ETSI TS 102 250-2 V2.3.1 (2014-08)

**Speech and multimedia Transmission Quality (STQ);
QoS aspects for popular services in mobile networks;
Part 2: Definition of Quality of
Service parameters and their computation**

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/13d1051c-4e3b-469c-a245-f65a009619b0/etsi-ts-102-250-2-v2.3.1-2014-08

Reference
RTS/STQ-00190m

Keywords
3G, GSM, network, QoS, service, speech

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 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/13110f1c-45b-46c-b245-16fa0096f499/etsi-ts-102-250-2-v2.3.1-2014-08

Important notice

The present document can be downloaded from:
http://www.etsi.org

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 only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

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
http://portal.etsi.org/tb/status/status.asp

If you find errors in the present document, please send your comment to one of the following services:
http://portal.etsi.org/chaircor/ETSI_support.asp

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.

© European Telecommunications Standards Institute 2014.
All rights reserved.

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

Contents

Intellectual Property Rights 20
Foreword 20
Modal verbs terminology 21
Introduction 21
1 Scope 22
2 References 22
2.1 Normative references 22
2.2 Informative references 24
3 Definitions and abbreviations 24
3.1 Definitions 24
3.2 Abbreviations 26
4 QoS Parameter Basics 28
4.1 General Overview 28
4.2 FTP, HTTP and E-Mail Issues 29
4.2.1 Performance Enhancement Proxies 31
4.3 Timeouts 31
4.4 Trigger points 31
4.5 Overview of technology dependent QoS parameters 32
5 Service independent QoS Parameters 33
5.1 Radio Network Unavailability [%] 33
5.1.1 Abstract Definition 33
5.1.2 Abstract Equation 33
5.1.3 Trigger Points 33
5.2 Network Non-Accessibility [%] 34
5.2.1 {Manual | Automatic} Network Selection and Registration Failure Ratio [%] 34
5.2.1.1 Abstract Definition 34
5.2.1.2 Abstract Equation 34
5.2.1.3 Trigger Points 34
5.2.2 {Manual | Automatic} Network Selection and Registration Time [s] 37
5.2.2.1 Abstract Definition 37
5.2.2.2 Abstract Equation 37
5.2.2.3 Trigger Points 38
5.3 Attach Failure Ratio [%] 39
5.3.1 Abstract Definition 39
5.3.2 Abstract Equation 39
5.3.3 Trigger Points 39
5.4 Attach Setup Time [s] 41
5.4.1 Abstract Definition 41
5.4.2 Abstract Equation 41
5.4.3 Trigger Points 41
5.5 PDP Context Activation Failure Ratio [%] 42
5.5.1 Abstract Definition 42
5.5.2 Abstract Equation 42
5.5.3 Trigger Points 43
5.6 PDP Context Activation Time [s] 44
5.6.1 Abstract Definition 44
5.6.2 Abstract Equation 44
5.6.3 Trigger Points 44
5.7 PDP Context Cut-off Ratio [%] 45
5.7.1 Abstract Definition 45
5.7.2 Abstract Equation 45
5.7.3 Trigger Points 45

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/13d1f051c-4e3b-469c-a245-f65a0096f499/etsi-ts-102-250-2-v2.3.1-2014-08

5.8 Data Call Access Failure Ratio [%] 46
5.8.1 Abstract Definition 46
5.8.2 Abstract Equation 46
5.8.3 Trigger Points 47
5.9 Data Call Access Time [s] 47
5.9.1 Abstract Definition 47
5.9.2 Abstract Equation 47
5.9.3 Trigger Points 48
5.10 DNS Host Name Resolution Failure Ratio [%] 48
5.10.1 Abstract Definition 48
5.10.2 Abstract Equation 48
5.10.3 Trigger Points 49
5.11 DNS Host Name Resolution Time [s] 49
5.11.1 Abstract Definition 49
5.11.2 Abstract Equation 49
5.11.3 Trigger Points 49
5.12 Default EPS Bearer Contexts 50
5.12.1 Default EPS Bearer Context Activation Failure Ratio [%] 50
5.12.1.1 Abstract Definition 50
5.12.1.2 Abstract Equation 50
5.12.1.3 Trigger Points 50
5.12.2 Default EPS Bearer Context Activation Time[s] 51
5.12.2.1 Abstract Definition 51
5.12.2.2 Abstract Equation 51
5.12.2.3 Trigger Points 51
5.12.3 Default EPS Bearer Context Cut-off Ratio [%] 52
5.12.3.1 Abstract Definition 52
5.12.3.2 Abstract Equation 52
5.12.3.3 Trigger Points 53
5.13 Dedicated EPS Bearer Contexts 53
5.13.1 Dedicated EPS Bearer Context Activation Failure Ratio [%] 53
5.13.1.1 Abstract Definition 53
5.13.1.2 Abstract Equation 53
5.13.1.3 Trigger Points 54
5.13.2 Dedicated EPS Bearer Context Activation Time [s] 54
5.13.2.1 Abstract Definition 54
5.13.2.2 Abstract Equation 54
5.13.2.3 Trigger Points 55
5.13.3 Dedicated EPS Bearer Context Cut-off Ratio [%] 55
5.13.3.1 Abstract Definition 55
5.13.3.2 Abstract Equation 55
5.13.3.3 Trigger Points 56

6 Direct Services QoS Parameters 56
6.1 File Transfer (FTP) 56
6.1.1 FTP {Download|Upload} Service Non-Accessibility [%] 56
6.1.2 FTP {Download|Upload} Setup Time [s] 56
6.1.3 FTP {Download|Upload} IP-Service Access Failure Ratio [%] 56
6.1.3.1 Abstract Definition 56
6.1.3.2 Abstract Equation 57
6.1.3.3 Trigger Points 57
6.1.4 FTP {Download|Upload} IP-Service Setup Time [s] 57
6.1.4.1 Abstract Definition 57
6.1.4.2 Abstract Equation 57
6.1.4.3 Trigger Points 58
6.1.5 FTP {Download|Upload} Session Failure Ratio [%] 58
6.1.5.1 Abstract Definition 58
6.1.5.2 Abstract Equation 58
6.1.5.3 Trigger Points 58
6.1.6 FTP {Download|Upload} Session Time [s] 59
6.1.6.1 Abstract Definition 59
6.1.6.2 Abstract Equation 59

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/13d1051e-4e3b-469c-a245-f65a0096f4a9/etsi-ts-102-250-2-v2.3.1-2014-08

6.1.6.3 Trigger Points 59
6.1.7 FTP {Download|Upload} Mean Data Rate [kbit/s] 59
6.1.7.1 Abstract Definition 59
6.1.7.2 Abstract Equation 60
6.1.7.3 Trigger Points 60
6.1.8 FTP {Download|Upload} Data Transfer Cut-off Ratio [%] 60
6.1.8.1 Abstract Definition 60
6.1.8.2 Abstract Equation 60
6.1.8.3 Trigger Points 61
6.2 Mobile Broadcast 61
6.2.1 Mobile Broadcast Network Non-Availability {Broadcast Bearer} 63
6.2.1.1 Abstract Definition 63
6.2.1.2 Abstract Equation 63
6.2.1.3 Trigger Points 63
6.2.2 Mobile Broadcast Program Menu Non-Accessibility {Bootstrapping Bearer, ESG Retrieval Bearer} 63
6.2.2.1 Abstract Definition 63
6.2.2.2 Abstract Equation 64
6.2.2.3 Trigger Points 64
6.2.3 Mobile Broadcast Program Menu Access Time {Bootstrapping Bearer, ESG Retrieval Bearer} 64
6.2.3.1 Abstract Definition 64
6.2.3.2 Abstract Equation 64
6.2.3.3 Trigger Points 64
6.2.4 Mobile Broadcast Channel Non-Accessibility {Broadcast Bearer} 65
6.2.4.1 Abstract Definition 65
6.2.4.2 Abstract Equation 65
6.2.4.3 Trigger Points 65
6.2.5 Mobile Broadcast Channel Access Time {Broadcast Bearer} 65
6.2.5.1 Abstract Definition 65
6.2.5.2 Abstract Equation 65
6.2.5.3 Trigger Points 65
6.2.6 Mobile Broadcast Interactivity Response Failure Ratio {Mobile Network Bearer} {Broadcast Bearer} 66
6.2.6.1 Abstract Definition 66
6.2.6.2 Abstract Equation 66
6.2.6.3 Trigger Points 66
6.2.7 Mobile Broadcast Interactivity Response Time {Mobile Network Bearer} {Broadcast Bearer} 67
6.2.7.1 Abstract Definition 67
6.2.7.2 Abstract Equation 67
6.2.7.3 Trigger Points 67
6.2.8 Mobile Broadcast Session Cut-off Ratio {Broadcast Bearer} 67
6.2.8.1 Abstract Definition 67
6.2.8.2 Abstract Equation 67
6.2.8.3 Trigger Points 68
6.2.9 Mobile Broadcast Service Integrity {Broadcast Bearer} 68
6.2.10 Mobile Broadcast Reproduction Soft Cut-off Ratio {Broadcast Bearer} 68
6.2.10.1 Abstract Definition 68
6.2.10.2 Abstract Equation 68
6.2.10.3 Trigger Points 69
6.2.11 Mobile Broadcast Reproduction Hard Cut-off Ratio {Broadcast Bearer} 69
6.2.11.1 Abstract Definition 69
6.2.11.2 Abstract Equation 69
6.2.11.3 Trigger Points 69
6.2.12 Mobile Broadcast Audio Quality {Broadcast Bearer} 70
6.2.12.1 Abstract Definition 70
6.2.12.2 Abstract Equation 70
6.2.12.3 Trigger Points 70
6.2.13 Mobile Broadcast Video Quality {Broadcast Bearer} 70
6.2.13.1 Abstract Definition 70
6.2.13.2 Abstract Equation 70
6.2.13.3 Trigger Points 70
6.3 Ping 71
6.3.1 Ping Round Trip Time [ms] 71

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/13d1051c-4e3b-469c-a245-f65a0096f429/etsi-ts-102-250-2-v2.3.1-2014-08

6.3.1.1 Abstract Definition 71
6.3.1.2 Abstract Equation 71
6.3.1.3 Trigger Points 71
6.4 Push to Talk over Cellular (PoC) 71
6.4.1 Definitions 72
6.4.2 Generic Signal Flow 73
6.4.3 PoC Registration Failure Ratio [%] 74
6.4.3.1 Abstract Definition 74
6.4.3.2 Abstract Equation 75
6.4.3.3 Trigger Points 75
6.4.4 PoC Registration Time [s] 75
6.4.4.1 Abstract Definition 75
6.4.4.2 Abstract Equation 76
6.4.4.3 Trigger Points 76
6.4.5 PoC Publish Failure Ratio [%] 76
6.4.5.1 Abstract Definition 76
6.4.5.2 Abstract Equation 77
6.4.5.3 Trigger Points 77
6.4.6 PoC Publish Time [s] 77
6.4.6.1 Abstract Definition 77
6.4.6.2 Abstract Equation 77
6.4.6.3 Trigger Points 78
6.4.7 PoC Registration Failure Ratio (long) [%] 78
6.4.7.1 Abstract Definition 78
6.4.7.2 Abstract Equation 78
6.4.7.3 Trigger Points 78
6.4.8 PoC Registration Time (long) [s] 79
6.4.8.1 Abstract Definition 79
6.4.8.2 Abstract Equation 79
6.4.8.3 Trigger Points 79
6.4.9 PoC Session Initiation Failure Ratio (on-demand) [%] 80
6.4.9.1 Abstract Definition 80
6.4.9.2 Abstract Equation 80
6.4.9.3 Trigger Points 80
6.4.10 PoC Session Initiation Time (on-demand) [s] 81
6.4.10.1 Abstract Definition 81
6.4.10.2 Abstract Equation 82
6.4.10.3 Trigger Points 82
6.4.11 PoC Session Media Parameters Negotiation Failure Ratio (pre-established) [%] 83
6.4.11.1 Abstract Definition 83
6.4.11.2 Abstract Equation 83
6.4.11.3 Trigger Points 83
6.4.12 PoC Session Media Parameters Negotiation Time (pre-established) [s] 84
6.4.12.1 Abstract Definition 84
6.4.12.2 Abstract Equation 84
6.4.12.3 Trigger Points 84
6.4.13 PoC Session Initiation Failure Ratio (pre-established) [%] 85
6.4.13.1 Abstract Definition 85
6.4.13.2 Abstract Equation 85
6.4.13.3 Trigger Points 86
6.4.14 PoC Session Initiation Time (pre-established) [s] 86
6.4.14.1 Abstract Definition 86
6.4.14.2 Abstract Equation 87
6.4.14.3 Trigger Points 87
6.4.15 PoC Session Setup Failure Ratio (on-demand) [%] 87
6.4.15.1 Abstract Definition 87
6.4.15.2 Abstract Equation 88
6.4.15.3 Trigger Points 88
6.4.16 PoC Session Setup Failure Ratio (pre-established) [%] 88
6.4.16.1 Abstract Definition 88
6.4.16.2 Abstract Equation 88
6.4.16.3 Trigger Points 89

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/13d1051c-fe3b-469c-a245-f65a0096f4e9/etsi-ts-102-250-2-v2.3.1-2014-08

6.4.17 PoC Session Setup Time [s] 89
6.4.17.1 Abstract Definition: 89
6.4.17.2 Abstract Equation 90
6.4.17.3 Trigger Points 90
6.4.18 PoC Push to Speak Failure Ratio [%] 90
6.4.18.1 Abstract Definition 90
6.4.18.2 Abstract Equation 90
6.4.18.3 Trigger Points 91
6.4.19 PoC Push to Speak Time [s] 91
6.4.19.1 Abstract Definition 91
6.4.19.2 Abstract Equation 91
6.4.19.3 Trigger Points 91
6.4.20 PoC Session Leaving Failure Ratio (on-demand) [%] 92
6.4.20.1 Abstract Definition 92
6.4.20.2 Abstract Equation 92
6.4.20.3 Trigger Points 92
6.4.21 PoC Session Leaving Time (on-demand) [s] 92
6.4.21.1 Abstract Definition 92
6.4.21.2 Abstract Equation 93
6.4.21.3 Trigger Points 93
6.4.22 PoC Session Leaving Failure Ratio (pre-established) [%] 93
6.4.22.1 Abstract Definition 93
6.4.22.2 Abstract Equation 93
6.4.22.3 Trigger Points 94
6.4.23 PoC Session Leaving Time (pre-established) [s] 94
6.4.23.1 Abstract Definition 94
6.4.23.2 Abstract Equation 94
6.4.23.3 Trigger Points 95
6.4.24 PoC Deregistration Failure Ratio [%] 95
6.4.24.1 Abstract Definition 95
6.4.24.2 Abstract Equation 95
6.4.24.3 Trigger Points 95
6.4.25 PoC Deregistration Time [s] 95
6.4.25.1 Abstract Definition 95
6.4.25.2 Abstract Equation 96
6.4.25.3 Trigger Points 96
6.4.26 PoC Busy Floor Response Failure Ratio [%] 96
6.4.26.1 Abstract Definition 96
6.4.26.2 Abstract Equation 96
6.4.26.3 Trigger Points 97
6.4.27 PoC Busy Floor Response Time [s] 97
6.4.27.1 Abstract Definition 97
6.4.27.2 Abstract Equation 97
6.4.27.3 Trigger Points 97
6.4.28 PoC Talk Burst Request Failure Ratio [%] 98
6.4.28.1 Abstract Definition 98
6.4.28.2 Abstract Equation 98
6.4.28.3 Trigger Points 98
6.4.29 PoC Talk Burst Request Time [s] 98
6.4.29.1 Abstract Definition 98
6.4.29.2 Abstract Equation 99
6.4.29.3 Trigger Points 99
6.4.30 PoC Talk Burst Cut-off Ratio [%] 99
6.4.30.1 Abstract Definition 99
6.4.30.2 Abstract Equation 99
6.4.30.3 Trigger Points 100
6.4.31 PoC Talk Burst Packet Drop Ratio [%] 100
6.4.31.1 Abstract Definition 100
6.4.31.2 Abstract Equation 101
6.4.31.3 Trigger Points 101
6.4.32 PoC Voice Transmission Delay (first) [s] 101
6.4.32.1 Abstract Definition 101

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/13d1f051c-4e3b-40dc-a215-f65a009f4f09/etsi-ts-102-250-2-v2.3.1-2014-08

6.4.32.2 Abstract Equation 102
6.4.32.3 Trigger Points 102
6.4.33 PoC Speech Transmission Delay (others) [s] 102
6.4.33.1 Abstract Definition 102
6.4.33.2 Abstract Equation 103
6.4.33.3 Trigger Points 103
6.4.34 PoC Speech Quality 103
6.4.35 Group Management QoS Parameter 103
6.4.36 Group Document related QoS Parameter 103
6.4.37 Instant Message QoS Parameter 103
6.5 Streaming Video 103
6.5.1 Definitions 103
6.5.1.1 Streaming Session or Session 103
6.5.2 Prerequisites 104
6.5.3 Streaming Scenarios 104
6.5.3.1 Generic Streaming Signalling Flow 104
6.5.3.2 Parameter Overview Chart 105
6.5.4 Streaming Service Non-Accessibility [%] 105
6.5.4.1 Abstract Definition 105
6.5.4.2 Abstract Equation 105
6.5.4.3 Trigger Points 106
6.5.5 Streaming Service Access Time [s] 106
6.5.5.1 Abstract Definition 106
6.5.5.2 Abstract Equation 106
6.5.5.3 Trigger Points 106
6.5.6 Streaming Reproduction Cut-off Ratio [%] 106
6.5.6.1 Abstract Definition 106
6.5.6.2 Abstract Equation 106
6.5.6.3 Trigger Points 107
6.5.7 Streaming Audio Quality 107
6.5.7.1 Abstract Definition 107
6.5.7.2 Abstract Equation 107
6.5.7.3 Trigger Points 107
6.5.8 Streaming Video Quality 107
6.5.8.1 Abstract Definition 107
6.5.8.2 Abstract Equation 107
6.5.8.3 Trigger Points 108
6.5.9 Streaming Audio/Video De-Synchronization 108
6.5.9.1 Abstract Definition 108
6.5.9.2 Abstract Equation 108
6.5.9.3 Trigger Points 108
6.5.10 Streaming Reproduction Start Failure Ratio [%] 108
6.5.10.1 Abstract Definition 108
6.5.10.2 Abstract Equation 108
6.5.10.3 Trigger Points 108
6.5.11 Streaming Reproduction Start Delay [s] 109
6.5.11.1 Abstract Definition 109
6.5.11.2 Abstract Equation 109
6.5.11.3 Trigger Points 109
6.5.12 Streaming Teardown Failure Ratio [%] 109
6.5.12.1 Abstract Definition 109
6.5.12.2 Abstract Equation 109
6.5.12.3 Trigger Points 109
6.5.13 Streaming Teardown Time [s] 110
6.5.13.1 Abstract Definition 110
6.5.13.2 Abstract Equation 110
6.5.13.3 Trigger Points 110
6.5.14 Streaming Rebuffering Failure Ratio [%] 110
6.5.14.1 Abstract Definition 110
6.5.14.2 Abstract Equation 110
6.5.14.3 Trigger Points 110
6.5.15 Streaming Rebuffering Time [s] 110

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/13d1051c-4e3b-469c-a245-f65a0096f499/etsi-ts-102-250-2-v2.3.1-2014-08

6.5.15.1 Abstract Definition 110
6.5.15.2 Abstract Equation 111
6.5.15.3 Trigger Points 111
6.6 Telephony 111
6.6.1 Telephony Service Non-Accessibility [%] 111
6.6.1.1 Abstract Definition 111
6.6.1.2 Abstract Equation 111
6.6.1.3 Trigger Points 111
6.6.2 Telephony Setup Time [s] 118
6.6.2.1 Abstract Definition 118
6.6.2.2 Abstract Equation 118
6.6.2.3 Trigger Points 118
6.6.3 Telephony Speech Quality on Call Basis 120
6.6.3.1 Abstract Definition 120
6.6.3.2 Abstract Equation 120
6.6.3.3 Trigger Points 120
6.6.4 Telephony Speech Quality on Sample Basis 120
6.6.4.1 Abstract Definition 120
6.6.4.2 Abstract Equation 121
6.6.4.3 Trigger Points 121
6.6.5 Telephony Cut-off Call Ratio [%] 121
6.6.5.1 Abstract Definition 121
6.6.5.2 Abstract Equation 121
6.6.5.3 Trigger Points 121
6.6.6 Telephony CLIP Failure Ratio [%] 122
6.6.6.1 Abstract Definition 122
6.6.6.2 Abstract Equation 122
6.6.6.3 Trigger Points 123
6.7 Video Telephony 123
6.7.1 Network Accessibility/Availability 123
6.7.2 Parameter Overview Chart 124
6.7.3 VT Service Non-Accessibility [%] 126
6.7.3.1 Abstract Definition 126
6.7.3.2 Abstract Equation 126
6.7.3.3 Trigger Points 126
6.7.4 VT Service Access Time [s] 127
6.7.4.1 Abstract Definition 127
6.7.4.2 Abstract Equation 127
6.7.4.3 Trigger Points 127
6.7.5 VT Audio/Video Setup Failure Ratio [%] 128
6.7.5.1 Abstract Definition 128
6.7.5.2 Abstract Equation 128
6.7.5.3 Trigger Points 128
6.7.6 VT Audio/Video Setup Time [s] 128
6.7.6.1 Abstract Definition 128
6.7.6.2 Abstract Equation 129
6.7.6.3 Trigger Points 129
6.7.7 VT Cut-off Call Ratio [%] 129
6.7.7.1 Abstract Definition 129
6.7.7.2 Abstract Equation 129
6.7.7.3 Trigger Points 130
6.7.8 VT Speech Quality on Call Basis 130
6.7.8.1 Abstract Definition 130
6.7.8.2 Abstract Equation 131
6.7.8.3 Trigger Points 131
6.7.9 VT Speech Quality on Sample Basis 132
6.7.9.1 Abstract Definition 132
6.7.9.2 Abstract Equation 132
6.7.9.3 Trigger Points 133
6.7.10 VT Video Quality 133
6.7.10.1 Abstract Definition 133
6.7.10.2 Abstract Equation 133

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/13d1f051c-4e3b-469c-a215-f65a009f6f09/etsi-ts-102-250-2-v2.3.1-2014-08

6.7.10.3 Trigger Points ... 134
6.7.11 VT End-To-End Mean One-Way Transmission Time [s] ... 134
6.7.11.1 Abstract Definition ... 134
6.7.11.2 Abstract Equation ... 134
6.7.11.3 Trigger Points ... 135
6.7.12 VT Audio/Video Synchronization [%] ... 135
6.7.12.1 Abstract Definition ... 135
6.7.12.2 Abstract Equation ... 135
6.7.12.3 Trigger Points ... 135
6.7.13 Signalling Diagrams ... 136
6.8 Web Browsing (HTTP) ... 139
6.8.1 HTTP Service Non-Accessibility [%] ... 139
6.8.2 HTTP Setup Time [s] ... 139
6.8.3 HTTP IP-Service Access Failure Ratio [%] ... 139
6.8.3.1 Abstract Definition ... 139
6.8.3.2 Abstract Equation ... 139
6.8.3.3 Trigger Points ... 139
6.8.4 HTTP IP-Service Setup Time [s] ... 139
6.8.4.1 Abstract Definition ... 139
6.8.4.2 Abstract Equation ... 140
6.8.4.3 Trigger Points ... 140
6.8.5 HTTP Session Failure Ratio [%] ... 140
6.8.5.1 Abstract Definition ... 140
6.8.5.2 Abstract Equation ... 140
6.8.5.3 Trigger Points ... 140
6.8.6 HTTP Session Time [s] ... 140
6.8.6.1 Abstract Definition ... 140
6.8.6.2 Abstract Equation ... 141
6.8.6.3 Trigger Points ... 141
6.8.7 HTTP Mean Data Rate [kbit/s] ... 141
6.8.7.1 Abstract Definition ... 141
6.8.7.2 Abstract Equation ... 141
6.8.7.3 Trigger Points ... 141
6.8.8 HTTP Data Transfer Cut-off Ratio [%] ... 142
6.8.8.1 Abstract Definition ... 142
6.8.8.2 Abstract Equation ... 142
6.8.8.3 Trigger Points ... 142
6.8.9 HTTP Content Compression Ratio [%] ... 142
6.8.9.1 Abstract Definition ... 142
6.8.9.2 Abstract Equation ... 143
6.8.9.3 Trigger Points ... 143
6.9 Web Radio ... 143
6.9.1 General ... 143
6.9.2 Preconditions ... 144
6.9.3 Special remarks on Internet radio audio playback and buffering ... 144
6.9.4 Transaction Definition from User's perspective ... 144
6.9.5 Result Definition ... 144
6.9.6 QoS Parameter Overview ... 145
6.9.7 Web Radio EPG Retrieval Failure Ratio [%] ... 145
6.9.7.1 Abstract Definition ... 145
6.9.7.2 Abstract Equation ... 145
6.9.7.3 Trigger Points ... 145
6.9.8 Web Radio EPG Retrieval Time [s] ... 145
6.9.8.1 Abstract Definition ... 145
6.9.8.2 Abstract Equation ... 145
6.9.8.3 Trigger Points ... 145
6.9.9 Web Radio Tune-in Failure Ratio [%] ... 146
6.9.9.1 Abstract Definition ... 146
6.9.9.2 Abstract Equation ... 146
6.9.9.3 Trigger Points ... 146
6.9.10 Web Radio Tune-in Time [s] ... 146
6.9.10.1 Abstract Definition ... 146

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/13d1051c-4e3b-469c-a245-f65a0096f499/etsi-ts-102-250-2-v2.3.1-2014-08

6.9.10.2 Abstract Equation 146
6.9.10.3 Trigger Points 146
6.9.11 Web Radio Reproduction Set-up Failure Ratio [%] 146
6.9.11.1 Abstract Definition 146
6.9.11.2 Abstract Equation 147
6.9.11.3 Trigger Points 147
6.9.12 Web Radio Reproduction Set-Up Time [s] 147
6.9.12.1 Abstract Definition 147
6.9.12.2 Abstract Equation 147
6.9.12.3 Trigger Points 147
6.9.13 Web Radio Reproduction Cut-off Ratio [%] 148
6.9.13.1 Abstract Definition 148
6.9.13.2 Abstract Equation 148
6.9.13.3 Trigger Points 148
6.9.14 Web Radio Audio Quality 148
6.10 WLAN service provisioning with HTTP based authentication 149
6.10.1 Generic Signal Flow 149
6.10.2 WLAN Scan Failure Ratio [%] 150
6.10.2.1 Abstract Definition 150
6.10.2.2 Abstract Equation 150
6.10.2.3 Trigger Points 150
6.10.3 WLAN Time to Scan [s] 150
6.10.3.1 Abstract Definition 150
6.10.3.2 Abstract Equation 151
6.10.3.3 Trigger Points 151
6.10.4 WLAN PS Data Service Provisioning Failure Ratio [%] 151
6.10.4.1 Abstract Definition 151
6.10.4.2 Abstract Equation 151
6.10.4.3 Trigger Points 152
6.10.5 WLAN PS Data Service Provisioning Time [s] 152
6.10.5.1 Abstract Definition 152
6.10.5.2 Abstract Equation 153
6.10.5.3 Trigger Points 153
6.10.6 WLAN Association Failure Ratio [%] 154
6.10.6.1 Abstract Definition 154
6.10.6.2 Abstract Equation 154
6.10.6.3 Trigger Points 154
6.10.7 WLAN Association Time [s] 154
6.10.7.1 Abstract Definition 154
6.10.7.2 Abstract Equation 155
6.10.7.3 Trigger Points 155
6.10.8 WLAN IP Address Allocation Failure Ratio [%] 155
6.10.8.1 Abstract Definition 155
6.10.8.2 Abstract Equation 155
6.10.8.3 Trigger Points 155
6.10.9 WLAN IP Address Allocation Time [s] 156
6.10.9.1 Abstract Definition 156
6.10.9.2 Abstract Equation 156
6.10.9.3 Trigger Points 156
6.10.10 WLAN Landing Page Download Failure Ratio [%] 156
6.10.10.1 Abstract Definition 156
6.10.10.2 Abstract Equation 156
6.10.10.3 Trigger Points 156
6.10.11 WLAN Landing Page Download Time [s] 157
6.10.11.1 Abstract Definition 157
6.10.11.2 Abstract Equation 157
6.10.11.3 Trigger Points 157
6.10.12 WLAN Landing Page Password Retrieval Failure Ratio [%] 157
6.10.12.1 Abstract Definition 157
6.10.12.2 Abstract Equation 157
6.10.12.3 Trigger Points 157
6.10.13 WLAN Landing Page Password Retrieval Time [s] 158

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/13d1051c-4e3b-469c-a215-165a009f6f09/etsi-ts-102-250-2-v2.3.1-2014-08

6.10.13.1 Abstract Definition ... 158
6.10.13.2 Abstract Equation ... 158
6.10.13.3 Trigger Points ... 158
6.10.14 WLAN Landing Page Authorization Failure Ratio [%] ... 158
6.10.14.1 Abstract Definition ... 158
6.10.14.2 Abstract Equation ... 158
6.10.14.3 Trigger Points ... 158
6.10.15 WLAN Landing Page Authorization Time [s] ... 159
6.10.15.1 Abstract Definition ... 159
6.10.15.2 Abstract Equation ... 159
6.10.15.3 Trigger Points ... 159
6.10.16 WLAN Re-accessibility Failure Ratio [%] ... 159
6.10.16.1 Abstract Definition ... 159
6.10.16.2 Abstract Equation ... 159
6.10.16.3 Trigger Points ... 160
6.10.17 WLAN Re-accessibility Time [s] ... 160
6.10.17.1 Abstract Definition ... 160
6.10.17.2 Abstract Equation ... 160
6.10.17.3 Trigger Points ... 160
6.10.18 WLAN Logout Page Download Failure Ratio [%] ... 160
6.10.18.1 Abstract Definition ... 160
6.10.18.2 Abstract Equation ... 161
6.10.18.3 Trigger Points ... 161
6.10.19 WLAN Logout Page Download Time [s] ... 161
6.10.19.1 Abstract Definition ... 161
6.10.19.2 Abstract Equation ... 161
6.10.19.3 Trigger Points ... 161
6.11 Wireless Application Protocol (WAP) ... 161
6.11.1 WAP Activation Failure Ratio [%] (WAP 1.x only) ... 162
6.11.1.1 Abstract Definition ... 162
6.11.1.2 Abstract Equation ... 162
6.11.1.3 Trigger Points ... 163
6.11.2 WAP Activation Time [s] (WAP 1.x only) ... 163
6.11.2.1 Abstract Definition ... 163
6.11.2.2 Abstract Equation ... 163
6.11.2.3 Trigger Points ... 163
6.11.3 WAP {Page} IP Access Failure Ratio [%] (WAP 2.x only) ... 163
6.11.3.1 Abstract Definition ... 163
6.11.3.2 Abstract Equation ... 163
6.11.3.3 Trigger Points ... 164
6.11.4 WAP {Page} IP Access Setup Time [s] (WAP 2.x only) ... 164
6.11.4.1 Abstract Definition ... 164
6.11.4.2 Abstract Equation ... 164
6.11.4.3 Trigger Points ... 164
6.11.5 WAP {Page} Session Failure Ratio [%] ... 164
6.11.5.1 Abstract Definition ... 164
6.11.5.2 Abstract Equation ... 164
6.11.5.3 Trigger Points ... 165
6.11.6 WAP {Page} Session Time [s] ... 165
6.11.6.1 Abstract Definition ... 165
6.11.6.2 Abstract Equation ... 165
6.11.6.3 Trigger Points ... 165
6.11.7 WAP {Page} Request Failure Ratio [%] ... 166
6.11.7.1 Abstract Definition ... 166
6.11.7.2 Abstract Equation ... 166
6.11.7.3 Trigger Points ... 166
6.11.8 WAP {Page} Request Time [s] ... 166
6.11.8.1 Abstract Definition ... 166
6.11.8.2 Abstract Equation ... 166
6.11.8.3 Trigger Points ... 166
6.11.9 WAP {Page} Mean Data Rate [kbit/s] ... 167
6.11.9.1 Abstract Definition ... 167

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/13d1051c-4e3b-469c-a245-f65a0096f499/etsi-ts-102-250-2-v2.3.1-2014-08

6.11.9.2 Abstract Equation....167
6.11.9.3 Trigger Points....167
6.11.10 WAP {Page} Data Transfer Cut-off Ratio [%]....167
6.11.10.1 Abstract Definition....167
6.11.10.2 Abstract Equation....167
6.11.10.3 Trigger Points....167
6.11.11 WAP {Page} Data Transfer Time [s]....168
6.11.11.1 Abstract Definition....168
6.11.11.2 Abstract Equation....168
6.11.11.3 Trigger Points....168
6.12 IMS Multimedia Telephony....168
6.12.1 MTSI Registration Failure Ratio [%]....169
6.12.1.1 Abstract Definition....169
6.12.1.2 Abstract Equation....169
6.12.1.3 Trigger Points....170
6.12.2 MTSI Registration Time [s]....170
6.12.2.1 Abstract Definition....170
6.12.2.2 Abstract Equation....171
6.12.2.3 Trigger Points....171
6.12.3 MTSI Session Set-up Failure Ratio [%]....171
6.12.3.1 Abstract Definition....171
6.12.3.2 Abstract Equation....171
6.12.3.3 Trigger Points....172
6.12.4 MTSI Session Set-up Time [s]....172
6.12.4.1 Abstract Definition....172
6.12.4.2 Abstract Equation....172
6.12.4.3 Trigger Points....173
6.12.5 MTSI Session Add Failure Ratio [%]....174
6.12.5.1 Abstract Definition....174
6.12.5.2 Abstract Equation....174
6.12.5.3 Trigger Points....174
6.12.6 MTSI Session Add Time [s]....174
6.12.6.1 Abstract Definition....174
6.12.6.2 Abstract Equation....175
6.12.6.3 Trigger Points....175
6.12.7 MTSI Session Remove Failure Ratio [%]....176
6.12.7.1 Abstract Definition....176
6.12.7.2 Abstract Equation....176
6.12.7.3 Trigger Points....176
6.12.8 MTSI Session Remove Time [s]....176
6.12.8.1 Abstract Definition....176
6.12.8.2 Abstract Equation....176
6.12.8.3 Trigger Points....177
6.12.9 MTSI Session Completion Failure Ratio [%]....177
6.12.9.1 Abstract Definition....177
6.12.9.2 Abstract Equation....177
6.12.9.3 Trigger Points....178
6.12.10 MTSI Speech Quality....178
6.12.10.1 Abstract Definition....178
6.12.10.2 Abstract Equation....178
6.12.10.3 Trigger Points....178
6.12.11 MTSI Speech Transmission Delay [s]....179
6.12.11.1 Abstract Definition....179
6.12.11.2 Abstract Equation....179
6.12.11.3 Trigger Points....179
6.12.12 MTSI Speech Path Delay [s]....179
6.12.12.1 Abstract Definition....179
6.12.12.2 Abstract Equation....179
6.12.12.3 Trigger Points....180
6.12.13 MTSI Video Quality....180
6.12.13.1 Abstract Definition....180
6.12.13.2 Abstract Equation....180

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/13d1051c-4e3b-469c-9145-f65a009f6f99/etsi-ts-102-250-2-v2.3.1-2014-08