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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

H.248.x sub-series packages guide – Release 11

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 11

Summary

This Supplement summarizes packages that have been standardized in the time-frame from June 2000 to May 2008. 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 11 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 of Recommendation ITU-T H.248.1;
- identification of packages that are currently being worked upon;
- identification of packages that have been worked upon over a certain period of time;
- identification of packages with overlapping functionality.

Implementers are encouraged to review the packages in this Supplement before proposing new packages.

Release 11 contains:

- New packages defined in Recommendations ITU-T H.248.37 (including Rev.1), H.248.41 (Amd.1), H.248.63, H.248.64, H.248.65, H.248.66, H.248.67.
- Revised packages defined in Recommendation ITU-T H.248.42 (Amd.1).
- References to new work items: H.248.pipa, H.248.tdr.

Source

Supplement 2 to ITU-T H-series Recommendations was agreed on 2 May 2008 by ITU-T Study Group 16 (2005-2008).

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). 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.

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Supplement 2 to ITU-T H-series Recommendations

H.248.x sub-series packages guide – Release 11

1 Scope

This Supplement summarizes packages that have been standardized in the time-frame from June 2000 to May 2008. 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 11 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 that are currently being worked upon;
- identification of packages that have been 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 guide.

2 Reference

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

See clauses below for individual references.

3 Definitions

None.

4 Abbreviations

None.

5 ITU-T Study Group 16 packages

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
Annex E/H.248.1 **Basic packages** The packages contained in this annex are:				Annex E/ H.248.1 v3 (2005)	Done
• generic package;	g	0x0001	2		
• base root package;	root	0x0002	2		
• tone generator package;	tonegen	0x0003	2		
• tone detection package;	tonedet	0x0004	1		
• basic DTMF generator package;	dg	0x0005	2		
• DTMF detection package;	dd	0x0006	1		
• call progress tones generator package;	cg	0x0007	2		
• call progress tones detection package;	cd	0x0008	1		
• analogue line supervision package;	al	0x0009	1		
• basic continuity package;	ct	0x000a	1		
• network package;	nt	0x000b	1		
• RTP package;	rtp	0x000c	1		
• TDM circuit package;	tdmc	0x000d	1		
• segmentation package;	seg	0x00a3	1		
• notification behaviour package.	nb	0x009a	1		
H.248.2 **Facsimile, text conversation and call discrimination packages** This Recommendation describes packages for fax, text telephone, call type discrimination, and data call detection. The packages contained in this Recommendation are:				H.248.2 (2005)	Version 1 done ftmd & ctyp version 2 done
The call type discrimination package 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.	ctyp	0x0011	3		

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
The text telephone package defines control of a PSTN text telephone session in any of the modes supported by the automoding text telephone ITU-T Rec. V.18.	txp	0x0010	1		
The fax package defines control of a PSTN fax transmission.	fax	0x0012	1		
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.	ftmd	0x000e	2		
The text conversation package 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.	txc	0x000f	1		
The IP fax package defines control over facsimile transmission in a packet network.	ipfax	0x0013	2		
H.248.3 **User interface elements and actions packages**	dis	0x0014	1	H.248.3 (2000) Cor.1 (2004)	Done
	key	0x0015	1		
	kp	0x0016	1		
	labelkey	0x0017	1		
	kf	0x0018	1		
	ind	0x0019	1		
	ks	0x001a	1		
	anci	0x001b	1		
H.248.6 **Dynamic tone definition package** 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.	dtd	0x001c	1	H.248.6 (2000)	Done

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
H.248.7 **Generic announcement package** 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.	an	0x001d	1	H.248.7 (2004)	Done
H.248.9 **Advanced media server packages** 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 interruptability, 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. The Jan. 2005 Revision includes: • new variable type "tone" for dynamic audio segment specification; • set extension of basic syntax: introduction of a new selector for text attributes; • variable type "Phrase": introduction of subtypes; • signal PlayCollect: enhanced functionality, new parameters.	aasb aasdc aasrec aassm bavvsyx vvsyx setsyx phrsyx asr ttssyx aastts mpp mrp	0x0033 0x0034 0x0035 0x0036 0x0047 0x0048 0x0049 0x004a 0x00a6 0x00a7 0x00a8 0x00a9 0x00b3	2 2 2 1 1 2 3 2 1 1 1 1 1	H.248.9 (2005) Amd.1 (2007)	Done

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
Amendment 1 includes: • enhancements to aasb and aasrec; • automatic speech recognition; • text to speech set syntax; • advanced audio server base package for TTS enhancement; • multimedia play package; • multimedia recording package.					
H.248.10 **Media gateway resource congestion handling package** This package makes it possible for the MG to control its load.	chp	0x0029	1	H.248.10 (2001)	Done
H.248.11 **Media gateway overload control package** This is a more in-depth proposal than H.248.10.	ocp	0x0051	1	H.248.11 (2002)	Done
H.248.12 **H.248.1 packages for H.323 and H.324 interworking** This Recommendation 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.248.1 gateway control protocol. The packages in this Recommendation are in conformance with clause 12/H.248.1 package definition guidelines.	h245 h323bc h324 h245com h245ind	0x002a 0x002b 0x002c 0x002d 0x002e	1 1 1 1 1	H.248.12 (2001)	Done
Annex A/H.248.12 **Extended H.324, H.245 command and H.245 indication packages** This annex introduces package extensions that allow the MGC to control the interworking between H.324 and H.323. Amendment 2 adds a new package to allow tunnelling of H.245 messages between a MGC and MG.	h324ext h245comext h245indext h245tp	0x0063 0x0064 0x0065 0x00b4	1 1 1 1	Amd.1/ H.248.12 (2002) Amd.2 (2007)	Done

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
H.248.13 **Quality alert ceasing package** This package enables the MG to indicate when a line has returned to normal quality.	qac	0x0037	1	H.248.13 (2002)	Done
H.248.14 **Inactivity timer package** This is used by MG to poll whether or not the MGC is still alive.	it	0x0045	1	H.248.14 (2002)	Done
H.248.15 **SDP H.248 package attribute** This Recommendation describes SDP attributes to allow the text local and remote descriptor to contain properties.	NA	NA	NA	H.248.15 (2002)	Done
H.248.16 **Enhanced digit collection packages and procedures**	xdd edd	0x0052 0x0066	1 1	H.248.16 (2002), plus Cor.1 (2004)	Done
H.248.17 **Line test packages** This Recommendation contains a number of packages that enables line tests to be performed.				H.248.17 (2002), plus Cor.1 (2004)	Done
• quiet termination test component;	qtlt	0x0053	1		
• loopback line test response;	lltr	0x0054	1		
• ITU-T 404 Hz line test package;	itult404	0x0055	1		
• ITU-T 816 Hz line test package;	itult816	0x0056	1		
• ITU-T 1020 Hz line test package;	itult1020	0x0057	1		
• ITU-T 2100 Hz disable tone line test package;	itultdist	0x0058	1		
• ITU-T 2100 Hz disable echo canceller tone line test package;	itultdisecd	0x0059	1		
• ITU-T 2804 Hz tone line test package;	itult2804	0x005a	1		
• ITU-T noise test tone line test package;	itultntt	0x005b	1		
• ITU-T digital pseudo random test tone line test package;	itultdprt	0x005c	1		
• ITU-T ATME No. 2 test line response package;	itultatme2	0x005d	1		

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
• ANSI 1004 Hz test tone line test package;	ansilt1004	0x005e	1		
• ANSI test responder line test package;	ansilttres	0x005f	1		
• ANSI 2225 Hz test progress tone line test package;	ansilt2225	0x0060	1		
• ANSI digital test signal line test package;	ansiltdts	0x0061	1		
• ANSI inverting loopback line test response.	ansiinvlltr	0x0062	1		
H.248.18 **Package for support of multiple profiles** This package enables the MGC to determine what packages are on the MG.	prp	0x0050	1	H.248.18 (2002)	Done
H.248.19 **Decomposed multipoint control unit, audio, video and data conferencing packages** This Recommendation describes the decomposition of a media control unit, requirements and packages for media resource functions.				H.248.19 (2004) plus Amd.1 (2006) plus Amd.2 (planned 2009)	Done Amendment 2 in progress
• floor control package;	fcp	0x006e	2		In progress
• indication of being viewed package;	indview	0x006f	1		
• volume control package;	vcp	0x0070	1		
• volume detection package;	vdp	0x0072	1		
• volume level mixing package;	vlmp	0x0073	1		
• mixing volume level control package;	mvlcp	0x0074	1		
• voice activated video switch package;	vavsp	0x0075	1		
• lecture video mode package;	lvmp	0x0076	1		
• contributing video source package;	cvsp	0x0077	1		
• video window package;	vwp	0x0078	1		
• tiled window package;	tilwin	0x0079	1		
• text overlay package;	top	0x00a1	1		
• border and background package.	bbp	0x00a2	1		

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
Amendment 2 includes: • stream support in fcp package; • floor status detection package; • floor control policy package.	 fsdp fcpoli	 0x00aa 0x00ab	 1 1		 In progress In progress
H.248.20 **The use of local and remote descriptors with H.221/H.223 multiplexing** This Recommendation describes how the local and remote descriptors are filled in for H.221 and H.223 multiplexing terminations.	NA	NA	NA	H.248.20 (2002)	Done
H.248.21 **Semi-permanent connection handling package** 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.	semper	0x006a	1	H.248.21 (2004)	Done
H.248.22 **Shared risk group package** H.248.22 describes a package to enable the media gateway controller (MGC) to indicate to the media gateway (MG) to use or to not use network resources associated with a shared risk group when setting up connections. A shared risk group is a group of resources that share the same risk of failure.	shrisk	0x006b	1	H.248.22 (2003)	Done
H.248.23 **Enhanced alerting packages** This Recommendation defines two packages that provide enhanced alerting and data transfer capabilities for H.248: • enhanced alerting package; • analogue display signalling package. Version 2 of the packages increases the ring cadences from 15 to 256.	 alert andisp	 0x003b 0x003c	 2 2	H.248.23 (2005)	Done

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
H.248.24 **MF tone generation and detection packages** This Recommendation defines two packages that provide multi-frequency tone generation and detection capabilities for H.248:				H.248.24 (2003)	Done
• multifrequency tone generation package;	mfg	0x003d	1		
• multifrequency tone detection package.	mfd	0x003e	1		
H.248.25 **Basic CAS packages** This Recommendation defines basic channel associated signalling (CAS) and R1 packages and supplemental CAS packages:				H.248.25 (2003) plus Cor.1 (2004) Superseded by Revision (01/2007)	Done
• basic CAS package;	bcas	0x003f	2		
• robbed bit signalling package;	rbs	0x0040	1		
• operator services and emergency services package;	oses	0x0041	1		
• operator package.	osext	0x0042	1		
Revision (01/2007) adds read-only CAS state properties.					
H.248.26 **Enhanced analogue lines packages** This Recommendation defines several packages that provide support for extended line supervision and metering analogue lines capabilities for H.248:				H.248.26 (2005)	Done
• extended analogue line supervision package;	xal	0x0043	1		
• automatic metering package;	amet	0x0044	2		
• a phased metering signal to the amet package;					
• metering pulse detection package.	metd	0x0096	1		

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
H.248.27 **Supplemental tones packages** This Recommendation defines three packages that provide additional tones capabilities for H.248:				H.248.27 (2003)	Done
• conferencing tones generation package;	conftn	0x0038	1		
• diagnostic tones package;	test	0x0039	1		
• carrier tones generation package.	carr	0x003a	1		
H.248.28 **International CAS packages** The international CAS package (icas) provides an extension to the basic CAS packages, defining additional line signals and events required for international signalling protocols.				H.248.28 (2004) Superseded by Revision (01/2007)	Done
• international CAS package;	icas	0x007b	2		
• CAS blocking package.	casblk	0x007c	1		
Revision (01/2007) adds read-only CAS state properties.					
H.248.29 **International CAS compelled register signalling packages**				H.248.29 (2005) plus Cor.1 (2007)	Done
• international CAS compelled package;	icasc	0x007d	1		
• international CAS compelled with overlap package;	icasco	0x007e	1		
• international CAS compelled with end-to-end package;	icasce	0x007f	1		
• generic CAS compelled register signalling package.	icascgen	0x0094	1		

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
H.248.30 **RTCP extended performance metrics packages** This Recommendation describes a set of extended performance metrics for voice over IP QoS reporting that provides more detailed insight into call quality and causes of degradation than basic RTCP statistics. The metrics described in this Recommendation are consistent with those described in the RTCP XR voice over IP metrics payload described in IETF RFC 3611.				H.248.30 (2004) Superseded by Revision (01/2007)	Done
• RTCP XR base package;	rtcpxr	0x0080	1		
• RTCP XR burst metrics package.	xrbm	0x0081	1		
Revision (01/2007) introduces the:					
• received RTCP XR package;	recrtcpxr	0x00b0	1		
• received RTCP XR burst metrics package.	recxrbm	0x00b1	1		
H.248.31 **Adaptive jitter buffer package** This Recommendation defines a package that extends the base network package; it allows the media gateway controller (MGC) to specify the nominal value and the minimum value of the adaptive jitter buffer on the media gateway (MG).				H.248.31 (2004)	Done
• adaptive jitter buffer package.	ajb	0x007a	1		
H.248.32 **Detailed congestion reporting package** This Recommendation defines a package that allows the MG to report its resource usage to the MGC; based on that report, the MGC may take corrective action to improve the efficiency of the whole system.				H.248.32 (2005)	Done
• detailed congestion control package.	dcr	0x0092	1		

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
H.248.33 **PCM frame spare bit package** This Recommendation describes a relay mechanism of PCM frame spare bits, by using H.248 events and signals. The scope is limited on spare bits S_i and S_{a4}-S_{a8} of the 2048 kbit/s basic frame structure (see ITU-T Rec. G.704). These bits are typically designated for national and international use, specific point-to-point applications, etc.	pcmsb	0x0085	1	H.248.33 (2005)	Done
H.248.34 **Stimulus analogue line package** The stimulus analogue line package defines H.248 signals and events that are exchanged between a MG and MGC for controlling analogue POTS lines. The signals and events defined in the package are stimulus in nature and enable the full set of POTS services that are delivered via a V5 LE and AN to be ubiquitously provided in a NGN MG and MGC architecture.	stimal	0x0093	1	H.248.34 (2005) NOTE – Also contained in ES/TISPAN-03009-NGN-R1.	Done
H.248.35 **Coin-operated phone control package** This Recommendation defines a package that provides control of coin phones for H.248.	coin	0x0095	1	H.248.35 (2005)	Done
H.248.36 **Hanging termination detection package** This Recommendation describes a hanging termination detection package which is used to determine potential state mismatch in the record of context and termination identities between the media gateway controller and the media gateway. It also offers guidance on the action to take once a potential mismatch is detected.	hangterm	0x0098	1	H.248.36 (2005)	Done

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
H.248.37 **IP NAPT traversal package** This Recommendation allows a media gateway controller to control internet protocol (IP) network address and port translation (NAPT) traversal. The use of IP NAPT traversal is especially useful in session border controllers (SBC) where media traversal is required. • IP NAT traversal package; Revision 1 introduces the: • address reporting package, • statistics for discarded packets due to latching package.	ipnapt adr lstat	0x0099 0x00ac 0x00e3	1 1 1	H.248.37 (2005) Revised (2008)	Done
H.248.38 **Base context package** This Recommendation defines a package that contains properties that affect a context as a whole.	bc	0x009b	1	H.248.38 (2006)	Done
H.248.39 **H.248 SDP parameter identification and wildcarding** This Recommendation provides guidance on the use of SDP in H.248.	NA	NA	NA	H.248.39 (2006)	Done
H.248.40 **Application data inactivity detection package** This Recommendation defines a package that enables the MGC/MG to detect when the flow of IP application data has stopped.	adid	0x009c	1	H.248.40 (2007)	Done

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
H.248.41 **IP domain connection package** This Recommendation defines a package that contains an IP realm identifier used to indicate which packet network the media represented by the termination belongs to. Amendment 1 introduces mechanisms that allow the MGC to discover the IP realms that are available at the MGW at a certain time. It also introduces a length limitation in the IP realm property. • IP realm availability package.	ipdc iprap	0x009d 0x00e0	1 1	H.248.41 (2006) Amendment 1 (2008)	Done
H.248.42 **DCME interworking package** This Recommendation defines a package used for interfacing digital circuit multiplication equipment (DCME). Amendment 1 adds new parameters for events, to allow the MGC to resynchronize itself in the event it loses track of this state.	dcme	0x009e	2	H.248.42 (2006) Amendment 1 (2009)	Done/ Amendment 1 in progress
H.248.43 **Gate management packages** This Recommendation defines gate management and gate control packages define a number of properties to support gate management procedures at the boundary between two IP transport domains. The packages in this Recommendation allow an MG to be configured to filter packets based on rules for different criteria such as source address/port, destination address/port, incoming protocol and/or outgoing protocol.				H.248.43 (ex. H.248.gmgc) (2008)	Done

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
The packages contained within the Recommendation are: • source address/port filtering package; • outgoing destination address/port filtering package; • incoming protocol filtering package; • outgoing protocol filtering package; • incoming filtering behaviour package; • outgoing filtering behaviour package.	 gm dapf ipf opf ifb ofb	 0x008c 0x00b6 0x00b7 0x00b8 0x00b9 0x00ba	 2 1 1 1 1 1		
H.248.44 **Multi-level precedence and pre-emption package** This Recommendation defines a package that provides signals for use with precedence features, such as those used by military, government and disaster recovery applications.	prectn	0x009f	1	H.248.44 (2007)	Done
H.248.45 **MGC information package** This Recommendation defines a package to enable a MGC to store data on a MG that can be subsequently retrieved to facilitate MGC recovery action.	mgcinfo	0x00a0	1	H.248.45 (2006)	Done
H.248.46 **Connection capability control package** This Recommendation defines a package that allows a MGC to determine and control whether the MG allows the application of optimization mechanisms with regard to efficiency maximization of MG data-path resources, and/or optimization of QoS/performance metrics to the MG internal connection.	ccc	0x00ad	1	H.248.46 (ex. H.248.CCC) (2007)	Done

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
H.248.47 **Statistic conditional reporting package** This Recommendation contains a H.248 package that defines a generic method of reporting when statistics meet a pre-defined condition. Revision 1 adds a new parameter to the SCR package to request event timestamp notification. It also adds new conditions for reporting based on value metrics.	scr	0x00ae	2	H.248.47 (ex. H.248.SCR) (2007) Revised (2008)	Done
H.248.48 **RTCP HR QoS statistics packages** This Recommendation defines a package which allow MGs to report media transmission quality and call quality to MGCs, using RTCP HR metrics.	qhr	0x00af	1	H.248.48 (ex. H.248.QHR) (planned 2009)	In progress
H.248.49 **SDP RFC packages** This Recommendation defines a package to determine which SDP RFC is used for a MGC and MG control association. It also contains a package to determine the SDP capabilities used.				H.248.49 (ex. H.248.SDPVER) (2007)	Done
• session description protocol RFC package;	sdpr	0x00bb	1		
• session description protocol capabilities package.	sdpc	0x00bc	1		
H.248.50 **NAT traversal toolkit packages** This Recommendation describes packages to enable various network address translator (NAT) traversal techniques to be employed in order to facilitate media flow between networks. The MGC may utilize any of the packages in any order to gather addresses, map them and then maintain connectivity with and through NATs.				H.248.50 (ex. H.248.NATTT) (planned 2009)	In progress

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
The packages contained within the Recommendation are:					
• STUN base package;	stunb	0x00bd	1		
• MG STUN client package;	mgstunc	0x00be	1		
• MG TURN client package;	mgturnc	0x00bf	1		
• MGC STUN client package;	mgcstunc	0x00c0	1		
• STUN information package;	stuni	0x00c1	1		
• MG Act-as STUN server package;	mgastuns	0x00c2	1		
• originate STUN continuity check package;	ostuncc	0x00c3	1		
• MGC originated STUN request package;	mgcostunr	0x00c4	1		
• RTP NOOP request package.	kar	0x00c5	1		
H.248.51 **Termination connection model package** This package allows a media gateway controller to audit a media gateway in order to determine what termination connection configurations are allowed in a context. It provides the media gateway controller an automatic means to determine the information contained in H.248.1 Appendix III "Profile definition template" and clause 6.4 "Connection model".	tcm	0x00c6	1	H.248.51 (ex. H.248.TCM) (2007)	Done
H.248.52 **Quality of service packages** This Recommendation provides H.248 packages for different support mechanisms with regard to quality of service (QoS). The QoS class package may be used in various areas with relations to QoS like, e.g., MG level admission control functions. The differentiated service package is specifically designed to support QoS marking for IPv4- or IPv6-based H.248 streams/terminations.				H.248.52 (ex. H.248.QoS) (2008)	Done

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
This Recommendation contains the following packages: • QoS class package; • differentiated services package; • General IP header QoS octet package.	 qos ds gih	 0x00c7 0x008b 0x00e1	 1 1 1		
H.248.53 **Traffic management packages** H.248 media gateways may support interfaces with packet-switched networks (via ephemeral terminations). Such kinds of bearer connections could be subject of traffic control mechanisms. This Recommendation focuses on the traffic policing function. This Recommendation contains the following packages: • traffic management package; • traffic policing statistics package; • packet size package.	 tman tmanr pacs	 0x008d 0x00c8 0x00c9	 2 1 1	H.248.53 (ex. H.248.TMAN) (2008)	Done
H.248.54 **MPLS support packages** This Recommendation defines an H.248 package, which allows media gateways connected to an MPLS domain to bind H.248 streams or terminations to MPLS label switched paths.	mpls	0x0090	1	H.248.54 (ex. H.248.MPLS) (2007)	Done
H.248.55 **Generic Pull mode package** This Recommendation describes how H.248 entities behave in a next generation network (NGN) environment where policy control (i.e., QoS resource control) is used. It defines an H.248 package, which may be used in a specific resource control scenario whereby the user initiates the resource request.	plm	0x00ca	1	H.248.55 (ex. H.248.PLM) (2008)	Done

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
H.248.56 **Virtual private network packages** This Recommendation defines H.248 packages for VPN support where media gateways are located at the boundary of virtual private networks. This Recommendation focuses on Ethernet-based virtual local area networks, representing a network-based Layer 2 VPN type.	vlan	0x0091	1	H.248.56 (H.248.VPN) (2007)	Done
H.248.57 **RTP control protocol package** This Recommendation contains functionality to describe the use of the RTP control protocol (RTCP) in H.248-controlled media gateways. RTCP is used for instance to monitor the quality of service and to convey information about the participants in an ongoing RTP session.	rtcph	0x00b5	1	H.248.57 (2008)	Done
H.248.58 **Packages for application level H.248 statistics** This Recommendation defines H.248 statistics which are used for measurements on an application data level.	rtpad	0x00cb	1	H.248.58 (2008)	Done
H.248.59 **Event timestamp notification package** This package is to provide a gateway-wide means of determining whether or not a media gateway supports the use of timestamps with the event detection time at event notification. If timestamps are supported, it allows the media gateway controller to request that timestamps are always reported with an event notification.	etn	0x00cc	1	H.248.59 (2007)	Done
H.248.60 **Identification of content and communication**	cci	0x00d1	1	H.248.60 (ex. H.248.cci) (2009)	In progress

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
H.248.61 **Packages for network level H.248 statistics**	ipocs	0x00d0	1	H.248.61 (H.248.ipocs) (05/2008)	In progress
H.248.62 **Re-answer package** This Recommendation provides a mechanism to Re-Answer a call that had been finished by callee or caller, in order to make the speech between caller and callee resume and continue.	ra	0x00e2	1	H.248.62 (ex. H.248.RA) (06/2008)	Done
H.248.63 **Resource management packages**	rmr rmc arm	0x00cd 0x00ce 0x00cf	1	H.248.63 (ex. H.248.resman)	In progress
H.248.64 **IP Router package**	ipr	0x00d4	1	H.248.64 (ex. H.248.IPR)	In progress
H.248.65 **Support of the Resource Reservation Protocol**	rsvp	0x00d2	1	H.248.65 (ex. H.248.RSVP)	In progress
H.248.66 **Packages for RTSP and H.248 interworking** This Recommendation contains the following packages:				H.248.66 (ex. H.248.RTSP)	In progress
• media resource identification package;	mri	0x00d5	1		
• range format support package;	rfs	0x00d6	1		
• media resource description expiry package;	mrde	0x00d7	1		
• media block size package;	mbs	0x00d8	1		
• RTSP media resource syntax package;	mrs	0x00d9	1		
• RTSP play package;	rtspp	0x00da	1		
• signal pause package;	sp	0x00db	1		
• data delivery speed adjustment package;	ddsa	0x00dc	1		
• playback relative scale adjustment package;	prsa	0x00dd	1		
• RTP information package;	rtpinfo	0x00de	1		
• RTP interleaving package.	rtpint	0x00df	1		
H.248.67 **GCP Transport Mode Indication Package**	trm	0x00d3	1	H.248.67 (ex. H.248.TrM)	In progress

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
H.248.PIPA **Package Identifier Publishing and Application Package** This Recommendation defines a H.248 package that allows a media gateway controller (MGC) to indicate to a media gateway (MG) how it would like the base and extended package identifiers to be published, and determine the "base-extension" relationship of the packages supported by the MG as well as their publishing status.	pipa	0x00??	1	H.248.PIPA	In progress
H.248.TDR **Tone and Digit Removal Package** This Recommendation defines a package that allows a media gateway controller (MGC) to indicate to a media gateway (MG) whether it should remove tones and/or DTMF digits.	tdr	0x00??	1	H.248.TDR	In progress

6 Externally defined packages that meet requirements

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

6.1 ITU-T Study Group 11

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
Bearer characteristics package This package contains the functionality required to identify which bearer services are to be supported by a MG. Version 2 introduces a new value for TDM bearer characteristics.	bcp	0x001e	2	A.3/Q.1950	Done
Bearer network connection cut-through package This package provides the functionality to be able to determine the cut through capabilities of the bearer network.	bnct	0x001f	1	A.4/Q.1950	Done
Reuse idle package This package provides the ability to determine the reuse of idle bearer functionality network.	ri	0x0020	1	A.5/Q.1950	Done

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
Generic bearer connection package This package provides the functionality to be able to establish/modify/release a bearer connection.	gb	0x0021	1	A.6/Q.1950	Done
Bearer control tunnelling package This package describes the functionality to be able to support the transport of "bearer information transport" information between an MGC and MG.	bt	0x0022	1	A.7/Q.1950	Done
Basic call progress tones generator with directionality 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.	bcg	0x0023	1	A.8/Q.1950	Done
Expanded call progress tones generator package 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.	xcg	0x0024	1	A.9/Q.1950	Done
Basic services tones generation package This package defines signals for use by telephony services and allows for specification of directionality.	srvtn	0x0025	1	A.10/Q.1950	Done
Expanded services tones generation package This package defines additional signals for use by telephony services and allows for specification of directionality.	xsrvtn	0x0026	1	A.11/Q.1950	Done
Intrusion tones generation package This package defines for use by operator-based telephony services and allows for specification of directionality.	int	0x0027	1	A.12/Q.1950	Done
Business tones generation package This package defines for use by business telephony services and allows for specification of directionality.	biztn	0x0028	1	A.13/Q.1950	Done
Connection group identity package The connection group ID is required information in a BIWF if a connection is to be established in the direction toward the BICC access network and the private virtual facility capability is invoked.	xg	0x0067	1	Annex E/ Q.1950	Done

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
SPNE control package 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	0x0069	1	Q.115.0	Done

6.2 3GPP CT4

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
3GUP (user plane) package 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	1	3GPP TS 29.232 v7.0.0	Done
Circuit switched data package This package contains the information needed to be able to support GSM and UMTS circuit switched data from the media gateway.	threegcsd	0x0030	1	3GPP TS 29.232 v7.0.0	Done
TFO package 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.	threegtfoc	0x0031	2	3GPP TS 29.232 v7.0.0	Done
3G Expanded call progress tones generator package This package extends "expanded call progress tones generator package" as defined in [ITU-T Q.1950]. The package adds a new toneId for CAMEL prepaid warning tone.	threegxcg	0x0032	1	3GPP TS 29.232 v7.0.0	Done
3G Modification of link characteristics package	threegmlc	0x0046	1	3GPP TS 29.232 v7.0.0	Done

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
CTM text transport The CTM text transport package is intended for enabling robust real-time text conversation through a voice channel primarily intended for communication over mobile networks. This package includes the mechanisms needed to transport T.140 text conversation streams in a voice channel environment, using the CTM cellular text telephone modem specified in 3GPP TS 26.226. The transport mechanism allows for alternating transport of voice and text.	threegctm	0x0068	1	3GPP TS 29.232 v7.0.0	Done
Enhanced circuit switched data package This package extends "circuit switched data package", as defined in 15.1.2 of the referenced document. This package adds a new property to define the user bitrate at a Nb/Iu termination.	threegcsden	0x0082	1	3GPP TS 29.232 v7.0.0	Done
IP transport package This package contains the information needed to be able to support IP transport from RAN to the media gateway.	threegiptra	0x0083	1	3GPP TS 29.232 v7.0.0	Done
Flexible tone generator package This package extends "3G expanded call progress tones generator package", as defined in 15.1.4 of the referenced document. This package adds a new tone for call duration control in CAMEL phase 4, supporting variable sequence of tones and burst list.	threegflex	0x0084	1	3GPP TS 29.232 v7.0.0	Done
Call trace package This package defines properties for subscriber and equipment trace activation and deactivation properties to be attached to the trace record generated by MGW.	calltrace	0x0097	1	3GPP TS 29.232 v7.0.0	Final
ASCI group call package This package contains the information needed to be able to support VGCS (3GPP TS 43.068) and VBS (3GPP TS 43.069) services.	threegasci	0x00b2	1	3GPP TS 29.232 v7.5.0	Final

6.3 ITU-T Study Group 9

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
ISUP trunk tones generator package This package defines the ISUP trunk tones played from a trunk gateway as signals and extends the allowed values of the tl parameter of playtone in tonegen.	isuptn	0x006c	1	Annex A/ J.171.2	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 regard to the package definition rules contained in clause 12/H.248.1. The packages below may also overlap in functionality.

7.1 ATMF (ATM forum)

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
ATMF are no longer defining their own packages. Reference is made to IETF developed packages. For more information, see BTD-VMOA-LESH248-01.02 LES Using AAL 2 – H.248 Signalling Addendum October 2001.					

7.2 ETSI Tispan

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
Aggregate bearer control package 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	?	1	DTS 03022 v0.0.3	In progress
TIPHON extended H.248/MEGACO package (EMP) specification; ICF control over reference point This package defines a property to enable the MGC to act as a MIDCOM agent and control a "gateway" acting as a middlebox. • middle box package.	emb	0x008a	1	ETSI TS 101 332 (2002)	Done

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
H.248 profile for gate control The referenced document defines a profile of the MEGACO protocol for controlling gates between IP transport domains. It also defines specific packages that are required by this profile specification.				ETSI TS 102 333 (2004)	Done
• differentiated services package;	Superseded by H.248.52				
• gate management package;	Superseded by H.248.43				
• traffic management package;	Superseded by H.248.53				
• gate recovery information package;	Superseded by H.248.45				
• NAT traversal package;	Superseded by H.248.37				
• MPLS package;	Superseded by H.248.54				
• VLAN package.	Superseded by H.248.56				
MGC information package	mgcinfo	0x00a0	1	ETSI TS 183 022 (2005)	Superseded by H.248.45
ETSI notification behaviour package	etsi_nb	0x00a4	1	ETSI ES 283 039-3	NOTE – The use of the ITU notification behaviour package is encouraged.
ETSI notification rate package	etsi_nr	0x00a5	1	ETSI ES 283 039-4	

7.3 IETF Megaco

Package name and description	Identity		Version	Reference (Note)	Status
	Text	Binary			
Megaco/H.248 sub-series NAS packages				draft-ietf-megaco-naspkg-05.txt	Expired
• Basic NAS package;	nas	0x004b	1		
• NAS incoming package;	nasin	0x004c	1		
• NAS outgoing package;	nasout	0x004d	1		
• NAS control package;	nasctl	0x004e	1		
• NAS root package.	nasroot	0x004f	1		
Megaco R2 packages and call flows	NA	NA	NA	draft-ietf-megaco-r2package-04.txt	Expired
NOTE – The packages are official work items adopted by the IETF Megaco work group. These references can be found at the URLs ftp://www.ietf.org/internet-drafts/ or https://datatracker.ietf.org/idtracker/.					

7.4 IETF individual submissions

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
MF tone generation and detection packages	NA	NA	NA	draft-bothwell-megaco-mftonepkgs-03.txt	Expired. Superseded by H.248.24.
ISDN package for Megaco	NA	NA	NA	draft-bouwen-megaco-isdn-pack-00.txt	Expired
Enhanced alerting packages for Megaco/H.248 sub-series	NA	NA	NA	draft-boyle-megaco-alerting-03.txt	Expired. Superseded by H.248.23.
Supplemental tones packages for Megaco/H.248 sub-series	NA	NA	NA	draft-boyle-megaco-tonepkgs-07.txt	Expired. Superseded by H.248.27.
MGC cookie package for Megaco/H.248 sub-series	mgcckie	0x00??	NA	draft-cutler-megaco-mgc-cookie-02.txt	Expired
Megaco/H.248 sub-series basic CAS packages	NA	NA	NA	draft-manyfolks-megaco-caspackage-02.txt	Expired. Superseded by H.248.25.
Enhanced line services packages	NA	NA	NA	draft-taylor-megaco-enhalpkgs-01.txt	Expired. Superseded by H.248.26.
Name pattern package for Megaco	nampat	0x00??	NA	draft-rosen-megaco-namepatterns-01.txt	Expired
Megaco/H.248 sub-series QoS packages The referenced document is 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??	NA	draft-madhubabu-megaco-qospackage-00.txt	Expired
Megaco/H.248 FXO packages The referenced document describes the events and signals helpful for signalling between central office (CO) and foreign exchange office (FXO) at customer premises equipment (CPE).	NA	NA	NA	draft-sridhar-megaco-fxopackage-01.txt	Expired

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
AAL 2 package	NA	NA	NA	draft-barr-megaco-aal2bearer-00.txt	Expired
Megaco ATM package	NA	NA	NA	draft-rosen-megaco-atm-package-01.txt	Expired
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.					

8 H.248 sub-series MIBS

MIB name	Reference (Note)
H.248 sub-series MIB	<draft-ietf-megaco-mib-06.txt>
H.248 ringing MIB	<draft-pitchandi-megaco-ringing-mib-00.txt>
H.248 sub-series tones MIB	<draft-doyle-megaco-tonesmib-00>
NOTE – These references can be found at the URLs ftp://www.ietf.org/internet-drafts/ or https://datatracker.ietf.org/idtracker/.	

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