ETSI TS 102 250-2 V1.6.2 (2008-09)

Technical Specification

Speech Processing, Transmission and Quality Aspects (STQ); QoS aspects for popular services in GSM and 3G 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/cc30f03f-a7e2-4f17-bee8-4a40a0c56ace/etsi-ts-102-250-2-v1.6.2-2008-09

Reference
RTS/STQ-000135m

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/c330f03f-1112-4f17-b8e8-4a0a0c56ace/etsi-ts-102-250-2-v1.6.2-2008-09

Important notice

Individual copies of the present document can be downloaded from:
http://www.etsi.org

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the 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 except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2008.
All rights reserved.

DECT™, **PLUGTESTS**™, **UMTS**™, **TIPHON**™, the TIPHON logo and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.
3GPP™ is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

Contents

Intellectual Property Rights 17
Foreword 17
Introduction 18
1 Scope 19
2 References 19
2.1 Normative references 20
2.2 Informative references 21
3 Definitions and abbreviations 21
3.1 Definitions 21
3.2 Abbreviations 23
4 QoS Parameter Basics 25
4.1 General Overview 25
4.2 FTP, HTTP and E-Mail Issues 25
4.2.1 Performance Enhancement Proxies 27
4.3 Timeouts 28
5 Service independent QoS Parameters 28
5.1 Radio Network Unavailability [%] 28
5.1.1 Abstract Definition 28
5.1.2 Abstract Equation 28
5.1.3 Trigger Points 28
5.2 Network Non-Accessibility [%] 29
5.2.1 Abstract Definition 29
5.2.2 Abstract Equation 29
5.2.3 Trigger Points 29
5.3 Attach Failure Ratio [%] 30
5.3.1 Abstract Definition 30
5.3.2 Abstract Equation 30
5.3.3 Trigger Points 30
5.4 Attach Setup Time [s] 30
5.4.1 Abstract Definition 30
5.4.2 Abstract Equation 31
5.4.3 Trigger Points 31
5.5 PDP Context Activation Failure Ratio [%] 31
5.5.1 Abstract Definition 31
5.5.2 Abstract Equation 31
5.5.3 Trigger Points 32
5.6 PDP Context Activation Time [s] 32
5.6.1 Abstract Definition 32
5.6.2 Abstract Equation 32
5.6.3 Trigger Points 33
5.7 PDP Context Cut-off Ratio [%] 33
5.7.1 Abstract Definition 33
5.7.2 Abstract Equation 33
5.7.3 Trigger Points 33
5.8 Data Call Access Failure Ratio [%] 34
5.8.1 Abstract Definition 34
5.8.2 Abstract Equation 34
5.8.3 Trigger Points 34
5.9 Data Call Access Time [s] 34
5.9.1 Abstract Definition 34
5.9.2 Abstract Equation 34
5.9.3 Trigger Points 35
5.10 DNS Host Name Resolution Failure Ratio [%] 35

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/cc30f03f-a7e2-4f17-bee8-4a40a0c56ace/etsi-ts-102-250-2-v1.6.2-2008-09

5.10.1 Abstract Definition 35
5.10.2 Abstract Equation 35
5.10.3 Trigger Points 36
5.11 DNS Host Name Resolution Time [s] 36
5.11.1 Abstract Definition 36
5.11.2 Abstract Equation 36
5.11.3 Trigger Points 36

6 Direct Services QoS Parameters 37
6.1 File Transfer (FTP) 37
6.1.1 FTP {Download|Upload} Service Non-Accessibility [%] 37
6.1.1.1 Abstract Definition 37
6.1.1.2 Abstract Equation 37
6.1.1.3 Trigger Points 37
6.1.2 FTP {Download|Upload} Setup Time [s] 38
6.1.2.1 Abstract Definition 38
6.1.2.2 Abstract Equation 38
6.1.2.3 Trigger Points 38
6.1.3 FTP {Download|Upload} IP-Service Access Failure Ratio [%] 39
6.1.3.1 Abstract Definition 39
6.1.3.2 Abstract Equation 39
6.1.3.3 Trigger Points 39
6.1.4 FTP {Download|Upload} IP-Service Setup Time [s] 40
6.1.4.1 Abstract Definition 40
6.1.4.2 Abstract Equation 40
6.1.4.3 Trigger Points 40
6.1.5 FTP {Download|Upload} Session Failure Ratio [%] 40
6.1.5.1 Abstract Definition 40
6.1.5.2 Abstract Equation 40
6.1.5.3 Trigger Points 41
6.1.6 FTP {Download|Upload} Session Time [s] 41
6.1.6.1 Abstract Definition 41
6.1.6.2 Abstract Equation 41
6.1.6.3 Trigger Points 41
6.1.7 FTP {Download|Upload} Mean Data Rate [kbit/s] 42
6.1.7.1 Abstract Definition 42
6.1.7.2 Abstract Equation 42
6.1.7.3 Trigger Points 42
6.1.8 FTP {Download|Upload} Data Transfer Cut-off Ratio [%] 43
6.1.8.1 Abstract Definition 43
6.1.8.2 Abstract Equation 43
6.1.8.3 Trigger Points 43
6.2 Mobile Broadcast 43
6.2.1 Mobile Broadcast Network Non-Availability {Broadcast Bearer} 45
6.2.1.1 Abstract Definition 45
6.2.1.2 Abstract Equation 45
6.2.1.3 Trigger Points 46
6.2.2 Mobile Broadcast Program Menu Non-Accessibility {Bootstrapping Bearer, ESG Retrieval Bearer} 46
6.2.2.1 Abstract Definition 46
6.2.2.2 Abstract Equation 46
6.2.2.3 Trigger Points 46
6.2.3 Mobile Broadcast Program Menu Access Time {Bootstrapping Bearer, ESG Retrieval Bearer} 47
6.2.3.1 Abstract Definition 47
6.2.3.2 Abstract Equation 47
6.2.3.3 Trigger Points 47
6.2.4 Mobile Broadcast Channel Non-Accessibility {Broadcast Bearer} 47
6.2.4.1 Abstract Definition 47
6.2.4.2 Abstract Equation 47
6.2.4.3 Trigger Points 47
6.2.5 Mobile Broadcast Channel Access Time {Broadcast Bearer} 48
6.2.5.1 Abstract Definition 48
6.2.5.2 Abstract Equation 48

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/cc30f03f-a7a2-4f17-bee8-41a10a0c56ace/etsi-ts-102-250-2-v1.6.2-2008-09

6.2.5.3 Trigger Points....48
6.2.6 Mobile Broadcast Interactivity Response Failure Ratio {Mobile Network Bearer} {Broadcast Bearer}....48
6.2.6.1 Abstract Definition....48
6.2.6.2 Abstract Equation....48
6.2.6.3 Trigger Points....49
6.2.7 Mobile Broadcast Interactivity Response Time {Mobile Network Bearer} {Broadcast Bearer}....49
6.2.7.1 Abstract Definition....49
6.2.7.2 Abstract Equation....49
6.2.7.3 Trigger Points....49
6.2.8 Mobile Broadcast Session Cut-off Ratio {Broadcast Bearer}....51
6.2.8.1 Abstract Definition....51
6.2.8.2 Abstract Equation....51
6.2.8.3 Trigger Points....51
6.2.9 Mobile Broadcast Service Integrity {Broadcast Bearer}....51
6.2.10 Mobile Broadcast Reproduction Soft Cut-off Ratio {Broadcast Bearer}....51
6.2.10.1 Abstract Definition....51
6.2.10.2 Abstract Equation....52
6.2.10.3 Trigger Points....52
6.2.11 Mobile Broadcast Reproduction Hard Cut-off Ratio {Broadcast Bearer}....52
6.2.11.1 Abstract Definition....52
6.2.11.2 Abstract Equation....52
6.2.11.3 Trigger Points....52
6.2.12 Mobile Broadcast Audio Quality {Broadcast Bearer}....53
6.2.12.1 Abstract Definition....53
6.2.12.2 Abstract Equation....53
6.2.12.3 Trigger Points....53
6.2.13 Mobile Broadcast Video Quality {Broadcast Bearer}....53
6.2.13.1 Abstract Definition....53
6.2.13.2 Abstract Equation....53
6.2.13.3 Trigger Points....53
6.3 Ping....54
6.3.1 Ping Round Trip Time [ms]....54
6.3.1.1 Abstract Definition....54
6.3.1.2 Abstract Equation....54
6.3.1.3 Trigger Points....54
6.4 Push to Talk over Cellular (PoC)....54
6.4.1 Definitions....55
6.4.2 Generic Signal Flow....56
6.4.3 PoC Registration Failure Ratio [%]....58
6.4.3.1 Abstract Definition....58
6.4.3.2 Abstract Equation....58
6.4.3.3 Trigger Points....58
6.4.4 PoC Registration Time [s]....59
6.4.4.1 Abstract Definition....59
6.4.4.2 Abstract Equation....59
6.4.4.3 Trigger Points....59
6.4.5 PoC Publish Failure Ratio [%]....60
6.4.5.1 Abstract Definition....60
6.4.5.2 Abstract Equation....60
6.4.5.3 Trigger Points....60
6.4.6 PoC Publish Time [s]....60
6.4.6.1 Abstract Definition....60
6.4.6.2 Abstract Equation....61
6.4.6.3 Trigger Points....61
6.4.7 PoC Registration Failure Ratio (long) [%]....61
6.4.7.1 Abstract Definition....61
6.4.7.2 Abstract Equation....61
6.4.7.3 Trigger Points....62
6.4.8 PoC Registration Time (long) [s]....62
6.4.8.1 Abstract Definition....62
6.4.8.2 Abstract Equation....62

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/ce30f03f-a7e2-4f17-bee8-4a40a0c56ace/etsi-ts-102-250-2-v1.6.2-2008-09

6.4.8.3 Trigger Points....63
6.4.9 PoC Session Initiation Failure Ratio (on-demand) [%]....63
6.4.9.1 Abstract Definition....63
6.4.9.2 Abstract Equation....63
6.4.9.3 Trigger Points....64
6.4.10 PoC Session Initiation Time (on-demand) [s]....64
6.4.10.1 Abstract Definition....64
6.4.10.2 Abstract Equation....64
6.4.10.3 Trigger Points....65
6.4.11 PoC Session Media Parameters Negotiation Failure Ratio (pre-established) [%]....65
6.4.11.1 Abstract Definition....65
6.4.11.2 Abstract Equation....66
6.4.11.3 Trigger Points....66
6.4.12 PoC Session Media Parameters Negotiation Time (pre-established) [s]....66
6.4.12.1 Abstract Definition....66
6.4.12.2 Abstract Equation....67
6.4.12.3 Trigger Points....67
6.4.13 PoC Session Initiation Failure Ratio (pre-established) [%]....67
6.4.13.1 Abstract Definition....67
6.4.13.2 Abstract Equation....68
6.4.13.3 Trigger Points....68
6.4.14 PoC Session Initiation Time (pre-established) [s]....68
6.4.14.1 Abstract Definition....68
6.4.14.2 Abstract Equation....69
6.4.14.3 Trigger Points....69
6.4.15 PoC Session Setup Failure Ratio (on-demand) [%]....70
6.4.15.1 Abstract Definition....70
6.4.15.2 Abstract Equation....70
6.4.15.3 Trigger Points....70
6.4.16 PoC Session Setup Failure Ratio (pre-established) [%]....71
6.4.16.1 Abstract Definition....71
6.4.16.2 Abstract Equation....71
6.4.16.3 Trigger Points....71
6.4.17 PoC Session Setup Time [s]....72
6.4.17.1 Abstract Definition:....72
6.4.17.2 Abstract Equation....72
6.4.17.3 Trigger Points....72
6.4.18 PoC Push to Speak Failure Ratio [%]....73
6.4.18.1 Abstract Definition....73
6.4.18.2 Abstract Equation....73
6.4.18.3 Trigger Points....73
6.4.19 PoC Push to Speak Time [s]....74
6.4.19.1 Abstract Definition....74
6.4.19.2 Abstract Equation....74
6.4.19.3 Trigger Points....74
6.4.20 PoC Session Leaving Failure Ratio (on-demand) [%]....74
6.4.20.1 Abstract Definition....74
6.4.20.2 Abstract Equation....74
6.4.20.3 Trigger Points....75
6.4.21 PoC Session Leaving Time (on-demand) [s]....75
6.4.21.1 Abstract Definition....75
6.4.21.2 Abstract Equation....75
6.4.21.3 Trigger Points....76
6.4.22 PoC Session Leaving Failure Ratio (pre-established) [%]....76
6.4.22.1 Abstract Definition....76
6.4.22.2 Abstract Equation....76
6.4.22.3 Trigger Points....76
6.4.23 PoC Session Leaving Time (pre-established) [s]....77
6.4.23.1 Abstract Definition....77
6.4.23.2 Abstract Equation....77
6.4.23.3 Trigger Points....77
6.4.24 PoC Deregistration Failure Ratio [%]....77

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/ce30f03f-a7e2-4f17-bee8-4a40a0c56ace/etsi-ts-102-250-2-v1.6.2-2008-09

6.4.24.1 Abstract Definition 77
6.4.24.2 Abstract Equation 78
6.4.24.3 Trigger Points 78
6.4.25 PoC Deregistration Time [s] 78
6.4.25.1 Abstract Definition 78
6.4.25.2 Abstract Equation 78
6.4.25.3 Trigger Points 79
6.4.26 PoC Busy Floor Response Failure Ratio [%] 79
6.4.26.1 Abstract Definition 79
6.4.26.2 Abstract Equation 79
6.4.26.3 Trigger Points 80
6.4.27 PoC Busy Floor Response Time [s] 80
6.4.27.1 Abstract Definition 80
6.4.27.2 Abstract Equation 80
6.4.27.3 Trigger Points 81
6.4.28 PoC Talk Burst Request Failure Ratio [%] 81
6.4.28.1 Abstract Definition 81
6.4.28.2 Abstract Equation 81
6.4.28.3 Trigger Points 81
6.4.29 PoC Talk Burst Request Time [s] 82
6.4.29.1 Abstract Definition 82
6.4.29.2 Abstract Equation 82
6.4.29.3 Trigger Points 82
6.4.30 PoC Talk Burst Cut-off Ratio [%] 82
6.4.30.1 Abstract Definition 82
6.4.30.2 Abstract Equation 83
6.4.30.3 Trigger Points 83
6.4.31 PoC Talk Burst Packet Drop Ratio [%] 84
6.4.31.1 Abstract Definition 84
6.4.31.2 Abstract Equation 84
6.4.31.3 Trigger Points 84
6.4.32 PoC Voice Transmission Delay (first) [s] 84
6.4.32.1 Abstract Definition 84
6.4.32.2 Abstract Equation 85
6.4.32.3 Trigger Points 85
6.4.33 PoC Voice Transmission Delay (others) [s] 85
6.4.33.1 Abstract Definition 85
6.4.33.2 Abstract Equation 86
6.4.33.3 Trigger Points 86
6.4.34 PoC Speech Quality 86
6.4.35 Group Management QoS Parameter 86
6.4.36 Group Document related QoS Parameter 86
6.4.37 Instant Message QoS Parameter 86
6.5 Streaming Video 86
6.5.1 Definitions 86
6.5.1.1 Streaming Session or Session 86
6.5.2 Prerequisites 87
6.5.3 Streaming Scenarios 87
6.5.3.1 Generic Streaming Signalling Flow 87
6.5.3.2 Parameter Overview Chart 88
6.5.4 Streaming Service Non-Accessibility [%] 88
6.5.4.1 Abstract Definition 88
6.5.4.2 Abstract Equation 88
6.5.4.3 Trigger Points 88
6.5.5 Streaming Service Access Time [s] 89
6.5.5.1 Abstract Definition 89
6.5.5.2 Abstract Equation 89
6.5.5.3 Trigger Points 89
6.5.6 Streaming Reproduction Cut-off Ratio [%] 89
6.5.6.1 Abstract Definition 89
6.5.6.2 Abstract Equation 89
6.5.6.3 Trigger Points 89

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/ce30f03f-a7e2-4f17-8ee8-4a40a0c56ace/etsi-ts-102-250-2-v1.6.2-2008-09

6.5.7 Streaming Audio Quality 90
6.5.7.1 Abstract Definition 90
6.5.7.2 Abstract Equation 90
6.5.7.3 Trigger Points 90
6.5.8 Streaming Video Quality 90
6.5.8.1 Abstract Definition 90
6.5.8.2 Abstract Equation 90
6.5.8.3 Trigger Points 90
6.5.9 Streaming Audio/Video De-Synchronization 91
6.5.9.1 Abstract Definition 91
6.5.9.2 Abstract Equation 91
6.5.9.3 Trigger Points 91
6.5.10 Streaming Reproduction Start Failure Ratio [%] 91
6.5.10.1 Abstract Definition 91
6.5.10.2 Abstract Equation 91
6.5.10.3 Trigger Points 91
6.5.11 Streaming Reproduction Start Delay [s] 92
6.5.11.1 Abstract Definition 92
6.5.11.2 Abstract Equation 92
6.5.11.3 Trigger Points 92
6.5.12 Teardown Failure Ratio [%] 92
6.5.12.1 Abstract Definition 92
6.5.12.2 Abstract Equation 92
6.5.12.3 Trigger Points 92
6.5.13 Teardown Time [s] 93
6.5.13.1 Abstract Definition 93
6.5.13.2 Abstract Equation 93
6.5.13.3 Trigger Points 93
6.5.14 Rebuffering Failure Ratio [%] 93
6.5.14.1 Abstract Definition 93
6.5.14.2 Abstract Equation 93
6.5.14.3 Trigger Points 93
6.5.15 Rebuffering Time [s] 93
6.5.15.1 Abstract Definition 93
6.5.15.2 Abstract Equation 94
6.5.15.3 Trigger Points 94
6.6 Telephony 94
6.6.1 Telephony Service Non-Accessibility [%] 94
6.6.1.1 Abstract Definition 94
6.6.1.2 Abstract Equation 94
6.6.1.3 Trigger Points 95
6.6.2 Telephony Setup Time [s] 98
6.6.2.1 Abstract Definition 98
6.6.2.2 Abstract Equation 98
6.6.2.3 Trigger Points 98
6.6.3 Telephony Speech Quality on Call Basis 99
6.6.3.1 Abstract Definition 99
6.6.3.2 Abstract Equation 99
6.6.3.3 Trigger Points 99
6.6.4 Telephony Speech Quality on Sample Basis 99
6.6.4.1 Abstract Definition 99
6.6.4.2 Abstract Equation 99
6.6.4.3 Trigger Points 100
6.6.5 Telephony Cut-off Call Ratio [%] 100
6.6.5.1 Abstract Definition 100
6.6.5.2 Abstract Equation 100
6.6.5.3 Trigger Points 100
6.7 Video Telephony 100
6.7.1 Network Accessibility/Availability 100
6.7.2 Parameter Overview Chart 101
6.7.3 VT Service Non-Accessibility [%] 103
6.7.3.1 Abstract Definition 103

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/ce30f03f-a7e2-4f17-bee8-4a40a0c56ace/etsi-ts-102-250-2-v1.6.2-2008-09

6.7.3.2 Abstract Equation....103
6.7.3.3 Trigger Points....103
6.7.4 VT Service Access Time [s]....104
6.7.4.1 Abstract Definition....104
6.7.4.2 Abstract Equation....104
6.7.4.3 Trigger Points....104
6.7.5 VT Audio/Video Setup Failure Ratio [%]....104
6.7.5.1 Abstract Definition....104
6.7.5.2 Abstract Equation....105
6.7.5.3 Trigger Points....105
6.7.6 VT Audio/Video Setup Time [s]....105
6.7.6.1 Abstract Definition....105
6.7.6.2 Abstract Equation....105
6.7.6.3 Trigger Points....106
6.7.7 VT Cut-off Call Ratio [%]....106
6.7.7.1 Abstract Definition....106
6.7.7.2 Abstract Equation....106
6.7.7.3 Trigger Points....107
6.7.8 VT Speech Quality on Call Basis....108
6.7.8.1 Abstract Definition....108
6.7.8.2 Abstract Equation....108
6.7.8.3 Trigger Points....108
6.7.9 VT Speech Quality on Sample Basis....109
6.7.9.1 Abstract Definition....109
6.7.9.2 Abstract Equation....109
6.7.9.3 Trigger Points....110
6.7.10 VT Video Quality....110
6.7.10.1 Abstract Definition....110
6.7.10.2 Abstract Equation....110
6.7.10.3 Trigger Points....111
6.7.11 VT End-To-End Mean One-Way Transmission Time [s]....111
6.7.11.1 Abstract Definition....111
6.7.11.2 Abstract Equation....111
6.7.11.3 Trigger Points....112
6.7.12 VT Audio/Video Synchronization [%]....112
6.7.12.1 Abstract Definition....112
6.7.12.2 Abstract Equation....112
6.7.12.3 Trigger Points....112
6.7.13 Signalling Diagrams....113
6.8 Web Browsing (HTTP)....116
6.8.1 HTTP Service Non-Accessibility [%]....116
6.8.1.1 Abstract Definition....116
6.8.1.2 Abstract Equation....116
6.8.1.3 Trigger Points....116
6.8.2 HTTP Setup Time [s]....116
6.8.2.1 Abstract Definition....116
6.8.2.2 Abstract Equation....116
6.8.2.3 Trigger Points....117
6.8.3 HTTP IP-Service Access Failure Ratio [%]....117
6.8.3.1 Abstract Definition....117
6.8.3.2 Abstract Equation....117
6.8.3.3 Trigger Points....117
6.8.4 HTTP IP-Service Setup Time [s]....117
6.8.4.1 Abstract Definition....117
6.8.4.2 Abstract Equation....118
6.8.4.3 Trigger Points....118
6.8.5 HTTP Session Failure Ratio [%]....118
6.8.5.1 Abstract Definition....118
6.8.5.2 Abstract Equation....118
6.8.5.3 Trigger Points....118
6.8.6 HTTP Session Time [s]....118
6.8.6.1 Abstract Definition....118

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/ce30f03f-a7e2-4f17-bee8-4a40a0c56ae6/etsi-ts-102-250-2-v1.6.2-2008-09

6.8.6.2 Abstract Equation....118
6.8.6.3 Trigger Points....119
6.8.7 HTTP Mean Data Rate [kbit/s]....119
6.8.7.1 Abstract Definition....119
6.8.7.2 Abstract Equation....119
6.8.7.3 Trigger Points....119
6.8.8 HTTP Data Transfer Cut-off Ratio [%]....119
6.8.8.1 Abstract Definition....119
6.8.8.2 Abstract Equation....120
6.8.8.3 Trigger Points....120
6.9 Web Radio....120
6.9.1 General....120
6.9.2 Preconditions....120
6.9.3 Special remarks on Internet radio audio playback and buffering....121
6.9.4 Transaction Definition from Customer's perspective....121
6.9.5 Result Definition....121
6.9.6 KPI Overview....121
6.9.7 Web Radio EPG Retrieval Failure Ratio [%]....122
6.9.7.1 Abstract Definition....122
6.9.7.2 Abstract Equation....122
6.9.7.3 Trigger Points....122
6.9.8 Web Radio EPG Retrieval Time [s]....122
6.9.8.1 Abstract Definition....122
6.9.8.2 Abstract Equation....122
6.9.8.3 Trigger Points....122
6.9.9 Web Radio Tune-in Failure Ratio [%]....122
6.9.9.1 Abstract Definition....122
6.9.9.2 Abstract Equation....123
6.9.9.3 Trigger Points....123
6.9.10 Web Radio Tune-in Time [s]....123
6.9.10.1 Abstract Definition....123
6.9.10.2 Abstract Equation....123
6.9.10.3 Trigger Points....123
6.9.11 Web Radio Reproduction Set-up Failure Ratio [%]....123
6.9.11.1 Abstract Definition....123
6.9.11.2 Abstract Equation....123
6.9.11.3 Trigger Points....124
6.9.12 Web Radio Reproduction Set-Up Time [s]....124
6.9.12.1 Abstract Definition....124
6.9.12.2 Abstract Equation....124
6.9.12.3 Trigger Points....124
6.9.13 Web Radio Reproduction Cut-off Ratio [%]....124
6.9.13.1 Abstract Definition....124
6.9.13.2 Abstract Equation....125
6.9.13.3 Trigger Points....125
6.9.14 Web Radio Audio Quality....125
6.10 WLAN service provisioning with HTTP based authentication....126
6.10.1 Generic Signal Flow....126
6.10.2 WLAN Scan Failure Ratio [%]....127
6.10.2.1 Abstract Definition....127
6.10.2.2 Abstract Equation....127
6.10.2.3 Trigger Points....127
6.10.3 WLAN Time to Scan [s]....127
6.10.3.1 Abstract Definition....127
6.10.3.2 Abstract Equation....128
6.10.3.3 Trigger Points....128
6.10.4 WLAN PS Data Service Provisioning Failure Ratio [%]....128
6.10.4.1 Abstract Definition....128
6.10.4.2 Abstract Equation....128
6.10.4.3 Trigger Points....129
6.10.5 WLAN PS Data Service Provisioning Time [s]....130
6.10.5.1 Abstract Definition....130

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/ce30f03f-a7e4-4f17-bee8-4a0a0c56ace/etsi-ts-102-250-2-v1.6.2-2008-09

6.10.5.2 Abstract Equation....130
6.10.5.3 Trigger Points....131
6.10.6 WLAN Association Failure Ratio [%]....131
6.10.6.1 Abstract Definition....131
6.10.6.2 Abstract Equation....131
6.10.6.3 Trigger Points....131
6.10.7 WLAN Association Time [s]....132
6.10.7.1 Abstract Definition....132
6.10.7.2 Abstract Equation....132
6.10.7.3 Trigger Points....132
6.10.8 WLAN IP Address Allocation Failure Ratio [%]....132
6.10.8.1 Abstract Definition....132
6.10.8.2 Abstract Equation....132
6.10.8.3 Trigger Points....133
6.10.9 WLAN IP Address Allocation Time [s]....133
6.10.9.1 Abstract Definition....133
6.10.9.2 Abstract Equation....133
6.10.9.3 Trigger Points....133
6.10.10 WLAN Landing Page Download Failure Ratio [%]....133
6.10.10.1 Abstract Definition....133
6.10.10.2 Abstract Equation....133
6.10.10.3 Trigger Points....134
6.10.11 WLAN Landing Page Download Time [s]....134
6.10.11.1 Abstract Definition....134
6.10.11.2 Abstract Equation....134
6.10.11.3 Trigger Points....134
6.10.12 WLAN Landing Page Password Retrieval Failure Ratio [%]....134
6.10.12.1 Abstract Definition....134
6.10.12.2 Abstract Equation....135
6.10.12.3 Trigger Points....135
6.10.13 WLAN Landing Page Password Retrieval Time [s]....135
6.10.13.1 Abstract Definition....135
6.10.13.2 Abstract Equation....135
6.10.13.3 Trigger Points....135
6.10.14 WLAN Landing Page Authorization Failure Ratio [%]....135
6.10.14.1 Abstract Definition....135
6.10.14.2 Abstract Equation....135
6.10.14.3 Trigger Points....136
6.10.15 WLAN Landing Page Authorization Time [s]....136
6.10.15.1 Abstract Definition....136
6.10.15.2 Abstract Equation....136
6.10.15.3 Trigger Points....136
6.10.16 WLAN Re-accessibility Failure Ratio [%]....136
6.10.16.1 Abstract Definition....136
6.10.16.2 Abstract Equation....137
6.10.16.3 Trigger Points....137
6.10.17 WLAN Re-accessibility Time [s]....137
6.10.17.1 Abstract Definition....137
6.10.17.2 Abstract Equation....137
6.10.17.3 Trigger Points....138
6.10.18 WLAN Logout Page Download Failure Ratio [%]....138
6.10.18.1 Abstract Definition....138
6.10.18.2 Abstract Equation....138
6.10.18.3 Trigger Points....138
6.10.19 WLAN Logout Page Download Time [s]....138
6.10.19.1 Abstract Definition....138
6.10.19.2 Abstract Equation....138
6.10.19.3 Trigger Points....138
6.11 Wireless Application Protocol (WAP)....139
6.11.1 WAP Activation Failure Ratio [%] (WAP 1.x only)....140
6.11.1.1 Abstract Definition....140
6.11.1.2 Abstract Equation....140

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/ce30f03f-a732-4f17-bee5-4a40a0c56a1e/etsi-ts-102-250-2-v1.6.2-2008-09

6.11.1.3 Trigger Points....140
6.11.2 WAP Activation Time [s] (WAP 1.x only)....140
6.11.2.1 Abstract Definition....140
6.11.2.2 Abstract Equation....141
6.11.2.3 Trigger Points....141
6.11.3 WAP {Page} IP Access Failure Ratio [%] (WAP 2.x only)....141
6.11.3.1 Abstract Definition....141
6.11.3.2 Abstract Equation....141
6.11.3.3 Trigger Points....141
6.11.4 WAP {Page} IP Access Setup Time [s] (WAP 2.x only)....142
6.11.4.1 Abstract Definition....142
6.11.4.2 Abstract Equation....142
6.11.4.3 Trigger Points....142
6.11.5 WAP {Page} Session Failure Ratio [%]....142
6.11.5.1 Abstract Definition....142
6.11.5.2 Abstract Equation....142
6.11.5.3 Trigger Points....143
6.11.6 WAP {Page} Session Time [s]....143
6.11.6.1 Abstract Definition....143
6.11.6.2 Abstract Equation....143
6.11.6.3 Trigger Points....143
6.11.7 WAP {Page} Request Failure Ratio [%]....144
6.11.7.1 Abstract Definition....144
6.11.7.2 Abstract Equation....144
6.11.7.3 Trigger Points....144
6.11.8 WAP {Page} Request Time [s]....144
6.11.8.1 Abstract Definition....144
6.11.8.2 Abstract Equation....144
6.11.8.3 Trigger Points....144
6.11.9 WAP {Page} Mean Data Rate [kbit/s]....145
6.11.9.1 Abstract Definition....145
6.11.9.2 Abstract Equation....145
6.11.9.3 Trigger Points....145
6.11.10 WAP {Page} Data Transfer Cut-off Ratio [%]....145
6.11.10.1 Abstract Definition....145
6.11.10.2 Abstract Equation....145
6.11.10.3 Trigger Points....145
6.11.11 WAP {Page} Data Transfer Time [s]....146
6.11.11.1 Abstract Definition....146
6.11.11.2 Abstract Equation....146
6.11.11.3 Trigger Points....146

7 Store-and-forward (S&F) Services QoS Parameters....146
7.1 Generic Store-and-forward Parameters....147
7.1.1 Parameter Overview Chart....147
7.1.2 {Service} Message Upload Failure Ratio [%]....149
7.1.2.1 Abstract Definition....149
7.1.2.2 Abstract Equation....149
7.1.2.3 Trigger Points....149
7.1.3 {Service} Message Upload Time [s]....149
7.1.3.1 Abstract Definition....149
7.1.3.2 Abstract Equation....149
7.1.3.3 Trigger Points....149
7.1.4 {Service} Message Upload Access Failure Ratio [%]....149
7.1.4.1 Abstract Definition....149
7.1.4.2 Abstract Equation....149
7.1.4.3 Trigger Points....150
7.1.5 {Service} Message Upload Access Time [s]....150
7.1.5.1 Abstract Definition....150
7.1.5.2 Abstract Equation....150
7.1.5.3 Trigger Points....150
7.1.6 {Service} Message Upload Data Transfer Cut-off Ratio [%]....150

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/ce30f03f-a7e2-4f17-bee8-4a9ba0c56ace/etsi-ts-102-250-2-v1.6.2-2008-09

7.1.6.1 Abstract Definition....150
7.1.6.2 Abstract Equation....150
7.1.6.3 Trigger Points....150
7.1.7 {Service} Message Upload Data Transfer Time [s]....150
7.1.7.1 Abstract Definition....150
7.1.7.2 Abstract Equation....151
7.1.7.3 Trigger Points....151
7.1.8 {Service} Notification Start Failure Ratio [%]....151
7.1.8.1 Abstract Definition....151
7.1.8.2 Abstract Equation....151
7.1.8.3 Trigger Points....151
7.1.9 {Service} Notification Start Time [s]....151
7.1.9.1 Abstract Definition....151
7.1.9.2 Abstract Equation....151
7.1.9.3 Trigger Points....151
7.1.10 {Service} Notification Download Failure Ratio [%]....152
7.1.10.1 Abstract Definition....152
7.1.10.2 Abstract Equation....152
7.1.10.3 Trigger Points....152
7.1.11 {Service} Notification Download Time [s]....152
7.1.11.1 Abstract Definition....152
7.1.11.2 Abstract Equation....152
7.1.11.3 Trigger Points....152
7.1.12 {Service} Notification Download Access Failure Ratio [%]....152
7.1.12.1 Abstract Definition....152
7.1.12.2 Abstract Equation....152
7.1.12.3 Trigger Points....153
7.1.13 {Service} Notification Download Access Time [s]....153
7.1.13.1 Abstract Definition....153
7.1.13.2 Abstract Equation....153
7.1.13.3 Trigger Points....153
7.1.14 {Service} Notification Data Transfer Cut-off Ratio [%]....153
7.1.14.1 Abstract Definition....153
7.1.14.2 Abstract Equation....153
7.1.14.3 Trigger Points....153
7.1.15 {Service} Notification Data Transfer Time [s]....153
7.1.15.1 Abstract Definition....153
7.1.15.2 Abstract Equation....154
7.1.15.3 Trigger Points....154
7.1.16 {Service} Message Download Failure Ratio [%]....154
7.1.16.1 Abstract Definition....154
7.1.16.2 Abstract Equation....154
7.1.16.3 Trigger Points....154
7.1.17 {Service} Message Download Time [s]....154
7.1.17.1 Abstract Definition....154
7.1.17.2 Abstract Equation....154
7.1.17.3 Trigger Points....154
7.1.18 {Service} Message Download Access Failure Ratio [%]....155
7.1.18.1 Abstract Definition....155
7.1.18.2 Abstract Equation....155
7.1.18.3 Trigger Points....155
7.1.19 {Service} Message Download Access Time [s]....155
7.1.19.1 Abstract Definition....155
7.1.19.2 Abstract Equation....155
7.1.19.3 Trigger Points....155
7.1.20 {Service} Message Download Data Transfer Cut-off Ratio [%]....155
7.1.20.1 Abstract Definition....155
7.1.20.2 Abstract Equation....155
7.1.20.3 Trigger Points....156
7.1.21 {Service} Message Download Data Transfer Time [s]....156
7.1.21.1 Abstract Definition....156
7.1.21.2 Abstract Equation....156

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
https://standards.iteh.ai/catalog/standards/sist/ce3f0f03f-a7e2-4f17-b1e8-4a40a0056ace/etsi-ts-102-250-2-v1.6.2-2008-09