International Telecommunication Union

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Series H

Supplement 2

(04/2006)

SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

H.248.x sub-series packages guide – Release 8

ITU-T H-series Recommendations – Supplement 2

ITU-T H-SERIES RECOMMENDATIONS

AUDIOVISUAL AND MULTIMEDIA SYSTEMS

CHARACTERISTICS OF VISUAL TELEPHONE SYSTEMS	H.100–H.199
INFRASTRUCTURE OF AUDIOVISUAL SERVICES	
General	H.200–H.219
Transmission multiplexing and synchronization	H.220–H.229
Systems aspects	H.230–H.239
Communication procedures	H.240–H.259
Coding of moving video	H.260–H.279
Related systems aspects	H.280–H.299
Systems and terminal equipment for audiovisual services	H.300–H.349
Directory services architecture for audiovisual and multimedia services	H.350–H.359
Quality of service architecture for audiovisual and multimedia services	H.360–H.369
Supplementary services for multimedia	H.450–H.499
MOBILITY AND COLLABORATION PROCEDURES	
Overview of Mobility and Collaboration, definitions, protocols and procedures	H.500–H.509
Mobility for H-Series multimedia systems and services	H.510–H.519
Mobile multimedia collaboration applications and services	H.520–H.529
Security for mobile multimedia systems and services	H.530–H.539
Security for mobile multimedia collaboration applications and services	H.540–H.549
Mobility interworking procedures	H.550–H.559
Mobile multimedia collaboration inter-working procedures	H.560–H.569
BROADBAND AND TRIPLE-PLAY MULTIMEDIA SERVICES	
Broadband multimedia services over VDSL	H.610–H.619

For further details, please refer to the list of ITU-T Recommendations.

Supplement 2 to ITU-T H-series Recommendations

H.248.x sub-series packages guide – Release 8

Summary

This Supplement summarizes packages that have been standardized in the time-frame from June 2000 to April 2006. 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 8 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.

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

Release 8 contains new packages defined in ITU-T Recs H.248.19 Amendment 1, H.248.38, H.248.40, H.248.41, H.248.42, H.248.44 and H.248.45. It also contains references to new work items: H.248.GM, H.248.CCC, H.248.SCR and H.248.QHR.

Source

Supplement 2 to ITU-T H-series Recommendations was agreed on 13 April 2006 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. 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.

Compliance with this publication is voluntary. However, the publication may contain certain mandatory provisions (to ensure e.g. interoperability or applicability) and compliance with the publication is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the publication is required of any party.

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this publication may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the publication development process.

As of the date of approval of this publication, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this publication. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

CONTENTS

Supplement 2 to ITU-T H-series Recommendations

H.248.x sub-series packages guide – Release 8

1 Scope

This Supplement summarizes packages that have been standardized in the time-frame from June 2000 to April 2006. 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 8 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 Recommendation 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		
• Analog 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 & ctype 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	2		
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		

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
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
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

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
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	0x0033 0x0034 0x0035 0x0036 0x0047 0x0048 0x0049 0x004a	1 2 1 1 1 2 2 2	H.248.9 (2005)	Done
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

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
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.	h324ext h245comext h245indext	0x0063 0x0064 0x0065	1 1 1	Amd.1 /H.248.12 (2002)	Done
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

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
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 404 Hz Line Test Package;	itult404	0x0055	1		
• ITU 816 Hz Line Test Package;	itult816	0x0056	1		
• ITU 1020 Hz Line Test Package;	itult1020	0x0057	1		
• ITU 2100 Hz Disable Tone Line Test Package;	itultdist	0x0058	1		
• ITU 2100 Hz Disable Echo Canceller Tone Line Test Package;	itultdisecd	0x0059	1		
• ITU 2804 Hz Tone Line Test Package;	itult2804	0x005a	1		
• ITU Noise Test Tone Line Test Package;	itultntt	0x005b	1		
• ITU Digital Pseudo Random Test Tone Line Test Package;	itultdprt	0x005c	1		
• ITU ATME No. 2 Test Line Response Package;	itultatme2	0x005d	1		
• 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

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
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)	Done Amendment 1 in Progress
• Floor Control Package;	fcp	0x006e	1		
• 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		
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

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
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:				H.248.23 (2005)	Done
• Enhanced Alerting Package;	Alert	0x003b	2		
• Analogue Display Signalling Package.	Andisp	0x003c	2		
Version 2 of the packages increases the ring cadences from 15 to 256.					
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)	Done
• Basic CAS Package;	bcas	0x003f	1		
• Robbed Bit Signalling Package;	rbs	0x0040	1		
• Operator Services and Emergency Services Package;	oses	0x0041	1		
• Operator Package.	osext	0x0042	1		

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
H.248.26 **Enhanced analogue lines packages** This Recommendation defines several packages that provide support for extended line supervision and metering analog 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		
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)	Done
• International CAS Package;	icas	0x007b	1		
• CAS Blocking Package.	casblk	0x007c	1		
H.248.29 **International CAS compelled register signalling packages**				H.248.29 (2005)	Done
• International CAS Compelled Package;	icasc	0x007d	1		
• International 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)	Done
• RTCP XR Base Package;	rtcpxr	0x0080	1		
• RTCP XR Burst Metrics Package.	xrbm	0x0081	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		
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

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
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
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.	ipnapt	0x0099	1	H.248.37 (2005)	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

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
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	In progress
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.	ipdc	0x009d	1	H.248.41 (2006)	Done
H.248.42 **DCME interworking package** This Recommendation defines a package used for interfacing Digital Circuit Multiplication Equipment (DCME).	dcme	0x009e	1	H.248.42 (2006)	Done
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	In progress
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.GM **Gate Management Packages**	??	??	?	??	In progress
H.248.CCC **Connection Capability Control Package**	ccc	0x00??	1	H.248.CCC	In progress
H.248.SCR **Statistic Conditional Reporting Package**	scr	0x00??	1	H.248.SCR	In progress
H.248.QHR **RTCP HR QoS Statistics Packages**	??	??	?	??	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
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

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
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
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 CN4

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

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
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 Rec. 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
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

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
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

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

Package name and description	Identity		Version	Reference	Status
	Text	Binary			
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.				ETSI TS 101 332 (2002)	Done
• Middle Box Package.	emb	0x008a	1		
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;	ds	0x008b	1		
• Gate Management Package;	gm	0x008c	1		
• Traffic Management Package;	tman	0x008d	1		
• Gate Recovery Information Package;	gri	0x008e	1		
• NAT Traversal Package;	ntr	0x008f	1		
• MPLS Package;	mpls	0x0090	1		
• VLAN Package.	vlan	0x0091	1		
MGC Information Package	MGCinfo	0x00??	1	ETSI TS 183 022 (2005)	Superseded by H.248.45

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 URL ftp://www.ietf.org/internet-drafts/.

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 URL ftp://www.ietf.org/internet-drafts/.

SERIES OF ITU-T RECOMMENDATIONS

Series A	Organization of the work of ITU-T
Series D	General tariff principles
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media, digital systems and networks
Series H	**Audiovisual and multimedia systems**
Series I	Integrated services digital network
Series J	Cable networks and transmission of television, sound programme and other multimedia signals
Series K	Protection against interference
Series L	Construction, installation and protection of cables and other elements of outside plant
Series M	Telecommunication management, including TMN and network maintenance
Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Telephone transmission quality, telephone installations, local line networks
Series Q	Switching and signalling
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	Data networks, open system communications and security
Series Y	Global information infrastructure, Internet protocol aspects and next-generation networks
Series Z	Languages and general software aspects for telecommunication systems

Printed in Switzerland
Geneva, 2006