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**Series H**

**Supplement 2**

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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

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**H.248.x sub-series packages guide – Release 3**

ITU-T H-series Recommendations – Supplement 2

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## Supplement 2 to ITU-T H-series Recommendations

### H.248.x sub-series packages guide – Release 3

#### Summary

This Supplement summarizes packages that have been standardized in the time frame from June 2000 to October 2002. This guide identifies packages that meet H.248.x sub-series requirements for package definition and are for general use by the wider standards community.

This update of the Supplement includes the new packages that have been added to the H.248.x sub-series Media Gateway Protocol, as of this meeting of SG 16.

#### Source

Supplement 2 to ITU-T H-series Recommendations was prepared by ITU-T Study Group 16 (2001-2004) and approved under ITU-T Recommendation A.13 (10/2000) procedure on 25 October 2002.

#### History

	<b>Version</b>	<b>Approval</b>
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2.0	H Suppl.2	2002-02-15
2.1	H Suppl.2	2002-02-25

## FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

## NOTE

In this publication, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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## Supplement 2 to ITU-T H-series Recommendations

### H.248.x sub-series packages guide – Release 3

#### 1 Scope

This Supplement summarizes packages that have been standardized in the time frame from June 2000 to November 2002. It identifies packages that meet H.248.x sub-series requirements for package definition and are for general use by the wider standards community.

H.248.x sub-series Packages Guide – Release 3 provides for the:

- Identification of packages that are considered technically consistent with H.248.x sub-series principles and packages definition rules in clause 12/H.248.1.
- Identification of packages which are currently being worked upon.
- Identification of packages which have worked upon over a certain period of time.
- Identification of packages with overlapping functionality.

ITU-T Study Group 16 invites packages authors/editors to share their current and future work on packages in the form of contribution, liaison or communication to ITU-T Study Group 16. This will assist ITU-T Study Group 16 in producing future releases of this Supplement. ITU-T Study Group 16 will then endeavour to provide constructive comments to assist you in your packages work. If ITU-T SG 16 determines that your packages are consistent with H.248 and particularly, clause 12/H.248.1, it will include these in the "Externally defined Packages that meet requirements" clause of the H.248.x sub-series Packages Implementors' Guide.

#### 2 References

##### 2.1 Normative references

- ITU-T Recommendation Q.1950 (2002), *Bearer independent call bearer control protocol*.

##### 2.2 Informative references

See clauses below for individual references.

#### 3 Definitions

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#### 4 Abbreviations

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#### 5 ITU-T Study Group 16 packages

Package name and description	Identity		Reference	Status
	Text	Binary		
<p>Annex E/H.248.1</p> <p><b>Basic packages</b></p> <p>The packages contained in this annex are:</p> <ul style="list-style-type: none"> <li>• Generic package</li> <li>• Base Root package</li> <li>• Tone Generator package</li> <li>• Tone Detection package</li> <li>• Basic DTMF Generator package</li> <li>• DTMF Detection package</li> <li>• Call Progress Tones Generator Package</li> <li>• Call Progress Tones Detection Package</li> <li>• Analog Line Supervision Package</li> <li>• Basic Continuity Package</li> <li>• Network Package</li> <li>• RTP Package</li> <li>• TDM Circuit Package</li> </ul>	<p>g</p> <p>root</p> <p>tonegen</p> <p>tonedet</p> <p>dg</p> <p>dd</p> <p>cg</p> <p>cd</p> <p>al</p> <p>ct</p> <p>nt</p> <p>rtp</p> <p>tdmc</p>	<p>0x0001</p> <p>0x0002</p> <p>0x0003</p> <p>0x0004</p> <p>0x0005</p> <p>0x0006</p> <p>0x0007</p> <p>0x0008</p> <p>0x0009</p> <p>0x000a</p> <p>0x000b</p> <p>0x000c</p> <p>0x000d</p>	Annex E/H.248.1	Done
<p>H.248.2 <b>Facsimili, text conversation and call discrimination packages</b></p> <p>H.248.2 describes packages for fax, text telephone, call type discrimination and data call detection.</p> <p>The packages contained in this annex are:</p> <p><i>The Call Type Discrimination package</i> defines control and monitoring of a PSTN line for the signalling protocols used in the beginning of a session of data transmission for fax, text telephony or data.</p> <p><i>The Text Telephone package</i> defines control of a PSTN text telephone session in any of the modes supported by the automoding text telephone ITU-T Rec. V.18.</p> <p><i>The Fax package</i> defines control of a PSTN fax transmission.</p> <p>The Fax/Textphone/Modem Tones Detection package defines control over a termination for detection of any signals from a fax, text telephone or data modem during a connection in voice mode.</p>	<p>ftmd</p> <p>txc</p> <p>txp</p> <p>ctyp</p> <p>fax</p> <p>ipfax</p>	<p>0x000e</p> <p>0x000f</p> <p>0x0010</p> <p>0x0011</p> <p>0x0012</p> <p>0x0013</p>	H.248.2	Done

Package name and description	Identity		Reference	Status
	Text	Binary		
<p><i>The Text Conversation package</i> defines control over a real time interactive text conversation session using a universal presentation format and transferred with a transport method from a multimedia protocol in any network environment.</p> <p><i>The IP Fax package</i> defines control over facsimile transmission in a packet network.</p>				
<p><b>H.248.3 IP phone packages</b></p>	<p>dis</p> <p>key</p> <p>kp</p> <p>labelkey</p> <p>kf</p> <p>ind</p> <p>ks</p> <p>anci</p>	<p>0x0014</p> <p>0x0015</p> <p>0x0016</p> <p>0x0017</p> <p>0x0018</p> <p>0x0019</p> <p>0x001a</p> <p>0x001b</p>	H.248.3	Done
<p><b>H.248.6 Dynamic tone definition package</b></p> <p>This package defines a mechanism to redefine existing tones and create new tones for playback. The existing tones are the ones described in supported packages that extend the tonegen generic package.</p>	dtd	0x001c	H.248.6	Done
<p><b>H.248.7 Generic announcement package</b></p> <p>This package supports announcement functionality at a Media Gateway. This announcement could be realized by the Media Gateway as different sorts of messaging. For example: it could be an audio announcement, a text message or a composition of text messages.</p>	an	0x001d	H.248.7	Done

Package name and description	Identity		Reference	Status
	Text	Binary		
<p><b>H.248.9 Advanced announcement server packages</b></p> <p>The Basic Audio package provides support for the standard IVR operations of PlayAnnouncement, PlayCollect and PlayRecord. It supports direct references to simple audio as well as indirect references to simple and complex audio. It provides audio variables, control of audio interruptibility, digit buffer control, special key sequences, and support for reprompting during data collection. The Advanced Audio Package extends the Base Package by providing an arbitrary number of user-defined qualifiers to be used in resolving complex audio structures. For example, the user could define qualifiers for any or all of the following: language, accent, audio file format, gender, speaker, or customer.</p>	<p>aasb</p> <p>aasdc</p> <p>aasrec</p> <p>aassm</p> <p>bavvsyx</p> <p>vvsyx</p> <p>setsyx</p> <p>phrsyx</p>	<p>0x0033</p> <p>0x0034</p> <p>0x0035</p> <p>0x0036</p> <p>0x0047</p> <p>0x0048</p> <p>0x0049</p> <p>0x004a</p>	H.248.9	Done
<p><b>H.248.10 Congestion package</b></p> <p>The package makes it possible for the MG to control its load.</p>	chp	0x0029	H.248.10	Done
<p><b>H.248.11 Media gateway overload control package.</b></p> <p>This is a more indepth proposal than H.248.10</p>	ocp	0x0051	H.248.11	Done
<p><b>H.248.12 H.248 packages for H.323 and Annex C/H.324 interworking</b></p> <p>This document gathers together packages for H.245, H.245 parameters specific to H-series audiovisual terminal and Annex C/H.324 for use with the H.248 gateway control protocol. The packages in this annex are in conformance with H.248/Chapter 12 package definition guidelines.</p>	<p>h245</p> <p>h323bc</p> <p>h324</p> <p>h245com</p> <p>h245ind</p>	<p>0x002a</p> <p>0x002b</p> <p>0x002c</p> <p>0x002d</p> <p>0x002e</p>	H.248.12	Done
<p><b>Annex A/H.248.12 Extended H.324-, H.245 command- and H.245 indication packages</b></p> <p>This annex introduces package extensions that allow the MGC to control the interworking between H.324 and H.323.</p>	<p>H324ext</p> <p>H245comext</p> <p>h245indext</p>	<p>0x0063</p> <p>0x0064</p> <p>0x0065</p>	Annex A/H.248.12	Done
<p><b>H.248.13 Quality alert ceasing package</b></p> <p>This package enables the MG to indicate when a line has returned to normal quality.</p>	qac	0x0037	H.248.13	Done

Package name and description	Identity		Reference	Status
	Text	Binary		
H.248.14 <b>Inactivity alert package</b> This is used by MG to poll whether or not the MGC is still alive.	it	0x0045	H.248.14	Done
H.248.15 <b>SDP H.248 package attribute</b> This annex describes SDP attributes to allow the text local and remote descriptor to contain properties.	NA	NA	H.248.15	Done
H.248.16 <b>Extended DTMF detection package</b>	xdd edd	0x0052 0x0066	H.248.16	Done
H.248.17 <b>Line test packages</b> This annex contains a number of packages that enables line tests to be performed. <ul style="list-style-type: none"> <li>• Quiet Termination Test Component</li> <li>• Loopback Line Test Response</li> <li>• ITU-T 404 Hz Line Test Package</li> <li>• ITU-T 816 Hz Line Test Package</li> <li>• ITU-T 1020 Hz Line Test Package</li> <li>• ITU-T 2100 Hz Disable Tone Line Test Package</li> <li>• ITU-T 2100 Hz Disable Echo Canceller Tone Line Test Package</li> <li>• ITU-T 2804 Hz Tone Line Test Package</li> <li>• ITU-T Noise Test Tone Line Test Package</li> <li>• ITU-T Digital Pseudo Random Test Tone Line Test Package</li> <li>• ITU-T ATME No. 2 Test Line Response Package</li> <li>• ANSI 1004 Hz Test Tone Line Test Package</li> <li>• ANSI Test Responder Line Test Package</li> <li>• ANSI 2225 Hz Test Progress Tone Line Test Package</li> <li>• ANSI Digital Test Signal Line Test Package</li> <li>• ANSI Inverting Loopback Line Test Response</li> </ul>	qflt lltr itult404 itult816 itult1020 itultdist itultdisecd itult2804 itultntt itultdprt itultatme2 ansilt1004 ansiltres ansilt2225 ansiltdts ansiinvltr	0x0053 0x0054 0x0055 0x0056 0x0057 0x0058 0x0059 0x005a 0x005b 0x005c 0x005d 0x005e 0x005f 0x0060 0x0061 0x0062	H.248.17	Done
H.248.18 <b>Profile handling package</b> This package enables the MGC to determine what packages are on the MG.	Prp	0x0050	H.248.18	Done

Package name and description	Identity		Reference	Status
	Text	Binary		
<b>H.248.19 Media gateway control unit package</b> This Recommendation describes the decomposition of an Media Control Unit, requirements and packages for media resource functions.	?	?	H.248.19	In progress
<b>H.248.20 The use of local and remote descriptors with H.221/H.223 multiplexing</b> This Recommendation describes how the local and remote descriptors are filled in for H.221 and H.223 multiplexing terminations.	NA	NA	H.248.20	Done
<b>H.248.semper Semi-permanent connection handling package</b> This Recommendation describes a package to enable the Media Gateway Controller to indicate to the Media Gateway that terminations and the connection between the "semi-permanent" marked terminations shall be treated as semi-permanent.	?	?	?	In progress

## 6 Externally defined packages that meet requirements

The packages identified in this clause are consistent with regards to the package definition rules contained clause 12/H.248.1.

### 6.1 ITU-T Study Group 11

Package name and description	Identity		Reference	Status
	Text	Binary		
<b>Bearer characteristics package</b> This package contains the functionality required to identify which bearer services are to be supported by a MG.	bcp	0x001e	A.3/Q.1950	Done
<b>Bearer network connection cut through package</b> This package provides the functionality to be able to determine the cut through capabilities of the bearer network.	bnct	0x001f	A.4/Q.1950	Done
<b>Reuse idle package</b> This package provides the ability to determine the reuse of idle bearer functionality network.	ri	0x0020	A.5/Q.1950	Done
<b>Generic bearer connection package</b> This package provides the functionality to be able to establish/modify/release a bearer connection.	gb	0x0021	A.6/Q.1950	Done

Package name and description	Identity		Reference	Status
	Text	Binary		
<p><b>Bearer control tunnelling package</b></p> <p>This package describes the functionality to be able to support the transport of "Bearer Information Transport" information between an MGC and MG.</p>	bt	0x0022	A.7/Q.1950	Done
<p><b>Basic call progress tones generator with directionality</b></p> <p>This package defines the basic call progress tones as signals and extends the allowed values of the tl parameter of playtone in tonegen. In addition, this package extends the Tone Generator Package with the ability to specify in which direction the tone is played.</p>	bcg	0x0023	A.8/Q.1950	Done
<p><b>Expanded call progress tones generator package</b></p> <p>This package defines the expanded call progress tones as signals and extends the allowed values of the tl parameter of playtone in tonegen. In addition, this package extends the Tone Generator Package with the ability to specify in which direction the tone is played.</p>	Xcgc	0x0024	A.9/Q.1950	Done
<p><b>Basic services tones generation package</b></p> <p>This package defines signals for use by telephony services and allows for specification of directionality.</p>	srvtn	0x0025	A.10/Q.1950	Done
<p><b>Expanded services tones generation package</b></p> <p>This package defines additional signals for use by telephony services and allows for specification of directionality.</p>	xsrvtn	0x0026	A.11/Q.1950	Done
<p><b>Intrusion tones generation package</b></p> <p>This package defines additional signals for use by operator-based telephony services and allows for specification of directionality.</p>	int	0x0027	A.12/Q.1950	Done
<p><b>Business tones generation package</b></p> <p>This package defines for use by business telephony services and allows for specification of directionality.</p>	biztn	0x0028	A.13/Q.1950	Done
<p><b>Bearer characteristics package v2</b></p> <p>Version 2 introduces a new value for TDM bearer characteristics</p>	bcp (Version 2)	0x001e (Version 2)	Amd.1/Q.1950	In progress

## 6.2 3GPP CN4

Package name and description	Identity		Reference	Status
	Text	Binary		
<b>3GUP (user plane) package</b> This package identifies that the User Plane package is used for the termination. It also contains some parameters for the User Plane functions in the MGW.	threegup	0x002f	3GPP TS 29.232	Done
<b>Circuit switched data package</b> This package contains the information needed to be able to support GSM and UMTS Circuit Switched Data from the media gateway.	threegcsd	0x0030	3GPP TS 29.232	Done
<b>TFO package</b> This package defines events and properties for Tandem Free Operation (TFO) control. TFO uses inband signalling and procedures for Transcoders to enable compressed speech to be maintained between a tandem pair of transcoders. This package allows an MGW which has inserted a transcoder to support TFO.	threegtfo	0x0031	3GPP TS 29.232	Done
<b>3G expanded call progress tones generator package</b> This package extends "Expanded Call Progress Tones Generator Package" as defined in ITU-T Rec. Q.1950. The package adds a new toneId for CAMEL prepaid warning tone.	threegxcg	0x0032	3GPP TS 29.232	Done
<b>3G modification of link characteristics package</b>	threegmlc	0x0046	3GPP TS 29.232	Done

## 7 Packages undergoing development

The packages identified in this clause are currently under development and/or have not been reviewed by SG 16. The packages identified here may have inconsistencies with regards to the package definition rules contained in clause 12/H.248.1. The packages below may also overlap in functionality.

### 7.1 AMTF (ATM forum)

Package name and description	Identity		Reference	Status
	Text	Binary		
AMTF are no longer defining their own packages. Reference is made to IETF-developed packages. For more information see: BT-D-VMOA-LESH248-01.02; LES Using AAL2 – H.248 Signalling Addendum October 2001.				

## 7.2 ETSI tiphon

Package name and description	Identity		Reference	Status
	Text	Binary		
<b>Aggregate bearer control package</b> This package defines aggregate bearer load control information flows between a MG and MGC in order to provide admission control functionality based on aggregate bandwidth usage measurements and transport network QoS performance.	aggr	?	DTS 03022 v0.0.3	In progress
<b>Middle box package</b> This package defines a property to enable the MGC to act as a MIDCOM Agent and control a "gateway" acting as a Middlebox	emp	?	DTS3027 V0.0.3 (2002-01)	In progress

## 7.3 IETF Megaco

NOTE – The packages are official work items adopted by the IETF Megaco work group.

Package name and description	Identity		Reference	Status
	Text	Binary		
<b>Megaco/H.248.x sub-series NAS packages</b> <ul style="list-style-type: none"> <li>• Basic NAS Package</li> <li>• NAS incoming package</li> <li>• NAS outgoing package</li> <li>• NAS control package</li> <li>• NAS root package</li> </ul>	nas	0x004b	draft-ietf-megaco-naspkg-04.txt	In progress
	nasin	0x004c		
	nasout	0x004d		
	nasctl	0x004e		
	nasroot	0x004f		
<b>Megaco R2 packages and call flows</b>	NA	NA	Draft-ietf-megaco-r2pacakge-03.txt	Expired

## 7.4 IETF individual submissions

NOTE – This clause identifies packages that individuals have submitted to the IETF. These have not been taken as official work items of the IETF Megaco work group.

Package name and description	Identity		Reference	Status
	Text	Binary		
<b>MF tone generation and detection packages</b> Multi-Frequency Tone Generation Package Multi-Frequency Tone Detection Package	mfg	0x003d	Draft-bothwell-megaco-mftonepks-03.txt	In progress expiry 09/02
	mfd	0x003e		
<b>ISDN package for Megaco</b>	NA	NA	Draft-bouwen-megaco-isdn-pack-00.txt	Expired

Package name and description	Identity		Reference	Status
	Text	Binary		
<b>Enhanced alerting packages for Megaco/H.248.x sub-series</b> Enhanced Alert Package Analog Display Signalling	alert andisp	0x003b 0x003c	Draft-boyle-megaco-alerting-03.txt	Expiry 09/02
<b>Supplemental tones packages for Megaco/H.248.x sub-series</b> Conferencing Tones Generation Package Diagnostic Tones Generation Package Carrier Tones Generation Package	confn test carr	0x0038 0x0039 0x003a	Draft-boyle-megaco-tonepkgs-07.txt	IESG Last Call
<b>MGC cookie package for Megaco/H.248.x sub-series</b>	mgcckie	0x00??	Draft-cutler-megaco-mgc-cookie-02.txt	Expired
<b>Megaco/H.248.x sub-series basic CAS packages</b> Basic CAS (Channel Associated Signalling) package RBS (Robbed Bit Signalling) Package Operator Service and Emergency Services Package Operator Services Extension Package	bcas rbs oses osex	0x003f 0x0040 0x0041 0x0042	Draft-manyfolks-megaco-caspackage-02.txt	Expiry 09/02
<b>Enhanced line services packages</b> Extended Analog Line Supervision Package Automatic Metering Package	Xal amet	0x0043 0x0044	Draft-taylor-megaco-enhlpkgs-01.txt	Expires 09/02
<b>Name pattern package for Megaco</b>	nampat	0x00??	Draft-rosen-megaco-namepatterns-01.txt	Expires 01/03
<b>Megaco/H.248.x sub-series QoS packages</b> This document is work in progress and defines the basic QoS Package that addresses the different means of supporting Quality of service (QoS) on IP networks. This memo also defines the RSVP package (that falls into the Integrated services model) and the Differentiated services package in association with the Megaco/H.248 Protocol	Bqos Rsvp diffserv	0x00?? 0x00?? 0x00??	Draft-madhubabu-megaco-qospackage-00.tx	Expired
<b>Megaco/H.248 FXO packages</b> This document describes the events and signals helpful for signalling between Central Office (CO) and Foreign Exchange Office (FXO) at Customer Premises Equipment (CPE).	??	??	draft-sridhar-megaco-fxopackage-01.txt	Incomplete Expires 10/02

Package name and description	Identity		Reference	Status
	Text	Binary		
<u>AAL2 package</u>	??	??	draft-barr-megaco-aal2bearer-00.txt	Incomplete Expires 11/02
<u>Megaco ATM package</u>	NA	NA	Draft-rosen-megaco-atm-package-01.txt	Expired

## 7.5 ITU-T Study Group 11

Package name and description	Identity		Reference	Status
	Text	Binary		
<b>Control of SPNE in a media gateway</b> This package defines properties and events for SPNE functions controlled by or integrated into a media gateway. Note that echo cancellers associated with media gateways are assumed to be compliant with ITU-T Rec. G.168 as indicated in ITU-T Rec. G.177.	SPNE	0x????	Q.SPNE	In progress

## 8 H.248.x sub-series MIBs

MIB Name	Reference
H.248.x sub-series MIB	<draft-ietf-megaco-mib-03.txt>
H.248.x sub-series Ringing MIB	<draft-pitchandi-megaco-ringing-mib-00.txt>
H.248.x sub-series Tones MIB	<draft-doyle-megaco-tonesmib-00>





## SERIES OF ITU-T RECOMMENDATIONS

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Series B	Means of expression: definitions, symbols, classification
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