INTERNATIONAL TELECOMMUNICATION UNION

ITU-T H.248 Sub-series Implementors' Guide

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

(30 January 2004)

SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

Infrastructure of audiovisual services – Communication procedures

Implementors' Guide for the H.248 Sub-series of Recommendations ("Media Gateway Control Protocol")

Summary

This document is a compilation of reported defects identified in the ITU-T H.248 sub-series of Recommendations currently in force. It must be read in conjunction with the Recommendations to serve as an additional authoritative source of information for implementors. The changes, clarifications and corrections defined herein are expected to be included in future versions of affected H.248 sub-series Recommendations.

This revision contains all updates submitted up to and including those at Study Group 16 meeting in January 2004.

This document was approved by ITU-T Study Group 16 on 30 January 2004 and obsoletes the earlier version of this Implementors' Guide approved on 30 May 2003. Please note that the Implementors' Guide for H.248.1 Version 1 is published as a *separate* document.

Change Log

(All changes that were included in H.248.1 v1 (03/02) are omitted here.)

V10 (Bruges, June 2002)

Changed references to H.248 Amendment 1 to H.248.1 and added new sections for changes common to H.248.1 v1 and v2 and sections exclusively for H.248.1v2, renumbering the existing sections and IG item numbers.

New:

6.1 Specify types for rtp/jit and rtp/delay in Annex E.12.4
6.2 Define the '#' symbol in INEQUAL in text encoding
6.3 Empty Descriptor Syntax
6.4 Define the symbol for NULL Context in text encoding
6.5 Corrections to Appendix A example statistics
6.6 Corrections to Package Guidelines for Statistics in 12.1.5
6.7 Specification of the meaning of automatic in E.13 tdm package

V11 (Geneva, October 2002)

Modification:

6.7 Added additional changes to gain

New:

6.8 Protocol Version Negotiation
6.9 Statistics and Move
6.10 Incorrect reference
6.11 Additional Codepoint for Annex C
6.12 Wildcarding Principles
11.1 Additional error codes (this is a new section for H.248.8 and renumbers all higher IG sections)

V12 (San Jose, February 2003)

Modification:

11.1 Package-defined Error Codes (Section renamed – no other changes)

New:

6.13 Wildcarding in the Topology Descriptor
6.14 Binary Value for Packetization Time (Annex C)
10.3 Announcement Package Editorial Error
11.2 Additional Error Code

V13 (Geneva, May 2003)

New:

6.15 Modification of Terminations by MGCs
6.16 Optional Command in an Action
6.17 Ordering of Transactions
6.18 Replies to Actions with no Commands

V14 (Paris, September 2003)

Removed the section for RFC-3015 and added a new section for RFC-3525, since RFC- 3525 has obsoleted RFC-3015. Added new section for H.248.17. Made several editorial changes to the text.

Modification:

6 Technical and Editorial Changes to H.248.1 (either version)
6.3 Ambiguous Audit and Individual Audit Return (Changed title and description – no technical change)

New:

12.1 Editorial Errors in H.248.17

V15 (Geneva, January 2004) [TD 60/PLEN]

Removed all items incorporated into corrigenda and amendments.

Contact Information

ITU-T Study Group 16 / Question 3 Rapporteur	Christian Groves Australia	Tel: +61 3 9301 6116 Fax: none E-mail: Christian.Groves@ericsson.com
Implementors' Guide ITU-T Recommendation H.248 Editor	Kevin Boyle II USA	Tel: +1 919 991 2690 Fax: none E-mail: kboyle@nortelnetworks.com

Table of Contents

Revised Implementors' Guide for the H.248 Sub-series of Recommendations

1 Scope

This guide resolves defects in the following categories:

- editorial errors
- technical errors, such as omissions and inconsistencies
- ambiguities

In addition, the Implementors' Guide may include explanatory text found necessary as a result of interpretation difficulties apparent from the defect reports.

This Guide will not address proposed additions, deletions, or modifications to the Recommendations that are not strictly related to implementation difficulties in the above categories. Proposals for new features should be made through contributions to the ITU-T.

2 Introduction

In order to give a clearer understanding of the text components and versions of Recommendation H.248, the Recommendation, including its annexes, has been renumbered into a sub-series according to the table below.

Renumbering table for Recommendation H.248

Previous numbering	New numbering	Title
H.248 (Main body and Annexes A to E)	H.248.1	Gateway control protocol Version 2
H.248, Annex F	H.248.2	Facsimile, text conversation and call discrimination packages
H.248, Annex G	H.248.3	User interface elements and action packages
H.248, Annex H	H.248.4	Transport over SCTP
H.248, Annex I	H.248.5	Transport over ATM
H.248, Annex J	H.248.6	Dynamic tone definition package
H.248, Annex K	H.248.7	Generic announcement package
H.248, Annex L	H.248.8	Error codes and service change reason description
H.248, Annex M.1	H.248.9	Advanced media server packages
H.248, Annex M.2	H.248.10	Media gateway resource congestion handling package
H.248, Annex M.3	H.248.11	Media gateway overload control package
H.248, Annex M.4	H.248.12	H.248 packages for H.323 and H.324 interworking
H.248, Annex M.5	H.248.13	Quality alert ceasing package
H.248, Annex M.6	H.248.14	Inactivity timer package
H.248, Annex N	H.248.15	SDP H.248 package

The H.248 Implementors' Guide is a compilation of reported defects for all versions of the H.248.x sub-series of Recommendations, except H.248.1 Version 1 (03/2002). *For the defects in Version 1, see the H.248.1 Version 1 Implementors' Guide.*

In this edition of the Guide, reported defects identified as of 01/2004 are given for:

– H.248.1 version 2 (05/2002 plus corrections and editorial modifications of 01/2004)

– H.248.2 (11/2000)

The Guide must be read in conjunction with the H.248.x sub-series of Recommendations to serve as an additional source of information for implementors. The changes, clarifications and corrections defined herein are expected to be included in future versions of affected H.248.x Recommendations.

3 Defect Resolution Procedure

Upon discovering technical defects with any components of the H.248.x sub-series Recommendation, please provide a written description directly to the editors of the affected Recommendations with a copy to the Q.3/16 Rapporteur. The template for a defect report is located at the end of the Guide. Contact information for these parties is included at the front of the document. Return contact information should also be supplied so a dialogue can be established to resolve the matter and an appropriate reply to the defect report can be conveyed. This defect resolution process is open to any interested party. Formal membership in the ITU is not required to participate in this process.

4 References

This document refers to the following H.248.x sub-series Recommendations:

– ITU-T Recommendation H.248.1 Version 2 (05/2002) Corr.1 (03/2004), *Media Gateway Control Protocol*

– ITU-T Recommendation H.248.2 (2000), *Gateway Control Protocol: Facsimile, Text Conversation and Call Discrimination packages*

5 Nomenclature

In addition to traditional revision marks, the following marks and symbols are used to indicate to the reader how changes to the text of a Recommendation should be applied:

Symbol	Description
[Begin Correction]	Identifies the start of revision marked text based on extractions from the published Recommendations affected by the correction being described.
[End Correction]	Identifies the end of revision marked text based on extractions from the published Recommendations affected by the correction being described.
...	Indicates that the portion of the Recommendation between the text appearing before and after this symbol has remained unaffected by the correction being described and has been omitted for brevity.
--- SPECIAL INSTRUCTIONS --- {instructions}	Indicates a set of special editing instructions to be followed.

6 Technical and Editorial Corrections to H.248.1 (05/2002) Corr.1 (03/2004)

None.

7 Technical and Editorial Corrections to H.248.2 (2000)

7.1 Package ID of Text Telephone Package in H.248.2 shall be 0x0010

Description:	The numeric ID of the Text Telephone package in Section 7 of H.248.2 shall be changed to 0x0010 to match the IANA registration.

[Begin Correction]

~~F.~~7 Text Telephone package
PackageID: txp (0x001~~0~~6)

…

[End Correction]

7.2 Value of NAK

Description:	The numeric value of NAK shall be 0x000D, in the V8bistype parameter of the dtone event in the Call Type Discrimination package.

[Begin Correction]

~~F.~~8.2.1 Discriminating tone detected
EventID: dtone (0x0001)
...
ObservedEventDescriptor parameters:
....
DiscriminatingToneValue
ParameterID: dtvalue (0x0002)
....
V8bistype
ParameterID: v8bist (0x0004)
Type: enumeration
Possible values:

ESi	(0x0001)	V.8bis signal ESi
ESr	(0x0002)	V.8bis signal ESr
MRe	(0x0003)	V.8bis signal MRe
MRdi	(0x0004)	V.8bis signal MRd from initiator
MRdr	(0x0005)	V.8bis signal MRd from responder
CRe	(0x0006)	V.8bis signal CRe
CRdi	(0x0007)	V.8bis signal CRd from initiator
CRdr	(0x0008)	V.8bis signal CRd from responder
MS	(0x0009)	V.8bis message MS with contents in "dtvalue"
CL	(0x000A)	V.8bis message CL with contents in "dtvalue"
CLR	(0x000B)	V.8bis message CLR with contents in "dtvalue"
ACK	(0x000C)	V.8bis message ACK with contents in "dtvalue"
NAK	(0x000D~~E~~)	V.8bis message NAK with contents in "dtvalue"

…

[End Correction]

7.3 Correction in parameter values in Call Type Discrimination package in H.248.2

Description:	Correction of conflicting parameter values for MRdrh, MRdrl and CReh in the V8bsn parameter of the V8bisSignal signal in the Call Type Discrimination package.

[Begin Correction]

~~F.~~8.3.4 V8bisSignal

SignalID: v8bs (0x0004)
Signaltype: BR
Parameters:
V8bisSigname
ParameterID: V8bsn (0x0001)
Type: Enumeration
Possible values:

ESi	(0x0001)	V.8bis signal ESi
ESr	(0x0002)	V.8bis signal ESr
MRe	(0x0003)	V.8bis signal MRe
MRdi	(0x0004)	V.8bis signal MRd from initiator
~~MRdrh~~	~~(0x0005)~~	~~V.8bis signal MRd from responder on high power~~
MRdrl	(0x0005)	V.8bis signal MRd from responder on low power
~~Creh~~	~~(0x0007)~~	~~V.8bis signal Cre on high power~~
CRel	(0x0006)	V.8bis signal CRe on low power
CRdi	(0x0007)	V.8bis signal CRd from initiator
CRdr	(0x0008)	V.8bis signal CRd from responder
MS	(0x0009)	V.8bis message MS with contents in signalvalue
CL	(0x000A)	V.8bis message CL with contents in signalvalue
CLR	(0x000B)	V.8bis message CLR with contents in signalvalue
ACK	(0x000C)	V.8bis message ACK with contents in signalvalue
NAK	(0x000D)	V.8bis message NAK with contents in signalvalue
MRdrh	(0x000E)	V.8bis signal MRd from responder on high power
CReh	(0x000F)	V.8bis signal CRe on high power

Default may be provisioned

…

[End Correction]

7.4 Correction in parameter values in Call Type Discrimination package in H.248.2

Description:	Correction of conflicting parameter values for dtt parameter in dtone event. in the Call Type Discrimination package.

[Begin Correction]

~~F.~~8.2.1 Discriminating tone detected

EventID: dtone (0x0001)
Description:
This event indicates that a signal valid for detection and discrimination of mode was detected. The signal name is given as a parameter. Further logic is needed in some cases to discriminate the call type from this information. The V.8bis related parameters are returned only when V.8bis is supported [5].

Note that some textphones operate with DTMF tones. This package decodes initial DTMF signals according to the specification for text telephones in V.18 [6]. DTMF detection may be indicated also from the "dd" package if that is active.

EventsDescriptor parameters:

none

ObservedEventDescriptor parameters:

DiscriminatingToneType

ParameterID: dtt (0x0001)

Type: Enumeration

Possible values:

For FAX

CNG	(0x0001)	a T.30 fax calling tone
V21flag	(0x0002)	V21 tone and flags for fax answering

For TEXT

XCI	(0x0003)	a V.18 XCI
V18txp1	(0x0004)	a V.18 txp signal in channel V.21(1)
V18txp2	(0x0005)	a V.18 txp signal in channel V.21(2)
BellHi	(0x0006)	a Bell 103 carrier on the high channel
BellLo	(0x0007)	a Bell 103 low channel
Baudot45	(0x0008)	a Baudot45 initial carrier and characters
Baudot50	(0x0009)	a Baudot50 initial carrier and characters
Edt	(0x000A)	an EDT initial tone and characters
DTMF	(0x000B)	DTMF signals

For DATA

Sig	(0x000C~~B~~)	Modulation signal from a mode only used for data, i.e. not V.21, V.23 nor Bell 103

Common to TEXT and DATA:

CT	(0x000D~~C~~)	a V.25 calling tone
V21hi	(0x000E~~D~~)	a V.21 carrier on the higher frequency channel
V21lo	(0x000F~~E~~)	a V.21 carrier on the low frequency channel
V23hi	(0x0010~~0F~~)	a V.23 high carrier
V23lo	(0x0011~~0~~)	a V.23 low carrier
CI	(0x0012~~1~~)	a V.8 CI with contents in "dtvalue"

Common to FAX, TEXT and DATA:

ANS	(0x0013~~2~~)	V.25 ANS, equivalent to T.30 CED from answering terminal
ANSbar	(0x0014~~3~~)	V.25 ANS with phase reversals
ANSAM	(0x0015~~4~~)	V.8 ANSam
ANSAMbar	(0x0016~~5~~)	V.8 ANSam with phase reversals
CM	(0x0017~~6~~)	V.8 CM with contents in "dtvalue"
CJ	(0x0018~~7~~)	V.8 CJ
JM	(0x0019~~8~~)	V.8 JM with contents in "dtvalue"
ENDOFSIG	(0x001A~~19~~)	End of reported signal detected reported for continuous or repeated signals
V8BIS	(0x001B~~20~~)	V.8bis signal, with signal type in parameter V8bistype and value in "dtvalue"

…

[End Correction]

7.5 Missing Keywords in H.248.2 Clause 8.1.2 (ex-F.8.1.2)

Description:	[H.248.2|F.] 8.1.2 neglects to specify "Defined in:" or "Characteristics:"
Reference:	Subject: Re: H.248 Annex F typos Date: Wed, 02 May 2001 16:06:27 +1000 From: Christian Groves <Christian.Groves@ericsson.com> To: Troy Cauble <troy@bell-labs.com> CC: gunnar.hellstrom@era.ericsson.se, gparsons@nortelnetworks.com, jraff@brooktrout.com, rspitzer@telogy.com,MEGACO list <megaco@fore.com>

[Begin Correction]

~~F.~~8.1.2 Text Call Types

…

V18 (0x0008)

Description:

This parameter indicates for what text telephone modes the termination is monitored, used in TEXT mode.

Defined in: Termination State

Characteristics: Read / Write

…

[End Correction]

7.6 Duplicated propertyID in H.248.2 Clause 8.1 (ex-F.8.1)

Description:	[H.248.2|F.] 8.1.3 and [H.248.2|F.] 8.1.6 have the same PropertyID string (v8bsup). [CHG] Yes. The authors can specify an appropriate name.
Reference:	Subject: Re: H.248 Annex F typos Date: Wed, 02 May 2001 16:06:27 +1000 From: Christian Groves <Christian.Groves@ericsson.com> To: Troy Cauble <troy@bell-labs.com> CC: gunnar.hellstrom@era.ericsson.se, gparsons@nortelnetworks.com, jraff@brooktrout.com, rspitzer@telogy.com,MEGACO list <megaco@fore.com>

[Begin Correction]

~~F.~~8.1.6 PhasereversalDetect

PropertyID: phrevdet~~v8bsup~~ (0x0006)

Type: Boolean

…

[End Correction]

7.7 Inconsistencies in Fax Transport property in H.248.2 Clause 9.1 (ex- F.9.1)

Description:	[H.248.2|F.] 9.1.1 and [H.248.2|F.] 9.1.2 have the same PropertyID number (0x01). [H.248.2|F.] 9.1.2 updated. There is also a spurious dot in one of the value names.
Reference:	Subject: Re: H.248 Annex F typos Date: Wed, 02 May 2001 16:06:27 +1000

	From: Christian Groves <Christian.Groves@ericsson.com> To: Troy Cauble <troy@bell-labs.com> CC: gunnar.hellstrom@era.ericsson.se, gparsons@nortelnetworks.com, jraff@brooktrout.com, rspitzer@telogy.com,MEGACO list <megaco@fore.com>

[Begin Correction]

~~F.~~9.1.2 Fax Transport

PropertyID: ftrpt (0x000~~1~~4)
Type: Enumeration
Possible values:

T30	(0x0001)	for T.30 PSTN sessions without ECM
T30ECM	(0x0002)	for T.30 PSTN sessions with ECM (non-V.34)
T~~.~~30V34	(0x0003)	for T.30 PSTN sessions with V.34 (half-duplex)

[End Correction]

7.8 Duplicated PropertyID in H.248.2 Clause 10.1 (ex-F.10.1)

Description:	[H.248.2|F.] 10.1.1 and [H.248.2|F.] 10.1.2 have the same PropertyID number (0x01). [H.248.2|F.] 10.1.2 to be updated.
Reference:	Subject: Re: H.248 Annex F typos Date: Wed, 02 May 2001 16:06:27 +1000 From: Christian Groves <Christian.Groves@ericsson.com> To: Troy Cauble <troy@bell-labs.com> CC: gunnar.hellstrom@era.ericsson.se, gparsons@nortelnetworks.com, jraff@brooktrout.com, rspitzer@telogy.com,MEGACO list <megaco@fore.com>

[Begin Correction]

~~F.~~10.1.2 IPFaxTransport

PropertyID: ipftrpt (0x0007~~1~~)
Type: Enumeration

…

[End Correction]

Annex A: Defect Report Form for H.248 Sub-series of Recommendations

DATE:	
CONTACT INFORMATION **NAME:** **COMPANY:** **ADDRESS:** **TEL:** **FAX:** **EMAIL:**	
AFFECTED RECOMMENDATIONS:	
DESCRIPTION OF PROBLEM:	
SUGGESTIONS FOR RESOLUTION:	

NOTE - Attach additional pages if more space is required than is provided above.