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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

Infrastructure of audiovisual services – Communication procedures

Gateway control protocol: Dynamic Tone Definition package

ITU-T Recommendation H.248.6

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.399
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

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

ITU-T Recommendation H.248.6

Gateway control protocol: Dynamic Tone Definition package

Summary

This Recommendation defines a dynamic tone definition package for use with the H.248.1 Gateway Control Protocol. The dynamic tone definition package allows flexible tone specification in a media gateway for feedback to audio receivers. A tone can be defined by assigning properties (for example, frequency or duration) to an existing tone (i.e., a tone defined in some other package) or a new tone. As defined in ITU-T Rec. H.248.1, a "package" is an extension to H.248.1 that supports specific behavior.

NOTE – This Recommendation has been renumbered. It was formerly known as ITU-T H.248 Annex J.

Source

Recommendation H.248.6 was prepared by ITU-T Study Group 16 (2001-2004) and approved under the WTSA Resolution 1 procedure on 17 November 2000.

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

INTELLECTUAL PROPERTY RIGHTS

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

CONTENTS

			Page
1	Scope		1
2	References		1
3	Dynamic Tone Definition package		1
	3.1	Properties	1
	3.2	Events	2
	3.3	Signals	2
	3.4	Statistics	2
	3.5	Procedures	2
	3.5.1	Updating Tone Definition	2
	3.5.2	Reading existing tones	2
	3.5.3	Tone String (tst) description	2

ITU-T Recommendation H.248.6

Gateway control protocol: Dynamic Tone Definition package

1 Scope

This Recommendation defines a package that extends the applicability of the H.248.1 Gateway Control Protocol Recommendation. Specifically, ITU-T Rec. H.248.6 defines a dynamic tone definition package for use with the H.248.1 Gateway Control Protocol. The dynamic tone definition package allows flexible tone specification in a media gateway for feedback to audio receivers. A tone can be defined by assigning properties (for example, frequency or duration) to an existing tone (i.e. a tone defined in some other package) or a new tone.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revisions; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

– ITU-T Recommendation H.248.1 (2000), *Gateway Control Protocol*.

3 Dynamic Tone Definition package

PackageID: dtd, 0x001c

Version: 1

Extends: None

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.

3.1 Properties

Tone ID

PropertyID: tid (0x0001)

Description:

Indicates the new or existing tone to be modified or who's tone string is to be read.

Type: expanding enumeration

Possible Values:

Existing package_id, tone id described in supported packages that extend tonegen or new tones to be added.

Defined in: TerminationState.

If the termination is in a context, the changes to the tones apply only to the termination in the context. When the termination leaves the context, the changes are lost. If the termination is in the null context, the changes apply to the termination from then on. If the termination is root, the changes apply to the whole gateway.

Characteristics: both read and write.

Tone String

PropertyID: tst (0x0002)

Description: Tone description string. See procedures ,

Type: String

Possible Values: See procedures.

Defined in: TerminationState.

Characteristics: both read and write:

3.2 Events

None

3.3 Signals

None

3.4 Statistics

None

3.5 Procedures

3.5.1 Updating Tone Definition

To modify or create a new tone:

1) Set tid to an existing or new package_id,tone id value.

2) Set tst to the new tone description.

If tst is null, the id is decommissioned and removed. Only newly defined tonids can be removed.

3.5.2 Reading existing tones

To read the list of tones defined:

1) Read tid.

To read an already defined tone string:

1) Set tid.

2) Read tst.

Some package-defined tones may not have a tone string in the gateway. In that case the tst read will have the value "Not Available".

3.5.3 Tone String (tst) description

The syntax for the tone definition string is recursive and uses parenthesis as a delimiter of elements. DefToneString below is the tone string(tst):

DefToneString = "(" DefToneElement ["*" RepeatCount] ")" [","/"+"/"X" DefToneString]

NOTE 1 – A separator of ',' indicates that the next definition follows sequentially in time; a separator of '+' indicates that the following tone is to be mixed with the previous tone and is simultaneous with it; a separator of 'X' indicates that the first tone is modulated by the second tone.

NOTE 2 – All implementations must support sequential definitions (',' separator). Mixing ('+') and modulation ('X') support are optional; however, the implementation must make a best effort and return no error in these cases.

NOTE 3 – Recursion is limited to a maximum of 32 levels. All implementations must support at least 2 levels of recursion.

RepeatCount = %d1-32767 / %d0

NOTE 4 – repeatcount of 0 indicates infinite repeating.

DefToneElement = ToneName ["," ToneDuration ["," ToneAmplitude]]
ToneName = (Package id, Tone id) / "#"FreqValue / "&"AnnouncementParameterList
Package id = 1*VCHAR; Unique package identity string or value
Tone id = 1*VCHAR; Unique tone identity string or value
FreqValue = %d0-4000; in Hertz
AnnouncementParameterList = AnnouncementID ["," SubstitutionString]
AnnouncementID = 1*VCHAR; Unique identifier for an audio announcement
SubstitutionString = """1*VCHAR"""; a string to be inserted into an announcement.
ToneDuration = %d1-32767 / %d0; in milliseconds

NOTE 5 – ToneDuration of 0 indicates infinite duration or duration defined by the Tone id.

ToneAmplitude = "-"%d32-1 / %d0; in dBm0

An example of tone definition follows.

RingingTone = ((0x0005,0x0031),((#480)+(#620)),250,-24)*0

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Series A	Organization of the work of ITU-T
Series B	Means of expression: definitions, symbols, classification
Series C	General telecommunication statistics
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	TMN and network maintenance: international transmission systems, telephone circuits, telegraphy, facsimile and leased circuits
Series N	Maintenance: international sound programme and television transmission circuits
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