4.1.6 Inactivity timer.....	21
4.1.6.1 Number of successful RRC connection setups in relation to the time between successful RRC connection setup and last RRC connection release	21
4.2 E-RAB related measurements	21
4.2.0 General.....	21
4.2.1 E-RAB setup	21
4.2.1.1 Number of initial E-RABs attempted to setup	21
4.2.1.2 Number of initial E-RABs successfully established	22
4.2.1.3 Number of initial E-RABs failed to setup	22
4.2.1.4 Number of additional E-RABs attempted to setup.....	23
4.2.1.5 Number of additional E-RABs successfully established.....	23
4.2.1.6 Number of additional E-RABs failed to setup	24
4.2.1.7 Mean E-RAB Setup time	24
4.2.1.8 Maximum E-RAB Setup time.....	24
4.2.1.9 Number of E-RABs attempted to establish for incoming HOs	25
4.2.1.10 Number of E-RABs successfully established for incoming HOs.....	25
4.2.2 E-RAB release	26
4.2.2.1 Number of E-RABs requested to release initiated by eNodeB/RN per QCI	26
4.2.2.3 Number of E-RABs attempted to release	27
4.2.2.4 Number of E-RAB successfully released	27
4.2.2.5 Number of E-RAB failed to release	28

4.2.2.6	Number of released active E-RABs	28
4.2.2.7	Distribution of Normally Released Call (QCI1 E-RAB) Duration	29
4.2.2.8	Distribution of Abnormally Released Call (QCI1 E-RAB) Duration	29
4.2.2.9	Number of Normally Released Calls (QCI1 E-RAB) initiated by MME in RLF Detected Conditions	30
4.2.3	E-RAB modification	30
4.2.3.1	Number of E-RABs attempted to modify the QoS parameter	30
4.2.3.2	Number of E-RABs successfully modified the QoS parameter	31
4.2.3.3	Number of E-RABs failed to modify the QoS parameter	31
4.2.4	E-RAB activity	32
4.2.4.1	In-session activity time for UE.....	32
4.2.4.2	In-session activity time for E-RABs	32
4.2.5	E-RAB number	33
4.2.5.1	Average Number of simultaneous E-RABs.	33
4.2.5.2	Maximum Number of simultaneous E-RABs.	33
4.3	Handover related measurements.....	34
4.3.1	Intra-RAT Handovers	34
4.3.1.1	Intra-eNB/RN Handover related measurements.....	34
4.3.1.1.1	Attempted outgoing intra-eNB/RN handovers per handover cause.....	34
4.3.1.1.2	Successful outgoing intra-eNB/RN handovers per handover cause	34
4.3.1.1.3	Attempted outgoing intra-DeNB handover preparations from DeNB cell to RN per handover cause	35
4.3.1.1.4	Attempted outgoing intra-DeNB handover executions from DeNB cell to RN per handover cause	35
4.3.1.1.5	Successful outgoing intra-DeNB handover executions from DeNB cell to RN per handover cause	35
4.3.1.2	Inter-eNB Handover related measurements	36
4.3.1.2.1	Attempted outgoing inter-eNB handover preparations.....	36
4.3.1.2.2	Attempted outgoing inter-eNB handover executions per handover cause.....	36
4.3.1.2.3	Successful outgoing inter-eNB handover executions per handover cause.....	37
4.3.1.3	Handover measurements on neighbour cell basis	37
4.3.1.3.1	Attempted outgoing handovers per handover cause	37
4.3.1.3.2	Successful outgoing handovers per handover cause	38
4.3.1.3.3	Number of handover failures related with MRO	38
4.3.1.4	Intra- / Inter-frequency Handover related measurements.....	40
4.3.1.4.1	Attempted outgoing intra-frequency handovers	40
4.3.1.4.2	Successful outgoing intra-frequency handovers	40
4.3.1.4.3	Attempted outgoing inter-frequency handovers – gap-assisted measurement.....	40
4.3.1.4.4	Successful outgoing inter-frequency handovers – gap-assisted measurement.....	41
4.3.1.4.5	Attempted outgoing inter-frequency handovers – non gap-assisted measurement.....	41
4.3.1.4.6	Successful outgoing inter-frequency handovers – non gap-assisted measurement.....	41
4.3.1.5	Handover related measurements for DRX / non-DRX.....	42
4.3.1.5.1	Attempted outgoing handovers with DRX	42
4.3.1.5.2	Successful outgoing handovers with DRX	42
4.3.1.5.3	Attempted outgoing handovers non-DRX	42
4.3.1.5.4	Successful outgoing handovers non-DRX.....	43
4.3.1.6	Handover to cells outside the RN related measurements	43
4.3.1.6.1	Attempted preparations of outgoing handovers to the cells outside the RN.....	43
4.3.1.6.2	Attempted executions of outgoing handover to the cells outside the RN per handover cause	43
4.3.1.6.3	Successful executions of outgoing handover to the cells outside the RN per handover cause	44
4.3.1.7	Handover triggering measurements	44
4.3.1.7.1	Average quality of the serving cell when HO is triggered.....	44
4.3.1.7.2	Average quality of the neighboring cell when HO is triggered	45
4.3.2	Inter-RAT Handovers	45
4.3.2.1	Measurements related to inter-RAT Handovers – target cell of 3GPP and non-3GPP network technology	45
4.3.2.1.1	Attempted outgoing inter-RAT handovers per handover cause.....	45
4.3.2.1.2	Successful outgoing inter-RAT handovers per handover cause	46
4.3.2.1.3	Number of outgoing unnecessary handovers related with inter-RAT MRO	46
4.4	Cell level radio bearer QoS related measurements.....	47
4.4.1	Cell PDCP SDU bit-rate	47
4.4.1.1	Average DL cell PDCP SDU bit-rate.....	47

4.4.1.2	Average UL cell PDCP SDU bit-rate.....	47
4.4.1.3	Maximum DL cell PDCP SDU bit-rate.....	48
4.4.1.4	Maximum UL cell PDCP SDU bit-rate.....	48
4.4.1.5	Average DL cell control plane PDCP SDU bit-rate.....	48
4.4.1.6	Average UL cell control plane PDCP SDU bit-rate.....	49
4.4.2	Active UEs.....	49
4.4.2.1	Average number of active UEs on the DL per QCI	49
4.4.2.2	Average number of active UEs on the UL per QCI	49
4.4.2.3	Average number of active UEs per QCI	50
4.4.2.4	Average number of active UEs	50
4.4.3	Packet Delay and Drop Rate	51
4.4.3.1	Average DL PDCP SDU delay	51
4.4.3.2	DL PDCP SDU drop rate	51
4.4.4	Packet loss rate	52
4.4.4.1	DL PDCP SDU air interface loss rate	52
4.4.4.2	UL PDCP SDU loss rate	52
4.4.5	IP Latency measurements	53
4.4.5.1	IP Latency in DL, E-RAB level	53
4.4.6	IP Throughput measurements	53
4.4.6.1	IP Throughput in DL	53
4.4.6.2	IP Throughput in UL	54
4.4.6.3	Scheduled IP Throughput in DL	54
4.4.6.4	Scheduled IP Throughput in UL	55
4.4.6.5	Time duration of Scheduled IP Throughput in DL	55
4.4.6.6	Time duration of Scheduled IP Throughput in UL	56
4.4.6.7	DL scheduled IP throughput distribution.....	56
4.4.6.8	UL scheduled IP throughput distribution.....	56
4.4.7	PDCP data volume measurements	57
4.4.7.1	DL cell PDCP SDU Data Volume	57
4.4.7.2	UL cell PDCP SDU Data Volume	57
4.4.8	Measurements related to Quality of Service Cannot be Achieved in the Cell	58
4.4.8.1	Time Period the Requested IP throughput of GBR services Cannot be Achieved in the Cell	58
4.4.8.2	Time Period the Requested latency of GBR services Cannot be Achieved in the Cell	59
4.5	Radio resource utilization related measurements	59
4.5.1	DL PRB Usage for traffic	59
4.5.2	UL PRB Usage for traffic	60
4.5.3	DL Total PRB Usage	60
4.5.4	UL Total PRB Usage	61
4.5.5	RACH Usage	61
4.5.5.1	Mean number of RACH preambles received	61
4.5.5.2	Distribution of RACH preambles sent	61
4.5.5.3	Distribution of RACH access delay	62
4.5.5.4	Percentage of contentious RACH attempts	62
4.5.5.5	Number of UE RACH reports received	63
4.5.5.6	Percentage of time when all dedicated RACH preambles are used.....	63
4.5.6	Cell Unavailable Time	63
4.5.7	TB related measurements.....	64
4.5.7.1	Total Number of DL TBs	64
4.5.7.2	Error Number of DL TBs	64
4.5.7.3	Total Number of UL TBs	64
4.5.7.4	Error Number of UL TBs	65
4.5.8	Power utilization measurements	65
4.5.8.1	Maximum carrier transmit power.....	65
4.5.8.2	Mean carrier transmit power	65
4.5.9	PRB Full Utilisation.....	66
4.5.9.1	DL PRB full utilisation	66
4.5.9.2	UL PRB full utilisation	66
4.5.10	Distribution of DL total PRB usage	66
4.5.11	Distribution of UL total PRB usage	67
4.6	UE-associated logical S1-connection related measurements.....	67
4.6.1	UE-associated logical S1-connection establishment.....	67
4.6.1.1	Attempted UE-associated logical S1-connection establishment from eNB to MME.....	67

4.6.1.2	Successful UE-associated logical S1-connection establishment from eNB to MME	68
4.7	Paging related measurements	68
4.7.1	Paging Performance	68
4.7.1.1	Number of paging records discarded at the eNodeB/RN	68
4.7.1.2	Number of paging records received by the eNodeB/RN	68
4.8	Measurements related to equipment resources	69
4.8.1	eNodeB/RN processor usage	69
4.8.1.1	Mean processor usage	69
4.8.1.2	Peak processor usage	69
4.9	Common LAs of overlapping RAT's coverage	70
4.9.1	Number of incoming IRAT mobility events per LA	70
4.10	RF Measurements	70
4.10.1	CQI Distribution	70
4.10.1.0	General	70
4.10.1.1	Wideband CQI distribution	70
4.10.1.2	Average sub-band CQI	71
4.10.2	Timing Advance Distribution	71
4.11	SCell scheduling related measurements in CA	71
4.11.0	Introduction	71
4.11.1	Attempted PUCCH allocations for SCell scheduling in Carrier Aggregation	72
4.11.2	Successful PUCCH allocations for SCell scheduling in Carrier Aggregation	72
4.11.3	Failed PUCCH allocations for SCell scheduling in Carrier Aggregation	72
4.12	Power, Energy and Environmental (PEE) measurements	73
4.12.0	Applicability of measurements	73
4.12.1	Power	73
4.12.1.1	Average Power	73
4.12.1.2	Minimum Power	73
4.12.1.3	Maximum Power	73
4.12.2	Energy	74
4.12.3	Temperature	74
4.12.3.1	Average Temperature	74
4.12.3.2	Minimum Temperature	74
4.12.3.3	Maximum Temperature	75
4.12.4	Voltage	75
4.12.5	Current	75
4.12.6	Humidity	76
4.13	LWA related measurements	76
4.13.1	User data transmission on Xw interface for non-collocated LWA	76
4.13.1.1	Number of octets of outgoing LWA PDUs transmitted over Xw interface	76
4.13.1.2	Mean number of UEs associated with WLAN	76
4.13.1.3	Number of UEs with DL LWA PDUs successfully transmitted over Xw interface	77
4.13.2	RRC procedures for LWA	77
4.13.2.1	Number of attempted WLAN additions to the LWA WLAN mobility set	77
4.13.2.2	Number of successful WLAN additions to the LWA WLAN mobility set	77
4.13.2.3	Number of attempted WLAN releases from the LWA WLAN mobility set	78
4.13.2.4	Number of successful WLAN releases from the LWA WLAN mobility set	78
4.13.2.5	Number of attempted additions of LWA DRB	78
4.13.2.6	Number of successful additions of LWA DRB	78
4.13.2.7	Number of attempted reconfigurations of LTE DRB to LWA DRB	79
4.13.2.8	Number of successful reconfigurations of LTE DRB to LWA DRB	79
4.13.2.9	Number of attempted reconfigurations of LWA DRB	79
4.13.2.10	Number of successful reconfigurations of LWA DRB	80
4.14	LWIP related measurements	80
4.14.1	User data transmission via WLAN for LWIP	80
4.14.1.1	Number of octets of DL LWIPEP PDUs	80
4.14.1.2	Number of octets of UL LWIPEP PDUs	80
4.14.1.3	Number of UEs with DL LWIPEP PDUs	81
4.14.1.4	Number of UEs with UL LWIPEP PDUs	81
4.14.2	RRC procedures for LWIP	81
4.14.2.1	Number of attempted WLAN additions to the LWIP WLAN mobility set	81
4.14.2.2	Number of successful WLAN additions to the LWIP WLAN mobility set	82
4.14.2.3	Number of attempted WLAN releases from the LWIP WLAN mobility set	82

4.14.2.4	Number of successful WLAN releases from the LWIP WLAN mobility set	82
4.14.2.5	Number of attempted additions of LWIP DRB	82
4.14.2.6	Number of successful additions of LWIP DRB	83
4.14.2.7	Number of attempted reconfigurations of LTE DRB to LWIP DRB	83
4.14.2.8	Number of successful reconfigurations of LTE DRB to LWIP DRB	83
4.14.2.9	Number of attempted reconfigurations of LWIP DRB	84
4.14.2.10	Number of successful reconfigurations of LWIP DRB	84
4.15	WLAN connection related measurements	84
4.15.1	Number of WLAN connection status reports	84
4.16	E-UTRA-NR Dual Connectivity related measurements	85
4.16.1	Secondary Node Addition	85
4.16.1.1	Number of Secondary Node Additions without SN terminated bearers	85
4.16.1.2	Successful Secondary Node Additions without SN terminated bearers	85
4.16.1.3	Failed Secondary Node Additions without SN terminated bearers	86
4.16.1.4	Number of Secondary Node Additions with SN terminated bearers	86
4.16.1.5	Successful Secondary Node Additions with SN terminated bearers	87
4.16.1.6	Failed Secondary Node Additions with SN terminated bearers	87
4.16.1.7	Number of Path Update Request at Secondary Node Additions	87
4.16.1.8	Number of Path Update Successful at Secondary Node Additions	88
4.16.1.9	Number of SN terminated bearers attempted to setup at Secondary Node Additions	88
4.16.1.10	Number of Successful prepared SN terminated bearers at Secondary Node Additions	89
4.16.1.11	Number of Successful reconfigured SN terminated bearers at Secondary Node Additions	89
4.16.1.12	Number of SN terminated bearers Path Update at Secondary Node Additions	89
4.16.1.13	Number of Successful SN terminated bearers Path Update at Secondary Node Additions	90
5	Measurements related to Relay Node	91
5.1	DeNB Reconfiguration related measurements	91
5.1.1	RN Reconfiguration	91
5.1.1.1	Number of RN Reconfiguration attempts	91
5.1.1.2	Number of RN Reconfiguration Completed	91
6	Measurements related to Measurement Report	91
6.1	RSRP related measurements	91
6.2	RSRQ related measurements	92
6.3	UE power headroom related measurements	93
6.4	UE Rx – Tx time difference related measurements	93
6.5	AOA related measurements	94
6.6	SINR related measurements	94

Annex A (informative): Use cases for performance measurements definition.....96

A.0	Introduction	96
A.1	Monitor of call(/session) setup performance	96
A.2	Monitoring of E-RAB release	96
A.3	Monitor of E-RAB level QoS modification	97
A.4	Overview handover related Use Cases	98
A.5	Monitor of cell level QoS and radio resource utilisation	99
A.6	Monitor of the number of connected users	102
A.7	Monitoring of interference situation	103
A.8	Monitor of ARQ and HARQ performance	103
A.9	Monitoring of RF performance	103
A.10	Monitor of paging performance	104
A.11	Use case of eNodeB processor usage	104
A.12	Monitor of simultaneous E-RABs	104
A.13	Monitoring of Mobility Robustness Optimization (MRO)	104

A.14 Monitor of BLER performance	105
A.15 Monitoring of common LAs of overlapping target RAT's coverage	105
A.16 Monitoring of Energy Saving	106
A.17 Monitoring of RNRconfiguration	106
A.18 Monitoring of E-RAB setup for incoming HOs	106
A.19 Use case of RSRP	106
A.20 Use case of RSRQ	107
A.21 Use case of UE power headroom	107
A.22 Use case of UE Rx-Tx time difference related measurements	107
A.23 Use case of AOA	107
A.24 Monitoring of SCell scheduling on PUCCH in Carrier Aggregation	108
A.25 Evaluation of long inactivity timer	108
A.26 Monitoring of Power, Energy and Environmental (PEE) parameters	108
A.27 Use case of UE IP throughput Distribution	108
A.28 Monitor of the number of active UEs	109
A.29 Monitor of user data transmission over Xw interface for non-collocated LWA	109
A.30 Monitor of RRC procedures for LWA	109
A.31 Monitoring of user data transmission via WLAN for LWIP	110
A.32 Monitoring of RRC procedures for LWIP	110
A.33 Monitoring of WLAN connection status	110
A.34 Monitor of Secondary Node Addition for E-UTRA-NR Dual Connectivity	110
A.35 Monitoring of RRC connection usage per UE multi-RAT capability	110
A.36 Monitor of E-RAB release	111
A.37 Monitoring of RS-SINR	111
Annex B (informative): Change history	112
History	116

Foreword

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Introduction

The present document is part of a TS-family covering the 3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication management; as identified below:

- 32.401 Performance Management (PM); Concept and requirements
- 32.402 Performance Management (PM); Performance measurements – GSM
- 32.404 Performance Management (PM); Performance measurements - Definitions and template
- 32.405 Performance Management (PM); Performance measurements Universal Terrestrial Radio Access Network (UTRAN)
- 32.406 Performance Management (PM); Performance measurements Core Network (CN) Packet Switched (PS) domain
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- 32.409 Performance Management (PM); Performance measurements IP Multimedia Subsystem (IMS)
- 32.425 Performance Management (PM); Evolved Performance measurements Universal Terrestrial Radio Access Network (E-UTRAN)**
- 32.426 Performance Management (PM); Evolved Packet Core (EPC)

The present document is part of a set of specifications, which describe the requirements and information model necessary for the standardised Operation, Administration and Maintenance (OA&M) of a multi-vendor E-UTRAN and EPC system.

During the lifetime of an E-UTRAN, its logical and physical configuration will undergo changes of varying degrees and frequencies in order to optimise the utilisation of the network resources. These changes will be executed through network configuration management activities and/or network engineering, see TS 32.600 [3].

Many of the activities involved in the daily operation and future network planning of an E-UTRAN require data on which to base decisions. This data refers to the load carried by the network and the grade of service offered. In order to produce this data performance measurements are executed in the NEs, which comprise the network. The data can then be transferred to an external system, e.g. an Operations System (OS) in TMN terminology, for further evaluation. The purpose of the present document is to describe the mechanisms involved in the collection of the data and the definition of the data itself.

Annex B of TS 32.404 helps in the definition of new performance measurements that can be submitted to 3GPP for potential adoption and inclusion in the present document. Annex B of TS 32.404 discusses a top-down performance measurement definition methodology that focuses on how the end-user of performance measurements can use the measurements.

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[ETSI TS 132 425 V18.0.0 \(2024-05\)](https://standards.iteh.ai/catalog/standards/etsi/47f065c1-20d0-450e-a122-b7731e99e0f2/etsi-ts-132-425-v18-0-0-2024-05)

<https://standards.iteh.ai/catalog/standards/etsi/47f065c1-20d0-450e-a122-b7731e99e0f2/etsi-ts-132-425-v18-0-0-2024-05>

1 Scope

The present document describes the measurements for E-UTRAN.

TS 32.401 [5] describes Performance Management concepts and requirements.

The present document is valid for all measurement types provided by an implementation of an E-UTRAN.

Only measurement types that are specific to E-UTRAN are defined within the present documents. Vendor specific measurement types used in E-UTRAN are not covered. Instead, these could be applied according to manufacturer's documentation.

Measurements related to "external" technologies (such as ATM or IP) as described by "external" standards bodies (e.g. ITU-T or IETF) shall only be referenced within this specification, wherever there is a need identified for the existence of such a reference.

The definition of the standard measurements is intended to result in comparability of measurement data produced in a multi-vendor network, for those measurement types that can be standardised across all vendors' implementations.

The structure of the present document is as follows:

- Header 1: Network Element (e.g. measurements related to eNodeB);
- Header 2: Measurement function (e.g. RRC connection setup related measurements);
- Header 3: Measurements.

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 and/or edition number or version number) 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 TS 32.101: "Telecommunication management; Principles and high level requirements".
- [2] 3GPP TS 32.102: "Telecommunication management; Architecture".
- [3] 3GPP TS 32.600: "Telecommunication management; Configuration Management (CM); Concept and high-level requirements".
- [4] Void.
- [5] 3GPP TS 32.401: "Telecommunication management; Performance Management (PM); Concept and requirements".
- [6] 3GPP TS 32.404: "Performance Management (PM); Performance measurements - Definitions and template".
- [7] 3GPP TS 32.762: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN) Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)".
- [8] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC) protocol specification".

- [9] 3GPP TS 36.413: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN); S1 Application Protocol (S1AP)".
- [10] 3GPP TS 36.423: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN); X2 application protocol (X2AP)".
- [11] 3GPP TS 36.314: "Evolved Universal Terrestrial Radio Access (E-UTRA); Layer 2 – Measurements".
- [12] 3GPP TS 36.300: "Evolved Universal Terrestrial Radio Access (E-UTRA); and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2".
- [13] 3GPP TS 32.450: "Telecommunication management; Key Performance Indicators (KPI) for E-UTRAN: Definitions".
- [14] 3GPP TS 36.304: "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) procedures in idle mode".
- [15] 3GPP TS 32.522: "Technical Specification Group Services and System Aspects; Telecommunication management; Self-Organizing Networks (SON) Policy Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".
- [16] 3GPP TS 36.321: "Evolved Universal Terrestrial Radio Access (E-UTRA) Medium Access Control (MAC) protocol specification".
- [17] 3GPP TS 23.272, "Circuit Switched (CS) fallback in Evolved Packet System (EPS); Stage 2".
- [18] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification".
- [19] 3GPP TS 36.133: "Evolved Universal Terrestrial Radio Access (E-UTRA); Requirements for support of radio resource management".
- [20] ES 203 228 V1.0.0: "Environmental Engineering (EE); Assessment of mobile network energy efficiency".
- [21] ES 203 228 V1.0.0: "Environmental Engineering (EE); Assessment of mobile network energy efficiency".
- [22] 3GPP TS 32.130: "Network sharing; Concepts and requirements".
- [23] ETSI ES 202 336-12 V1.1.1: "Environmental Engineering (EE); Monitoring and control interface for infrastructure equipment (power, cooling and building environment systems used in telecommunication networks); Part 12: ICT equipment power, energy and environmental parameters monitoring information model".
- [24] 3GPP TS 36.465: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN) and Wireless LAN (WLAN); Xw interface user plane protocol".
- [25] 3GPP TS 36.361: "Evolved Universal Terrestrial Radio Access (E-UTRA); LTE-WLAN Radio Level Integration Using IPsec Tunnel (LWIP) encapsulation; Protocol specification".

3 Measurement family and abbreviations

3.1 Measurement family

The measurement names defined in the present document are all beginning with a prefix containing the measurement family name (e.g. RRC.AttConnEstab.Cause). This family name identifies all measurements which relate to a given functionality and it may be used for measurement administration (see TS 32.401 [5]).

The list of families currently used in the present document is as follows:

- DRB (measurements related to Data Radio Bearer).
- RRC (measurements related to Radio Resource Control).
- RRU (measurements related to Radio Resource Utilization).
- ERAB (measurements related to E-RAB).
- HO (measurements related to Handover).
- S1SIG (measurements related to S1 Signalling).
- SRB (measurements related to Signalling Radio Bearer).
- PAG (measurements related to Paging).
- EQPT (measurements related to Equipment).
- UECNTX (measurements related to UE CONTEXT).
- TB (measurements related to Transport Block).
- MR (measurements related to Measurement Report).
- PEE (measurements related to Power, Energy and Environmental (PEE) parameters).
- LWI (measurements related to LTE and WLAN integration, including LWA and LWIP).
- ENDC (measurements related to E-UTRA-NR Dual Connectivity).

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

3GPP	3G Partnership Project
BLER	Block Error Rate
CRC	Cyclic Redundancy Check
EPS	Evolved Packet System
EQPT	Equipment
E-UTRAN	Evolved UTRAN
E-RAB	E-UTRAN Radio Access Bearer
HO	Handover
kbit	kilobit (1000 bits)
MCE	Multi-cell/multicast Coordination Entity
MOP	Master Operator
PCell	Primary Cell
PEE	Power, Energy and Environmental
QoS	Quality of Service
RN	Relay Node
SCell	Secondary Cell
TB	Transport Block
UTRAN	Universal Terrestrial Radio Access Network

NOTE: Below there's a list of abbreviations used within the measurement types for field E of the measurement template (see 3GPP TS 32.404 [6]).