

INTERNATIONAL TELECOMMUNICATION UNION

**ITU-T**

# **H.248 Sub-series Implementors' Guide**

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

(6 November 2009)

SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS  
Infrastructure of audiovisual services – Communication  
procedures

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

**ITU-T**

## 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 Geneva, 26 October – 06 November 2009.

This Implementors' Guide was approved by ITU-T Study Group 16 on 6 November 2009 (TD 142/Plen) and it obsoletes the earlier version of this Implementors' Guide approved on 6 February 2009.

**NOTE:** the Implementors' Guides for H.248.1 Version 1 and Version 2 are published as *separate* documents.

## Change Log

(All changes that were included in corrigenda, amendments or revisions to the recommendations in the H.248 subseries are omitted here.)

V31 (Geneva, November 2009)

New:

H.248.2 Section

6.1 Message Name Error

H.248.26 Section

20.1 Inconsistent default for Pulse Repetition Interval

Updated:

None

Removed:

Section related to H.248.1. The items are included in H.248.1v3 Amd.2

Section related to H.248.5. The item is covered by revised H.248.5.

Section related to H.248.9. The items are covered by revised H.248.9.

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# 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

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) and H.248.1 Version 2 (05/2002) Corrigendum 1 (03/2004). *For the defects in Version 1, see the H.248.1 Version 1 Implementors' Guide. For the defects in Version 2, see the H.248.1 Version 2 Implementors' Guide.*

In this edition of the Guide, reported defects identified as of 11/2009 are given for:

- H.248.2 (01/2005)
- H.248.3 (11/2000)
- H.248.8 (08/2007)
- H.248.12 (01/2005)
- H.248.16 (11/2002)
- H.248.17 (11/2002) & Corrigendum 1 (03/2004)
- H.248.18 (11/2002)
- H.248.20 (11/2002)
- H.248.22 (07/2003)
- H.248.23 (01/2005) & Corrigendum 1 (05/2006)
- H.248.25 (01/2007)
- H.248.26 (01/2005)
- H.248.29 (01/2005)
- H.248.30 (01/2007)
- H.248.32 (01/2005)
- H.248.34 (01/2005)
- H.248.36 (01/2005)

- H.248.37 (06/2008)

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 Recommendations, 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.248.2 (01/2005), *Gateway Control Protocol: Facsimile, text conversation and call discrimination packages*
- ITU-T Recommendation H.248.3 (11/2000), *Gateway Control Protocol: User interface elements and actions packages*
- ITU-T Recommendation H.248.8 (08/2007), *Gateway control protocol: Error code and service change reason description*
- ITU-T Recommendation H.248.12 (01/2005), *Gateway control protocol: H.248.1 packages for H.323 and H.324 interworking*
- ITU-T Recommendation H.248.14 (03/2002), *Gateway control protocol: Inactivity timer package*
- ITU-T Recommendation H.248.16 (11/2002), *Gateway control protocol: Enhanced digit collection packages and procedures*
- ITU-T Recommendation H.248.17 (11/2002), Corrigendum 1 (03/2004), *Gateway control protocol: Line test packages*
- ITU-T Recommendation H.248.18 (11/2002), *Gateway control protocol: Package for support of multiple profiles*
- ITU-T Recommendation H.248.20 (11/2002), *Gateway Control Protocol: The use of local and remote descriptors with H.221 and H.223 multiplexing*
- ITU-T Recommendation H.248.22 (07/2003), *Gateway Control Protocol: Shared Risk Group Package*
- ITU-T Recommendation H.248.23 (01/2005), Corrigendum 1 (05/2006), *Gateway Control Protocol: Enhanced alerting packages*
- ITU-T Recommendation H.248.25 (01/2005), *Gateway Control Protocol: Basic CAS packages*
- ITU-T Recommendation H.248.26 (01/2005), *Gateway Control Protocol: Enhanced analog lines packages*

- ITU-T Recommendation H.248.29 (01/2005), Corrigendum 1 (05/2006), *Gateway Control Protocol: International CAS compelled register signalling packages*
- ITU-T Recommendation H.248.30 (01/2007), *Gateway Control Protocol: RTCP extended performance metrics packages*
- ITU-T Recommendation H.248.32 (01/2005), *Gateway Control Protocol: Detailed congestion reporting package*
- ITU-T Recommendation H.248.34 (01/2005), *Gateway Control Protocol: Gateway control protocol: Stimulus analogue lines package*
- ITU-T Recommendation H.248.36 (09/2005), *Gateway Control Protocol: Hanging Termination Detection package*
- ITU-T Recommendation H.248.37 (01/2005), *Gateway Control Protocol: IP NAPT traversal package*

## 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
<u>[Begin Correction]</u>	Identifies the start of revision marked text based on extractions from the published Recommendations affected by the correction being described.
<u>[End Correction]</u>	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.248.2 (01/2005)

### 6.1 Message Name Error

<b>Description:</b>	The message in step 19 of “Figure I.1/H.248.2 – MGC controlled call discrimination” Appendix I should be a MOD resp.
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<b>Reference:</b>	Subject: [Megaco] Error in H.248.2 Date: Thu, 29 Oct 2009 11:35:17 +0100 From: Arturo Martin De Nicolas <arturo.martin-de-nicolas@ericsson.com> To: <megaco@ietf.org>
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*[Begin Correction]*

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## Appendix I – Call Discrimination Flows

...

Step (19) ~~MODADD~~.resp(T3)

...

**Figure I.1/H.248.2 – MGC Controlled Call Discrimination**

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*[End Correction]*

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## 7 Technical and Editorial Corrections to H.248.3 (2000)

### 7.1 Set Indicator Value Discrepancy

<b>Description:</b>	<p>There is a discrepancy in the possible values of "Indid" parameter of "Setindactor" signal of "Indicator" package recommended in the ITU-T Rec. H.248.3.</p> <p>The "Set of line indicators" for the parameter "Indid" are having values "l001-1999 (0x0003-0x03f9)".</p> <p>In decimal number notation, this range corresponds to 999 values while in hexadecimal notation, this range corresponds to 1015 values.</p> <p>The hexadecimal notation should also correspond to 999 values, i.e., it should be "l001-1999 (0x0003-0x03e9)".</p>
<b>Reference:</b>	<p>Subject: [Megaco] Discrepancy in possible values of parameter of Indicator package recommended in ITU-T Rec. H.248.3</p> <p>Date: Wed, 16 Apr 2008 12:36:08 +0530</p> <p>From: Suruchi Agarwal &lt;suruchi.agarwal@aricent.com&gt;</p> <p>To: megaco@ietf.org &lt;megaco@ietf.org&gt;</p>

### 8.3 Signals

#### SetIndactor

SignalID: is (0x0001)

Set indicator state.

Parameters:

Indid (0x0001)

Type: Enumeration.

Possible values:

Name	Description
il (0x0001)	Hold
ic (0x0002)	Conference
l001-l999 (0x0003-0x03f90x03e9)	Set of line indicators
f001-f999 (0x03fa-0x07e0)	Set of assignable function indicators
ir (0x07e1)	Ringer/Alerter indication
im (0x07e2)	Message waiting indicator

Note: Values 0x03ea to 0x03f9 are reserved.

state (0x0002)

Type: Enumeration.

Possible values: On (0x0001), off (0x0002), blink (0x0003), fast\_blink (0x0004), slow\_blink (0x0005).

Default is off.

## 8 Technical and Editorial Corrections to H.248.8 (2005)

### 8.1 Allow the MG to issue error #511

<b>Description:</b>	<p>H.248.8 currently defines three error codes dealing with lack of resources:</p> <ol style="list-style-type: none"><li>1. Error #510 indicates a lack of common resources. This error may only be issued by the MG.</li><li>2. Error #511 indicates a temporary lack of resources; usually due to an overload of H.248 commands. This error may only be issued by the MGC.</li><li>3. Error #526 indicates a lack of bandwidth resources. This error may only be issued by the MG.</li></ol> <p>Therefore an MG may use the error code in order differentiate between lack of common resources and bandwidth resources. However the MG cannot indicate that a command was not handled due to overload.</p>
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<b>Reference:</b>	COM16-C.342 (2005-2008)
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*[Begin Correction]*

#### 4.2.49 Error code #: 511

**Name:** Temporarily busy

**Definition:** The command(s) was rejected due to a temporary busy condition in the MGC or MG.

**Error text in the error descriptor:** –

**Comment:** Upon receiving this error code, the command may be resent as the busy condition may have abated.

*[End Correction]*

## 8.2 Response to unknown “Disconnected/900” ServiceChange

<b>Description:</b>	<p>If the MGC fails to respond to the "Disconnected/900" ServiceChange request (i.e. this request also times-out), the MG considers the control association as down. It will no longer accept requests received on this control-association. Instead it will try registering with other MGCs using a "Failover/909" ServiceChange. Whenever its configuration indicates that it should try registering with the original MGC, it would instead try to renew the original control-association using a "Disconnecetd/900" request. Note that this "renewing" is not a registration; i.e. the MG usually never tries to re-register with the original MGC as this will wipe previously established information on the MG.</p> <p>If this is correct, what error should the MGC return when it receives a "Disconnected/900" ServiceChange but knows nothing about an existing control-association? Some error must be returned, as otherwise the MG will never be able to connect with that MGC.</p> <p>A Error 401 “Protocol Error” may be used as a generic response however a new descriptive error code should be added.</p> <p>Error Code 507 “Unknown Control Association”.</p>
<b>Reference:</b>	<p>Subject: Re: [Megaco] Version of "Disconnected" ServiceChange messages</p> <p>Date: Wed, 7 May 2008 01:58:04 -0400</p> <p>From: Kevin Boyle &lt;kboyle@nortel.com&gt;</p> <p>To: Elad Chomsky &lt;elad@juniper.net&gt;, Carsten Waitzmann &lt;cwaitzmann@alcatel-lucent.de&gt;</p> <p>CC: <a href="mailto:megaco@ietf.org">megaco@ietf.org</a></p> <p>And</p> <p>AVD-3583</p>

#### 4.2.47 Error code #: 506

**Name:** Number of TransactionPendings Exceeded

**Definition:** Indicates that the maximum number of TransactionPendings have been received and that the transaction can be assumed to be in error.

**Error Text in the Error Descriptor:** –

**Comment:** –

#### 4.2.4x Error code #: 507

**Name:** Unknown Control Association

**Definition:** Returned by a MGC in response to a ServiceChangeRequest with method “Disconnect” when the MGC has no knowledge of the indicated control association. MGC should only return responses to MGs that it has knowledge of in order to minimise security issues.

**Note:** The MGC should respond using the same H.248 message version as the received message.

**Error Text in the Error Descriptor:** –

**Comment:** –

#### 4.2.48 Error code #: 510

**Name:** Insufficient resources

**Definition:** The command(s) was rejected due to lack of common resources in the MG.

**Error Text in the Error Descriptor:** The Error Text in the Error Descriptor includes the name or identity of the property, signal or event that represents a resource lacking in the MG.

**Comment:** –

## 9 Technical and Editorial Corrections to H.248.12 (08/2007)

### 9.1 Overlapping Property and Event IDs

<b>Description:</b>	<p>There is an overlap between package h323bc and h245. The problem properties from the h323bc package are:</p> <p>fastconnect (0x0001),</p> <p>h245encapstatus(0x0002)</p> <p>and event: sepH245 (0x0001).</p> <p>There two ways to fix the problem:</p> <p>1) Renumber the properties to fastconnect (0x0003), H245encapstatus (0x0004) and event: sepH245 (0x0003).</p> <p>2) Deprecate the package extension. e.g. change the line:</p> <p>Extends: h245 Package version 1 (defined in this Recommendation)</p> <p>to:</p> <p>Extends: None.</p> <p>Fix 1: would cause backwards incompatibility problems where people have implemented referring to h245 package elements by their ids rather than</p>
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	through the h323bcp package. Fix 2: would cause problem where people only specify elements through the h323bcp package. Package reporting may also change. In order to minimize impacts to implementations fix 2 is proposed.
<b>Reference:</b>	AVD-3316

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*[Begin Correction]*

...

## 6 H323 Bearer Control Package

Package Name: H.323 Bearer Control

PackageID: h323bc, (0x002b)

Version: 1

Extends: ~~None~~  
~~h245 Package version 1 (defined in this Recommendation)~~

...

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*[End Correction]*

## 10 Technical and Editorial Corrections to H.248.16 (11/2002)

### 10.1 Unsuccessful Digit Map match reporting

<b>Description:</b>	See item 6.21.  As this problem is confined to DigitMap Events rather than adding a generic parameter to the H.248.1 syntax it is proposed to add a new Event Parameter to the DigitMap Completion Event in the DTMF Detection Package (Clause E.6.22/H.248.1v3) and also the Extended Digit Map and the Matched Digit Map Completion Events in the Extended DTMF Detection Package (Clause 5.2/H.248.16).  Note: An Implementors' Guides typically only provides clarification to existing behaviour. The item is considered to introduce new functionality. However given the nature of the issue it is raised and recorded here whilst an Amendment is being prepared.
<b>Reference:</b>	COM16-C.445 (2005-2008)

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*[Begin Correction]*

## 5 Extended DTMF detection package

PackageID: xdd (0x0052)

Version: ~~1~~<sub>2</sub>

Extends: dd (0x0006) version ~~1~~2

This package provides an extended DTMF digit map completion event, incorporating detailed reporting of timeouts, digit buffering control, and reporting and control of processing of extra events.

## 5.1 Properties

None.

## 5.2 Events

Extended DigitMap Completion Event

EventID: xce (0x0005)

Generated when a digit map completes as described in 7.1.14/H.248.1, or in 5.5 "Procedures" of this Recommendation, as appropriate.

EventsDescriptor parameters:

### *Buffer Control*

ParameterID: bc (0x0001)

Type: integer

Possible values: 0 upwards. Default value is 0.

Description:

Maximum period for which digit buffering should occur following reporting of this event, in seconds.

### *Extra Digit Disposition*

ParameterID: xdd (0x0002)

Type: Boolean

Possible values: ON or OFF. Default value is OFF.

Description:

If ON, an extra digit event triggering digit map completion by causing mismatch to all candidate patterns is discarded. If OFF, the extra digit event is processed as indicated by step 5 of the appropriate matching procedures.

### *Match Procedure*

ParameterID: mp(0x0003)

Type: enumeration

Possible values: base or enhanced. Default value is base.

"base" (0x0001) Use match procedures described in 7.1.14/H.248.1.

"enhanced" (0x0002) Use match procedures described in 5.5.

Description:

Indicates which matching procedures should be used for this digitmap.

### Unsuccessful Match Reporting

Parameter Name: Unsuccessful Match Reporting

ParameterID:	umr (0x0004)
Description:	The MGC may use this parameter to control whether the <u>DigitMap Completion Event is generated in the event of an unsuccessful DigitMap match (i.e. match with method “Partial match” or “Full Match”).</u>
Type:	Boolean
Optional:	Yes
Possible values:	
<i>On</i>	<u>Generate DigitMap Completion Event on unsuccessful match.</u>
<i>Off</i>	<u>Do not generate a DigitMap Completion Event on an unsuccessful match.</u>
Default:	<i>On</i>

...

#### 5.5.1.4 DigitMap completion event

These procedures are identical to those in 7.1.14.4/H.248.1. By default DigitMaps are processed according to the procedures of 7.1.14 and when the DigitMap has completed (see clause 7.1.14.4) it is notified to the MGC and any embedded signals and embedded events are triggered. However if the Unsuccessful Match Reporting parameter is set to “off” and the DigitMap completion was triggered as a result of an unsuccessful match then the DigitMap completion event is not notified to the MGC nor are embedded signals and/or embedded events triggered. The DigitMap however will be de-activated.

...

## 6 Enhanced DTMF detection package

PackageID: edd (0x0066)

Version: +2

Extends: xdd (0x0052) version 1

This package provides an enhanced DTMF digit map completion event, incorporating additional digit collection procedures for reporting a completion event.

### 6.1 Properties

None.

### 6.2 Events

Matched DigitMap Completion Event

EventID: mce (0x0006)

Generated when a digit map completes as described in 7.1.14/H.248.1, or in 5.5, as appropriate.

EventsDescriptor parameters:

*Buffer Control*

ParameterID: bc (0x0001)

Type: integer

Possible values: 0 upwards. Default value is 0.

Description:

Maximum period for which digit buffering should occur following reporting of this event, in seconds.

#### Unsuccessful Match Reporting

Parameter Name: Unsuccessful Match Reporting

ParameterID: umr (0x0002)

Description: The MGC may use this parameter to control whether the DigitMap Completion Event is generated in the event of an unsuccessful DigitMap match (i.e. match with method “Partial match” or “Full Match”).

Type: Boolean

Optional: Yes

Possible values:

On Generate DigitMap Completion Event on unsuccessful match.

Off Do not generate a DigitMap Completion Event on an unsuccessful match.

Default: On

...

#### 6.5.1.4 DigitMap completion event

See [clause 5.5.1.4](#). These procedures are identical to those in 7.1.14.4/H.248.1.

...

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*[End Correction]*

## 11 Technical and Editorial Corrections to H.248.17 (2002) Corr. 1 (2004)

### 11.1 Correction of Typographical error in Clause 8.3.1.2/H.248.17

<b>Description:</b>	In clause 8.3.1.2/H.248.17 there is a reference to the "bcg/bdtq" (A.8/Q.1950) signal. This should be “bcg/bdt”.
<b>Reference:</b>	AVD-2843

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*[Begin Correction]*

#### 8.3.1.2 Auto Answering Trunk (AAT)

##### Auto Answering Trunk with forced disconnection

To perform the line test described in JJ-90-10 Appendix A.4.1 over an MGC/MG interface, the MGC shall request the MG, via the signal "bgc/brt"(A.8/Q.1950, "Basic Call Progress Tones



Generator with Directionality") in an AMM command, to initiate a ringing tone. After 6 seconds the MGC shall then request the MG, via the signal "bcg/bdt" (A.8/Q.1950), to initiate a dial tone. After reception of Modify acknowledgement, the MGC having timed the Dial Tone for a period of 10 seconds will request MG to stop Dial Tone by sending a MOD command.

...

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[End Correction]

## 12 Technical and Editorial Corrections to H.248.18 (11/2002)

### 12.1 Duplicated Error Code 459

<b>Description:</b>	<p>H.248.26 specifies error code #459:</p> <p><b>7.5.1 Invalid Combination of Metering Detection Events</b></p> <p><i>Error Code #: 459</i></p> <p><i>Name: Invalid Combination of Metering Detection Events</i></p> <p><i>Definition: The command was disregarded because the Events Descriptor contained more than one metering detection event.</i></p> <p><i>Error Text in the error Descriptor: --</i></p> <p><i>Comment: --</i></p> <p>However H.248.18 (and the IANA registration page) also specifies error code #459 as:</p> <p><b>5.6 Error Codes</b></p> <p><i>This package defines a new error code:</i></p> <p><i>#: 459 Name: Unsupported or Unknown Profile</i></p> <p><i>Definition: The Profile Name is not supported by the receiver. The command related to the unknown profile is disregarded.</i></p> <p>This leads to a duplication of error codes numbers. Whilst H.248.18 was approval before H.248.26, H.248.26 has been more widely implemented, therefore it is proposed to change the error code in H.248.18 from 459 to 461.</p>
<b>Reference:</b>	<p>Subject: [Megaco] Duplicated Error Code 459</p> <p>Date: Thu, 31 Jan 2008 17:34:04 +1100</p> <p>From: megaco ietf &lt;megaco@ietf.org&gt;</p>

## 5.5 Procedures

...

The MGC may set the Prof\_supp property using a Modify command to indicate the profile/s that it will use on the MG. The MGC shall use one or more of the profiles that the MG indicated in an AuditCapability of the Prof\_supp property. If the MGC tries to set the Prof\_supp property on the MG to a profile value that is unknown by the MG, at the first unknown profile the MG shall reply with error code [459-461](#) "Unsupported or Unknown Profile". If the Prof\_supp property is not set by the MGC then it shall be assumed that the MGC supports all the profiles supported by MG and that the MGC can use functionalities/capabilities of any of the profiles.

NOTE – This aligns with the ServiceChange procedure where by the MGC may indicate which profile it supports.

An Audit value command may be used to determine the profile/s that have been set.

## 5.6 Error Codes

This package defines a new error code:

#: [459-461](#) Name: Unsupported or Unknown Profile

Definition:

The Profile Name is not supported by the receiver. The command related to the unknown profile is disregarded.

Package: Profile Package prp, 0x0050

Reference: H.248.18

Error Text in the error Descriptor:

The Profile Name is included in the error text in the error descriptor. String Length 1 – 67 characters – 64 for name, 1 for "/" and 2 for version.

Comment: –

## 13 Technical and Editorial Corrections to H.248.20 (2002)

### 13.1 Media values

<b>Description:</b>	H.248.20 defines the following for the use of the Media field in the SDP m= line: <b>5.1.2 "m=line" Line for H.221 and H.223 MUX termination</b> <i>The syntax of the media field:</i> <b>media-field = "m=" media SP port ["/" integer] SP proto 1*(SP fmt) CRLF</b>
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	<p><i>The possible media values for media are "audio", "video", "data" and "control", depending on the media type within the specific H.248.1 Stream. "Control" is used if a Stream is defined for the demultiplexed H.245 messages.</i></p> <p>Currently the IETF are working on updating the SDP RFC (see: <a href="http://www.ietf.org/internet-drafts/draft-ietf-mmusic-sdp-new-23.txt">http://www.ietf.org/internet-drafts/draft-ietf-mmusic-sdp-new-23.txt</a>). In this text the IETF have removed the value “control” from the allowed list of media types. Thus it will soon be invalid to use value “control”. It is therefore proposed to allow the use of “application” for a de-multiplexed H.245 message.</p> <p>The draft defines the users of the media type “application” as:</p> <p><i>“Voice over IP, video teleconferencing, streaming media, instant messaging, etc. See also section 3 of RFC XXXX.”</i></p> <p>From this definition it is seen that type “application” would be appropriate for use for H.248.20.</p>
<b>Reference:</b>	AVD-2663

*[Begin Correction]*

### 5.1.2 "m=line" Line for H.221 and H.223 MUX termination

The syntax of the media field:

**media-field = "m=" media SP port ["/" integer] SP proto 1\*(SP fmt) CRLF**

The possible media values for media are "audio", "video", "data" and "~~application~~~~control~~", depending on the media type within the specific H.248.1 Stream. "~~application~~~~Control~~" is used if a Stream is defined for the demultiplexed H.245 messages.

Note: Some older applications may use the value “control”. To aid interoperability MGs should be able to recognize “control”.

...

*[End Correction]*

## 14 Technical and Editorial Corrections to H.248.22 (2003)

### 14.1 Correction of typographical errors

<b>Description:</b>	<p>H.248.22 contains typographical errors in that the property “shrisk/srgi” is referenced however the correct property reference is “shrisk/srgir”.</p> <p>H.248.1 defines the “Include shared risk group” property with the values “on/off”. Eg.</p> <p>5.1.1 Property Name: Include shared risk group</p> <p>PropertyID: incl, 0x0001</p>
---------------------	--

	<p>Description:</p> <p>The value of this property indicates if the shared risk group specified is requested to be used or to not be used (see 5.5.1.1 for further details).</p> <p>Type: Sublist of type Boolean</p> <p>Possible Values:</p> <p>"on" (TRUE) Use resources from the specified SRGI only [Default]</p> <p>"off" (FALSE) Use resources from any but the specified SRGI</p> <p>However the procedures use yes/no instead of on/off in one place. The procedures should be corrected to align with 5.1.1.</p>
<b>Reference:</b>	AVD-2467 and COM16-D.44 (2005-2008)

---

[Begin Correction]

#### 5.5.1.1 Usage of the “Include shared risk group” property

The "Include shared risk group" property shall be used to indicate to the MG if resources from the specified shared risk group identity (*shrisk/srgir*) must be used for the termination (*shrisk/incl* = ~~yes~~*on*) or if resources from the specified risk group identity must not be used for the termination (*shrisk/incl* = ~~no~~*off*). If the MGC is not concerned with which shared risk groups are used then it should not include the *shrisk/incl* nor *shrisk/srgir* properties. The *shrisk/incl* and *shrisk/srgir* properties are valid only for the command that they are contained in. They cannot be read/audited after the execution of the command. Wildcarding values with CHOOSE (\$) or ALL (\*) shall not be used with *shrisk/incl* and/or *shrisk/srgir*. For example: in the case of a semi-permanent connection and a protective secondary link, by specifying (*shrisk/incl* = *on*, *shrisk/srgir* = *I*) for the primary link and (*shrisk/incl* = *off*, *shrisk/srgir* = *I*) for the secondary, the MGC is assured that the primary and secondary links are not sharing the same groups of resources.

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[End Correction]

## 15 Technical and Editorial Corrections to H.248.23 (2005) Corr. 1 (2006)

### 15.1 Clarification of default pattern ID

<b>Description:</b>	The Corrigendum deleted a sentence that was in direct conflict with the defined default value for the pattern parameter of the dwa signal. Some confusion as to how the pattern is applied when not included in the signal has ensued. As with any other signal, the default is applied when the parameter is absent. A notation indicating that data to be sent without alerting should use the data signal would help ease the confusion.
<b>Reference:</b>	COM16-C.110 (2005-2008)

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[Begin Correction]

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#### 6.3.1.1.2 Pattern

...

Description: The pattern is an abstract indication of the distinctive alerting pattern that will be applied to the line. If data is to be applied without alerting, the data signal should be used.

...

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[End Correction]

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### 15.2 Clarification of solutions to possible race condition in dwa signal

<b>Description:</b>	A possible, but rare, race condition for the dwa signal has been raised in a number of contributions to SG16. There is a solution that utilizes the base protocol constructs that needs documentation in the package.
<b>Reference:</b>	Discussions arising from COM16 C-70 (2005-2008)

---

[Begin Correction]

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## 6.5 Procedures

...

For ADSI, there are constraints similar to the off-hook data with alerting around ACK digits and softkey/digit responses. Any responses that the MGC wishes to be made aware of should be requested in the Events descriptor. Digitmaps may be used for this application.

There is a possible race condition where an MGC might apply the dwa signal intending power ringing and data to be applied, but before the signal reaches the MG, the termination undergoes a transition to offhook. The result is that the signal would apply a call waiting tone in the interim while the MG reports the offhook and the MGC responds with updated Events and Signals Descriptors. It may be desirable to prevent any possibility of this race condition occurring. To achieve this, implementations may embed the andisp/dwa signal on the onhook event with its strict parameter set to "state". This will enforce that the dwa signal is only applied if the termination is still onhook when the command arrives at the MG.

Binary encoding SHALL carry the binary data. Text encoding SHALL carry the data as a hex string encoded as big-endian hex data.

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[End Correction]

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## 16 Technical and Editorial Corrections to H.248.25 (01/2007)

### 16.1 Provisioning RBS Package Events

<b>Description:</b>	The H.248 events “ <b>psoff</b> ” and “ <b>pson</b> ” as defined in <b>H.248.25 robbed bit signalling “rbs” package</b> , are specified with an EventsDescriptor parameter “ <b>psto</b> ”. The current particular events description is in contradiction to the EventsDescriptor parameter specification itself concerning the indication whether the parameter is optional or not and consequently regarding the provisioned default value.  The text below fixes this contradiction.
<b>Reference:</b>	AVD-3618

*[Begin Correction]*

## 8.2 Events

### 8.2.1 Pulse off

**Event Name:** Pulse Off

**EventID:** psoff (0x0001)

**Description:** The MG detects and reports a timed transition from on-hook to off-hook (leading edge) to on-hook (trailing edge). The parameter "pulse timeout" can be optionally included to specify a timeout for the receipt of the pulse. The default value for the timer is provisioned in the MG. The minimum and maximum duration of the pulse are defined by the Minimum Pulse Detection Duration and Maximum Pulse Detection Duration properties respectively.

**EventsDescriptor Parameters:**

**Pulse Timeout**

**Parameter Name:** Pulse Timeout

**ParameterID:** psto (0x0001)

**Type:** Integer

**Optional:** ~~No~~Yes

**Possible values:** Any non-negative integral number of milliseconds

**Description:** Specifies the timer for the receipt of the pulse. A value of 0 indicates a timer should not be applied.

**Default:** ~~None~~Provisioned

**ObservedEventsDescriptor Parameters:** None

### 8.2.2 Pulse on

**Event Name:** Pulse On

**EventID:** pson (0x0002)

**Description:** The MG detects and reports a timed transition from off-hook to on-hook (leading edge) to off-hook (trailing edge). The parameter "pulse timeout" can be optionally included to specify a timeout for the receipt of the pulse. The default value for the timer is provisioned in the MG. The minimum and maximum duration of the pulse are defined by the Minimum Pulse Detection Duration and Maximum Pulse Detection Duration properties respectively.

#### EventsDescriptor Parameters:

##### Pulse Timeout

**Parameter Name:** Pulse Timeout

**ParameterID:** psto (0x0001)

**Description:** Specifies the timer for the receipt of the pulse. A value of 0 indicates a timer should not be applied.

**Type:** Integer

**Optional:** ~~No~~Yes

**Possible values:** Any non-negative integral number of milliseconds

**Default:** ~~None~~Provisioned

**ObservedEventsDescriptor Parameters:** None

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*[End Correction]*

## 17 Technical and Editorial Corrections to H.248.26 (01/2005)

### 17.1 Inconsistent default for Pulse Repetition Interval

<b>Description:</b>	<p>The Metering Pulse Burst signal defined in H.248.26 (01/2005) has two parameters: Burst Pulse Count &amp; Pulse Repetition Interval. The Burst Pulse Count parameter specifies the number of metering pulses to be applied as a burst on the line. The description of this parameter says that "The type, duration and pulse repetition interval for the metering pulses comprising the burst are provisioned in the MG".</p> <p>Considering that the pulse repetition interval is provisioned in the MG, it is unclear why this signal has a "Pulse Repetition Interval" parameter. Furthermore the default value for the "Pulse Repetition Interval" parameter is "1" rather than "provisioned".</p> <p>In order to solve the inconsistencies it proposed to alter the defaults to align with the text and "optionality". In 6.3.1.1.2 with "Optional: No" there is no default because a value must always be sent. 6.3.2.1.2 should say "Optional: Yes", "Default: Provisioned". This aligns with the original intent.</p>
<b>Reference:</b>	<p>Subject: [Megaco] Pulse Metering</p> <p>Date: Fri, 17 Jul 2009 10:33:48 +0200</p> <p>From: &lt;bruno.chatras@orange-ftgroup.com&gt;</p> <p>To: &lt;megaco@ietf.org&gt;</p>

#### 17.1.1.1.1 6.3.1.1.2 Pulse Repetition Interval

Parameter name: Pulse Repetition Interval

Parameter ID: pri (0x0002)

Description: This parameter specifies the interval over which the pulses specified in the pulse count should be issued, or, if the pulse count is 0 or not present, the interval between pulses, in milliseconds. For a specified non-zero pulse count, it represents the time over which the pulses should occur. It is up to the MG to perform the appropriate calculations to determine the pulse interval. For a zero or unspecified pulse count, it represents the time that should elapse between the leading edge of a pulse and the leading edge of the succeeding pulse. There is no default value for this parameter, and the MGC should always provide a positive non-zero value.

Type: Integer

Optional: No

Possible values: 1 or more milliseconds

Default: None

#### 17.1.1.1.2 ...

#### 17.1.1.1.3 6.3.2.1.1 Burst Pulse Count

Parameter name: Burst Pulse Count

Parameter ID: bpc (0x0001)

Description: This parameter specifies the number of metering pulses to be applied as a burst on the line. The type and, duration and pulse repetition interval for the metering pulses comprising the burst are provisioned in the MG. The pulse repetition interval is provisioned in the MG but may be overridden through use of the pri parameter.

Type: Integer

Optional: Yes

Possible values: 1 or more pulses

Default: 1

#### 17.1.1.1.4 6.3.2.1.2 Pulse Repetition Interval

Parameter name: Pulse Repetition Interval

Parameter ID: pri (0x0002)

Description: This parameter allows the MGC to override the provisioned interval from the leading edge of a metering pulse to the leading edge of the next metering pulse in this burst.

Type: Integer

Optional: Yes



Possible values: 1 or more milliseconds

Default: 4Provisioned.

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[End Correction]

## 18 Technical and Editorial Corrections to H.248.29 (01/2005)

### 18.1 Unsuccessful Digit Map match reporting

<b>Description:</b>	<p>See item 6.21.</p> <p>Also related to this issue but not strictly related to DTMF digit detection is the Generic CAS Compelled Register Signalling Package (<i>icascgen</i>) in H.248.29. The Generic Digit Information Event utilizes a Detection Event Map. The MGC may encounter overload issues with CAS signalling and as such the problem of double event notification may occur. Therefore it is proposed to modify H.248.29 to incorporate a new Event Parameter in the Generic Digit Information Event (Clause B.1.2.2.1/H.248.29).</p> <p>Note: An Implementors' Guides typically only provides clarification to existing behaviour. The item is considered to introduce new functionality. However given the nature of the issue it is raised and recorded here whilst an Amendment is being prepared.</p>
<b>Reference:</b>	COM16-C.445 (2005-2008)

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[Begin Correction]

#### B.1.2.2.1 EventsDescriptor parameters

##### B.1.2.2.1.1 Detection Events Map

Parameter Name: Detection Events Map

ParameterID: dem (0x0001)

Description: Detection Events Map parameter is activated for collection of register signals. When a Detection Events Map is missing, the received events are reported event by event.

Type: String

Optional: Yes

Possible values: A detected sequence of the characters '0' through '9' and 'B-F', 'x', '.' and the interdigit threshold timers 'T', 'S' and 'L'. In addition, it can also contain '<' and '>' indicating the used backward acknowledge signal. ABNF Syntax is specified in B.2.2.

NOTE 1 – The SSR2 Events Map is a specific Detection Events Map for Signalling System R2 codepoints.

NOTE 2 – "x" represents any character in the range of "0" through "9".

Default: None

#### **B.1.2.2.1.2 Unsuccessful Match Reporting**

Parameter Name:    Unsuccessful Match Reporting

ParameterID:        umr (0x0002)

Description:        The MGC may use this parameter to control whether the Generic Digit Information Event is generated in the event of an unsuccessful events map match (i.e. match with method “Partial match, unmatched event” or “Partial Match, timer expired”).

Type:                 Boolean

Optional:            Yes

Possible values:

On                    Generate a Generic Digit Information Event on unsuccessful match.

Off                   Do not generate a Generic Digit Information Event on an unsuccessful match.

Default:             On

...

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*[End Correction]*

### **19      Technical and Editorial Corrections to H.248.30 (2007)**

#### **19.1    Correction of title of clause 8**

<b>Description:</b>	The title of clause 8 is incorrect due to a cut/paste error.
<b>Reference:</b>	AVD-2972a

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*[Begin Correction]*

### **8        Received RTCP XR Burst Metrics Package**

...

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*[End Correction]*

### **20      Technical and Editorial Corrections to H.248.32 (2005)**

#### **20.1    Correction of Resource Extension names**

<b>Description:</b>	Currently H.248.32 defines that the Extension Resource being 1 to 20, with the text names ext1, ext2 .. ext20 and the binary ids 0x0021 to 0x0040. However this leads to a potential mismatch in values as it is not clear whether the text name is decimal or hexadecimal.  The text name is decimal so the values should be updated to reflect this.
---------------------	--

<b>Reference:</b>	Subject: [Megaco] Number of Extension Resources in Detailed Congestion Reporting Package Date: 07.03.2007 12:56 From: "Arvind Charanyan"<arvind.charanyan@ccpu.com> To: <megaco@ietf.org>
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*[Begin Correction]*

### 5.1.1 Resources Definitions

...

**Table 1/H.248.32 – Resource Names**

Resource Name:	PropertyID/EnumerationValue	
	Text Identifier	Binary Identifier
General Resources	gen	0x0001
DSP Resources	dsp	0x0002
IP Resources	ip	0x0003
ATM Resources	atm	0x0004
Reserved		0x0005 – 0x0020
Extension Resource 1	ext1	0x0021
Extension Resource 2	ext2	0x0022
	...	
Extension Resource <del>2032</del>	<del>ext20</del> ext32	0x0040

...

*[End Correction]*

## 21 Technical and Editorial Corrections to H.248.34 (2005)

### 21.1 Correction of inconsistent parameter value naming

<b>Description:</b>	The use of the parameter value name “reversePolarity” is inconsistent between Table 1 and Table 6. Table 6 uses the name “reversedPolarity”. As Table 1 first defines the value name Table 6 should be updated to align.
<b>Reference:</b>	COM16-C.277 (2005-2008)

**Table 6/H.248.34 – Detailed mapping of V5 PSTN  
Protocol Information Elements**

...

Steady Signal	In the MGC to MG direction, the V5 information element is mapped to the signal "steady signal" defined in this package with the V5 parameters mapped as follows: <ul style="list-style-type: none"><li>Steady Signal type – Directly mapped to the parameter "Signal" as specified below.</li></ul>			
	<b>V5</b>		<b>H.248</b>	
	<b>Steady signal</b>	<b>Value</b>	<b>Text encoding</b>	<b>Binary encoding</b>
	Normal polarity	0	"normalPolarity"	(0x0000)
	Reversed polarity	1	"reversedPolarity"	(0x0001)
	Battery on c-wire	2	"batteryOnC-wire"	(0x0002)

## 22 Technical and Editorial Corrections to H.248.36 (2005)

### 22.1 Clarification of cleanup of hanging terminations

<b>Description:</b>	Some wording about the cleanup of hanging terminations in H.248.36 is confusing in regard to which entity has responsibility for cleaning up these terminations. This needs to be clarified.
<b>Reference:</b>	Discussions at March 2007 Shenzhen meeting related to AVD-3089

#### 5.6.1 Detection of hanging terminations

...

In the case the MGC is unable to detect these terminations, the MG needs to be able to detect and clean up terminations that are hanging **by sending Notify Commands to the MGC identifying the hanging terminations**. The MG can detect hanging terminations by error responses to commands. Typically, during a stable speech call state, very few H.248.1 messages are generated by the MG, thus a mechanism is needed to trigger a periodic message from the MG. The MG may issue a periodic Notify command on the concerned termination and check the response to determine if the MGC has a record of the termination or not. The time period for this Notify may be parameter driven.

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[End Correction]

## 23 Technical and Editorial Corrections to H.248.37 (06/2008)

### 23.1 Incorrect Binary PackageID

<b>Description:</b>	In the Recommendation text the “lstat” package was assigned a binary package identity of 0x00e3. However IANA assigned this value to another package. The binary package identity should be aligned with the IANA allocated value of 0x00e4.
<b>Reference:</b>	This contribution.

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[Begin Correction]

#### 8 Latch statistics package

**Package Name:** Latch statistics package

**PackageID:** lstat, (~~0x00E3~~[0x00E4](#))

**Description:** This package complements the IP NAT Traversal Package to enable the recording of discarded packets due to implicit filtering by the latching function.

**Version:** 1

**Extends:** *ipnapt* version 1

...

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[End Correction]

## Annex: Defect Report Form for H.248 Sub-series

<b>DATE:</b>	
<b>CONTACT INFORMATION</b>  <b>NAME:</b> <b>COMPANY:</b> <b>ADDRESS:</b>  <b>TEL:</b> <b>FAX:</b> <b>EMAIL:</b>	
<b>AFFECTED RECOMMENDATIONS:</b>	
<b>DESCRIPTION OF PROBLEM:</b>	
<b>SUGGESTIONS FOR RESOLUTION:</b>	

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