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H.248.12

Amendment 1
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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS
Infrastructure of audiovisual services – Communication
procedures

Gateway control protocol: H.248.1 packages for
H.323 and H.324 interworking

**Amendment 1: New Annex A: Extended H.324,
H.245 command and H.245 indication packages**

ITU-T Recommendation H.248.12 (2001) – Amendment 1

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ITU-T Recommendation H.248.12

Gateway control protocol: H.248.1 packages for H.323 and H.324 interworking

Amendment 1

New Annex A: Extended H.324, H.245 command and H.245 indication packages

Summary

The new Annex A in this amendment defines new H.248.1 packages, which extend the H.324, H.245 command and H.245 indication packages, defined in ITU-T Rec. H.248.12. The packages extend the existing packages by adding new properties.

Source

Amendment 1 to ITU-T Recommendation H.248.12 (2001) was prepared by ITU-T Study Group 16 (2001-2004) and approved under the WTSA Resolution 1 procedure on 29 November 2002.

FOREWORD

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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.

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As of the date of approval of this Recommendation, ITU had not 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.

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ITU-T Recommendation H.248.12

Gateway control protocol: H.248.1 packages for H.323 and H.324 interworking

Amendment 1

New Annex A: Extended H.324, H.245 command and H.245 indication packages

A.1 Scope

This annex defines properties for H.324 and H.323 interworking, which are needed together with the properties in the H.324 package, H.245 command package and H.245 indication package, for interworking with H.324 terminals having different H.324 capabilities, when the interworking function is handled by the MGC.

A.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 revision; 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. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

- ITU-T Recommendation H.223 (2001), *Multiplexing protocol for low bit rate multimedia communication*.
- ITU-T Recommendation H.245 (2003), *Control protocol for multimedia communications*.
- ITU-T Recommendation H.248.1 (2002), *Gateway control protocol: Version 2*.
- ITU-T Recommendation H.248.12 (2001), *Gateway control protocol H.248.1 packages for H.323 and H.324 interworking*.
- ITU-T Recommendation H.248.15 (2002), *Gateway control protocol: SDP H.248 package attribute*.
- ITU-T Recommendation H.324 (2002), *Terminal for low bit-rate multimedia communication*.
- ITU-T Recommendation X.691 (2002), *Information technology – ASN.1 encoding rules: Specification of Packed Encoding Rules (PER)*.
- IETF RFC 2327 (1998), *SDP: Session Description Protocol*.

A.3 Definitions

N/A

A.4 Abbreviations

This annex uses the following abbreviations:

LSB	Least Significant Bit
MGC	Media Gateway Controller
MSB	Most Significant Bit
MUX	MULTipleX
PDU	Protocol Data Unit
PER	Packed Encoding Rules
TCS	Terminal Capability Set

A.5 Extended H.324 package

PackageID: h324ext, (0x0063)

Description:

The Extended H.324 Package extends the H.324 Package defined in ITU-T Rec. H.248.12. The package defines new properties for H.324 and H.323 interworking, which are needed when the interworking function is handled by the MGC.

Version: 1

Designed to be extended only:

No

Extends: h324 (0x002d) version 1

A.5.1 Properties

A.5.1.1 Maximum H.223 MUX PDU size

PropertyID: maxH223MUXPDUSize, (0x0007)

Description:

This property indicates the maximum size for H.223 MUX PDU in number of octets.

Type: Integer

Characteristics: Read/Write

Defined in: LocalControl

Possible values: Any positive integer

A.5.1.2 Local H.223 capability

PropertyID: h223cap1, (0x0008)

Description:

This property indicates the local endpoint's capabilities specific to the H.223 multiplex capability.

Type: Octet String

Characteristics: Read/Write

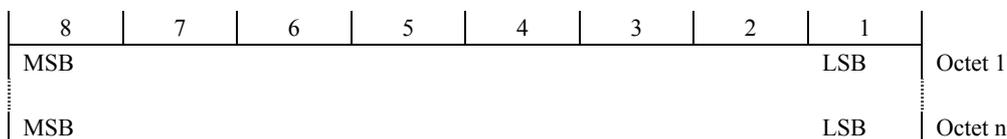
Defined in: LocalControl

Possible values:

This property indicates the H.245 H223Capability structure encoded by applying the PER specified in ITU-T Rec. X.691.

Binary encoding:

Structure of the Octet String



NOTE – Octet 1 contains the most significant octet of data.

Text encoding: Shall be encoded using the mechanism defined in B.3/H.248.1.

A.5.1.3 H.223 Logical channel parameters

PropertyID: h223lcparm, (0x0009)

Description:

This property is used to indicate parameters specific to using H.223. It indicates both adaptation layer and multiplex layer properties used for the logical channel.

Type: Octet String

Characteristics: Read/Write

Defined in:

Local and Remote descriptor Possible values: This property indicates the H.245 H223LogicalChannelsParameters structure encoded by applying the PER specified in ITU-T Rec. X.691. Value encoded as per A.5.1.2. For text encoding the mechanism defined in ITU-T Rec. H.248.15 is used.

A.5.2 Events

None.

A.5.3 Signals

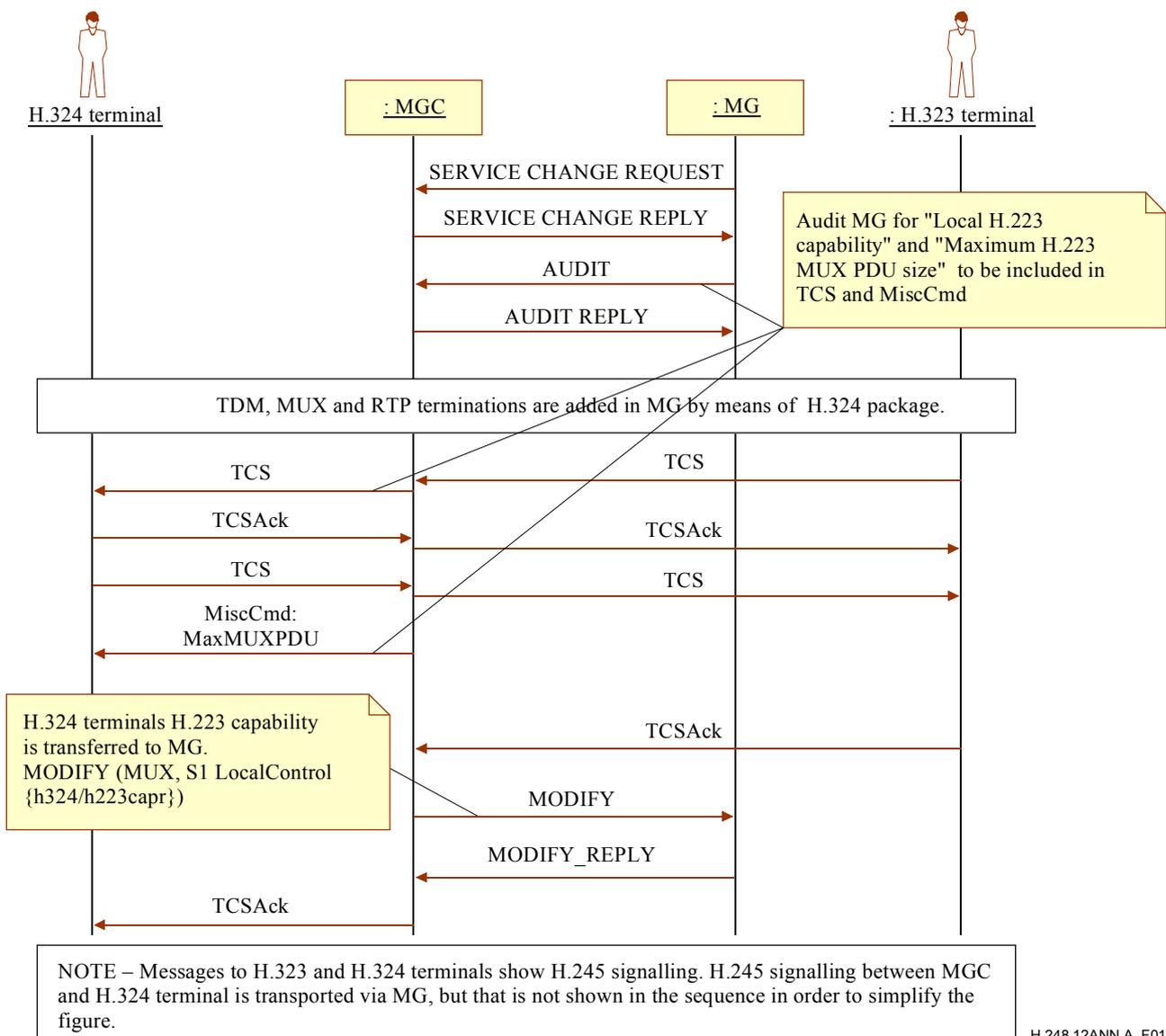
None.

A.5.4 Statistics

None.

A.5.5 Procedures

These procedures are related to the scenario in which MGC executes H.245 control itself as shown in Figures A.1 to A.3.

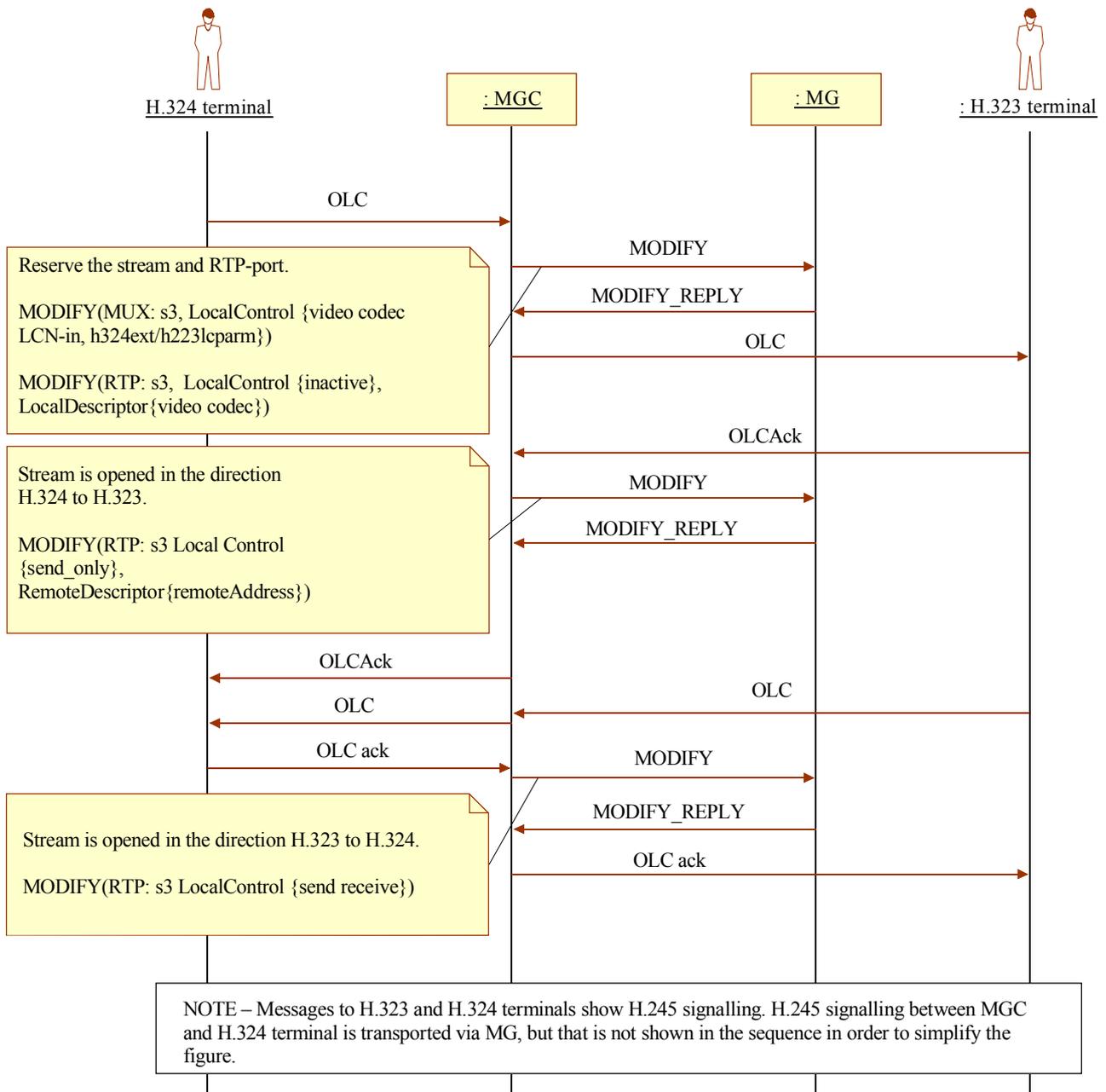


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Figure A.1/H.248.12 – Sequence diagram terminal capability exchange at H.324 and H.323 interworking

The MGC will participate in H.245 terminal capability exchange procedures after it has created an H324 termination in the MG as per Figure A.1.

In order to know the H.223 multiplex capabilities to be provided to H.324 terminal, the MGC audits the MG for the "Local H.223 capability" and "Maximum H.223 MUX PDU size".



H.248.12ANNA_F02

Figure A.2/H.248.12 – Sequence diagram for opening the logical channel

When logical channels are opened between terminals by the H.245 protocol, the MGC adds the streams between the multiplex and RTP terminations in the MG as per Figure A.2. The streams are described by usual manner as described in 7.1/H.248.1. The H.223 Logical Channel Parameters define the H.223 multiplexing properties used for the stream towards the H.324 terminal, e.g. the adaptation layer to be used. When textual encoding is used, the property is coded within SDP by using H.248.15.

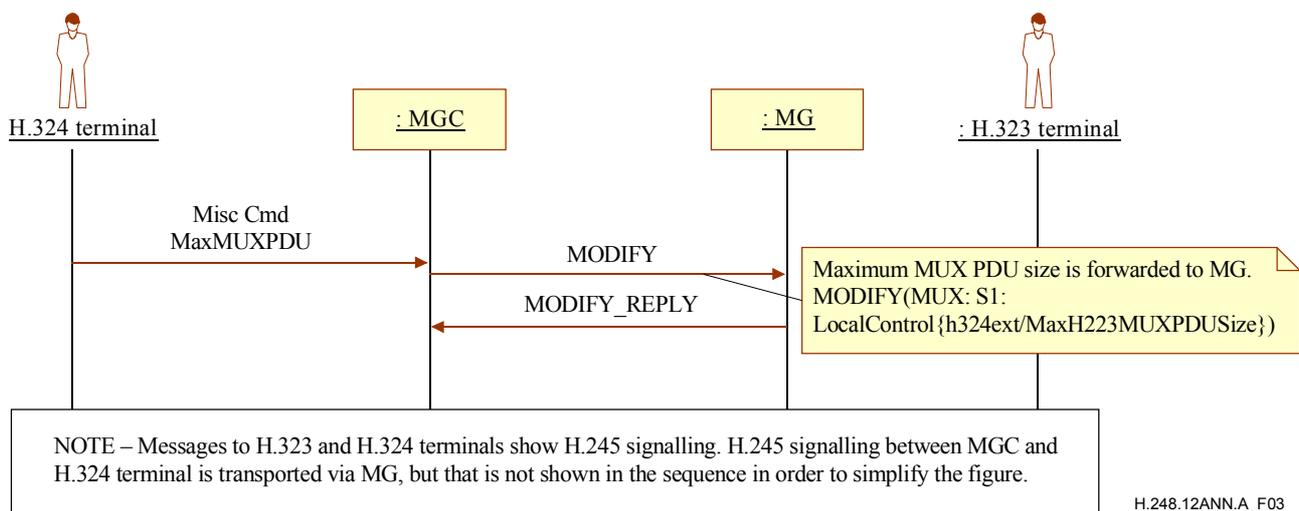


Figure A.3/H.248.12 – Sequence diagram for maximum PDU specification

At any time when a remote H.324 terminal commands to restrict the size of the H.223 MUX-PDUs, the MGC shall order the MG to restrict the H.223 MUX PDU size that it transmits to a maximum of the specified number of octets as per Figure A.3.

A.6 Extended H.245 Command Package

PackageID: h245comext, (0x0064)

Description:

The Extended H.245 Command Package extends the H.245 Command Package defined in ITU-T Rec. H.248.12. The package defines new properties for H.324 and H.323 interworking, which are needed when the interworking function is handled by the MGC.

Version: 1

Designed to be extended only:

No

Extends: h245com (0x002e) version 1

A.6.1 Properties

A.6.1.1 H.245 Version

PropertyID: h245version, (0x0005)

Description:

This property indicates the highest version of the H.245 protocol used.

Type: Integer

Characteristics: Read Only

Defined in: LocalControl descriptor

Possible values:

Any positive integer as per the version from the H.245 **protocolIdentifier** structure.

A.6.1.2 Flow Control Command

PropertyID: flowControlCom, (0x0006)

Description:

This property indicates the FlowControl to be used.

Type: Octet String

Characteristics: Read/Write

Defined in: LocalControl descriptor

Possible values:

This property indicates the H.245 FlowControlCommand structure encoded by applying the PER specified in ITU-T Rec. X.691. Value encoded as per A.5.1.2.

A.6.2 Events

None.

A.6.3 Signals

None.

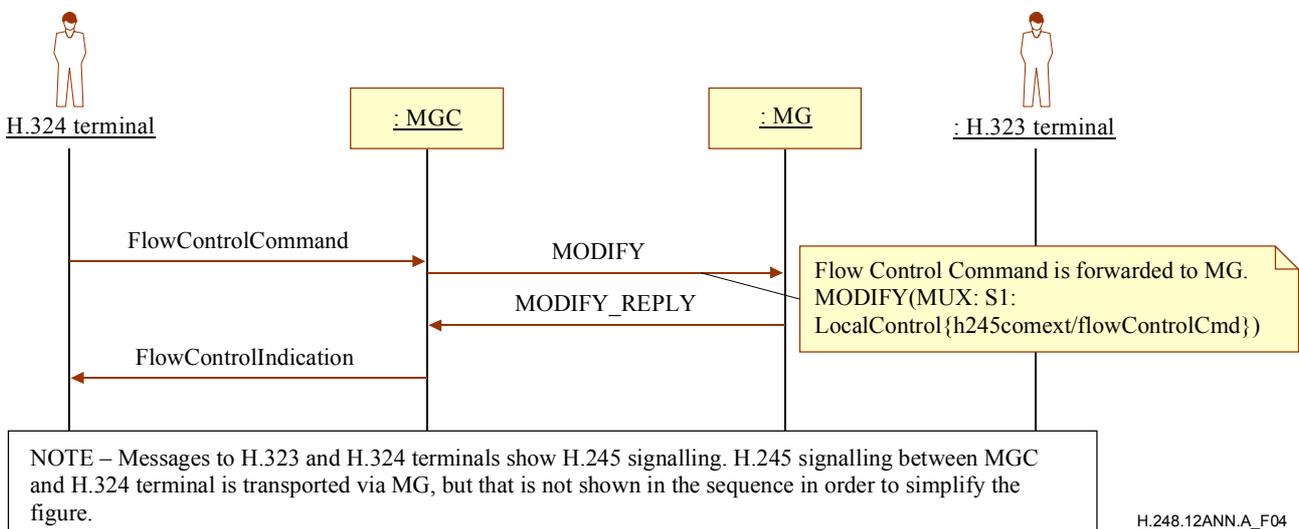
A.6.4 Statistics

None.

A.6.5 Procedures

These procedures are related to the scenario in which MGC executes H.245 control itself as shown in the Figure A.4 below.

The MGC may audit the H.245 version, which the MG supports, after a service change.



H.248.12ANN.A_F04

Figure A.4/H.248.12 – Sequence diagram for Flow Control Modification

When a remote H.324 or H.323 terminal wants to restrict the bit rate of a channel, or whole multiplex, and the MGC accepts the request, the MGC orders the MG to restrict the bit rate of the stream(s) as per Figure A.4.

A.7 Extended H.245 Indication Package

PackageID: h245indext, (0x0065)

Description:

The Extended H.245 Indication Package extends the H.245 Indication Package defined in ITU-T Rec. H.248.12. The package defines new properties for H.324 and H.323 interworking, which are needed when the interworking function is handled by the MGC.

Version: 1

Designed to be extended only:

No

Extends: h245ind (0x002e) Version 1

A.7.1 Properties

A.7.1.1 H.223 Skew Indication

PropertyID: h223SkewInd, (0x0003)

Description:

This property indicates the average skew which the transmitted video signal trails the audio signal.

Type: Octet String

Characteristics: Read/Write

Defined in: LocalControl

Possible values:

This property indicates the H.245 H223SkewIndication structure encoded by applying the PER specified in ITU-T Rec. X.691. Value encoded as per A.5.1.2.

A.7.1.2 Jitter Indication

PropertyID: jitterIndication, (0x0004)

Description: This property indicates the jitter.

Type: Octet String

Characteristics: Read/Write

Defined in: LocalControl descriptor

Possible values:

This property indicates the H.245 **JitterIndication** structure encoded by applying the PER specified in ITU-T Rec. X.691. Value encoded as per A.5.1.2.

A.7.2 Events

None.

A.7.3 Signals

None.

A.7.4 Statistics

None.

A.7.5 Procedures

These procedures are related to the scenario in which MGC executes H.245 control itself, as shown in the Figure A.5 below.

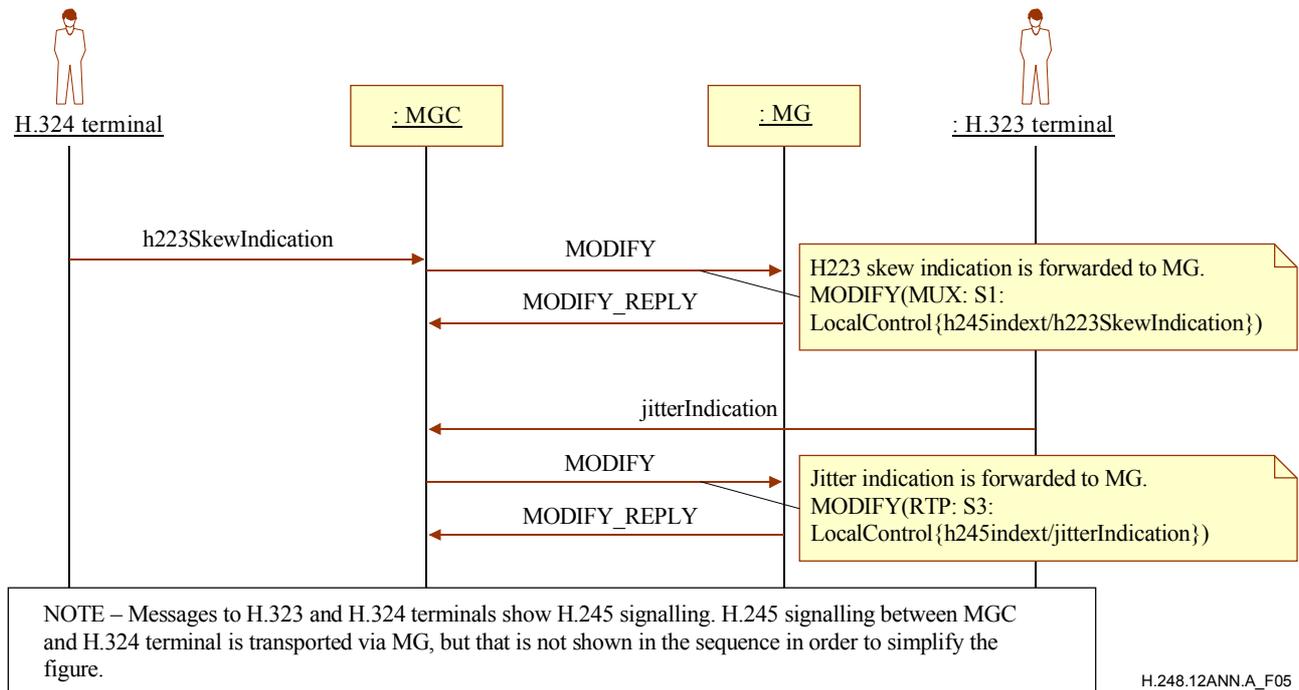


Figure A.5/H.248.12 – Sequence diagram for Skew and Jitter Indication

When a remote H.324 terminal indicates the average amount of skew between two logical channels, the MGC forwards the skew to the MG in order for the MG to take the skew into consideration at synchronization of the channels, or at packetization of the channels, into RTP as per Figure A.5.

At any time when the remote H.323 terminal indicates the amount of jitter in the received media, the MGC forwards the information to MG in order for the MG to choose the bit-rate and buffer control in video channels as per Figure A.5.

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