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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

Infrastructure of audiovisual services – Communication procedures

Gateway control protocol: Dialling method information packages

Recommendation ITU-T H.248.70

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Recommendation ITU-T H.248.70

Gateway control protocol: Dialling method information packages

Summary

Recommendation ITU-T H.248.70 defines three packages: dmi, xdmi and edmi, that extend the dd, xdd and edd packages, respectively. The new packages support a mechanism to provide information to the MGC regarding the dialling method (DTMF or decadic pulses) associated with the detected digit or digitmap.

Source

Recommendation ITU-T H.248.70 was approved on 16 March 2009 by ITU-T Study Group 16 (2009-2012) under Recommendation ITU-T A.8 procedure.

FOREWORD

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Gateway control protocol: Dialling method information packages

1 Scope

This Recommendation defines three packages: dmi, xdmi and edmi, that extend the dd, xdd and edd packages, respectively. The new packages support a mechanism to provide information to the MGC regarding the dialling method (DTMF or decadic pulses) associated with the detected digit or digitmap.

The DTMF detection packages dd, xdd and edd are commonly used to not only detect DTMF digits but also decadic pulsed (i.e., loop disconnect) digits.

Figure 1 shows an interworking scenario between legacy terminals and an H.323 network [b-ITU-T H.323].

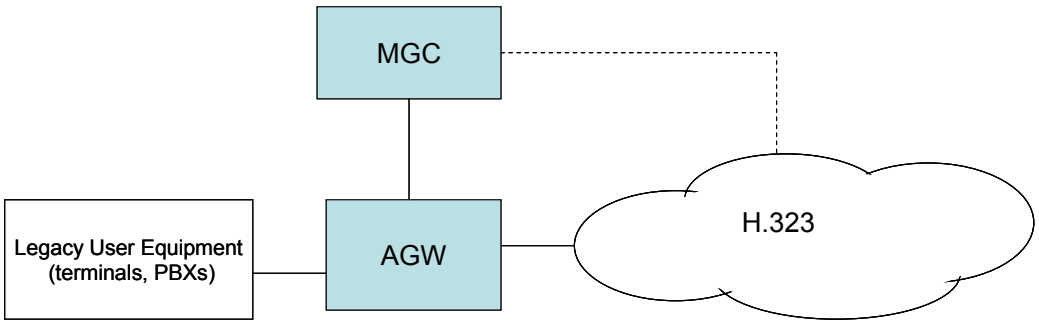

Figure 1 – Interworking between legacy equipment and a H.323 network [b-ITU-T H.323]

In the scenario of Figure 1, when a call is established and has reached the speech phase, the media gateway controller (MGC) may order the access gateway (AGW) to start DTMF detection (e.g., due to a H.323 application). This is in order to transfer "in-band" digits to the H.323 network. Digits can be conveyed in the control plane toward the H.323 network via the H.245 UserInputIndication message [b-ITU-T H.245].

In some scenarios, the dialling method by which the detected digit was generated is of relevance to the MGC.

For example:

If a DMTF digit 1 is received, the MG will report it correctly (i.e., with the dd/d1 event).

However, if loop disconnect (LD) dialling is used on the line, a problem may occur if the PSTN user signals a REGISTER RECALL pulsed signal to initiate an enquiry call. In some markets, the duration of the REGISTER RECALL pulsed signal overlaps with that of LD digit 1. Therefore, the AGW would report the signal as being "Digit 1" rather than RECALL/HOOKFLASH which results in incorrect call behaviour.

This Recommendation defines extension packages that allow a MGC to determine the dialling method associated with a detected digit.

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 H.248.1] Recommendation ITU-T H.248.1 (2005), *Gateway control protocol: Version 3*.

[ITU-T H.248.16] Recommendation ITU-T H.248.16 (2002), *Gateway control protocol: Enhanced digit collection packages and procedures*.

3 Definitions

None.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

AGW Access Gateway

DTMF Dual-Tone Multi-Frequency

LD Loop Disconnect

MG Media Gateway

MGC Media Gateway Controller

PBX Private Branch Exchange

PSTN Public Switched Telecommunications Network

5 Conventions

None.

6 Dialling method information package

Package Name: Digit Dialling Method Information

Package ID: dmi (0x00f2)

Description: This package defines an event parameter that may be used by all DTMF Detection Package events [ITU-T H.248.1]. This parameter allows the MGC to determine whether a detected digit reported by the MG was generated with DTMF or with decadic pulses (i.e., loop disconnect).

Version: 1

Extends: dd (0x0006) version 2

6.1 Properties

None.

6.2 Events

This package does not define any new event. The event parameter defined in this package can be used with any of the events of the base package i.e., *dmi/std, dmi/etd, dmi/ltd, dmi/d0, dmi/d1, dmi/d2, dmi/d3, dmi/d4, dmi/d5, dmi/d6, dmi/d7, dmi/d8, dmi/d9, dmi/da, dmi/db, dmi/dc, dmi/dd, dmi/ds, dmi/do, dmi/ce*.

6.2.1 EventsDescriptor parameters

6.2.1.1 Dialling method required

Parameter Name: Dialling Method Required

Parameter ID: dmr (0x00a0)

Description: Indicates that the MGC requires to be informed of the dialling type associated with the digits to be reported.

Type: Boolean

Optional: Yes

Possible values: "ON": Report dialling method.

"OFF": Do not report dialling method.

Default: "OFF"

6.2.2 ObservedEventsDescriptor parameters

6.2.2.1 Dialling method

Parameter Name: Dialling Method

Parameter ID: dm (0x00a0)

Description: Indicates the dialling method associated with the reported dialled digits.

Type: Enumeration

Optional: Yes

Possible values:

"DTMF"	(0x0001)	Digit was generated with DTMF.
"LD"	(0x0002)	Digit was generated with decadic pulses (i.e., loop disconnect).

Default: "DTMF"

6.3 Signals

None.

6.4 Statistics

None.

6.5 Error Codes

None.

6.6 Procedures

If the MGC wishes to be informed of the dialling method, it shall include the *Dialling Method Required* event parameter set to ON in any of the following events:

> *dmi/std, dmi/etd, dmi/ltd, dmi/d0, dmi/d1, dmi/d2, dmi/d3, dmi/d4, dmi/d5, dmi/d6, dmi/d7, dmi/d8, dmi/d9, dmi/da, dmi/db, dmi/dc, dmi/dd, dmi/ds, dmi/do, dmi/ce*.

If this event parameter is set to ON and the digit was dialled with decadic pulses, the MG shall include the *Dialling Method* parameter when notifying the event to the MGC. If the *Dialling Method Required* event parameter is set to ON and the digit was dialled with DTMF, the MG does not need to, but is allowed to, include the *Dialling Method* parameter when notifying the event to the MGC. If the *Dialling Method Required* event parameter is set to OFF or is not included, the MG shall not include the *Dialling Method* parameter when notifying the event to the MGC, regardless of which method the digit was dialled with.

On being informed of the type of digit transmission/detection, the MGC can correctly interpret the received digit based on the current call state.

7 Dial method information package for extended digitmap detection

Package Name: Digit Dialling Method Information for Extended Digitmap Detection

Package ID: xdmi (0x00f3)

Description: This package defines an event parameter that may be used by all the extended DTMF detection package events [ITU-T H.248.16]. This parameter allows the MGC to determine whether a detected digit reported by the MG was generated with DTMF or with decadic pulses (i.e., loop disconnect).

Version: 1

Extends: xdd (0x0052) version 1

7.1 Properties

None.

7.2 Events

This package does not define any new event. The event parameter defined in this package can be used with any of the events of the base package, i.e., *xdmi/std, xdmi/etd, xdmi/ltd, xdmi/d0, xdmi/d1, xdmi/d2, xdmi/d3, xdmi/d4, xdmi/d5, xdmi/d6, xdmi/d7, xdmi/d8, xdmi/d9, xdmi/da, xdmi/db, xdmi/dc, xdmi/dd, xdmi/ds, xdmi/do, xdmi/ce*, *xdmi/xce*.

7.2.1 EventsDescriptor parameters

7.2.1.1 Dialling method required

Parameter Name: Dialling Method Required

Parameter ID: dmr (0x00a0)

Description: Indicates that the MGC requires to be informed of the dialling method associated with the digits to be reported.

Type: Boolean

Optional: Yes

Possible values: "ON": Report dialling method.

"OFF": Do not report dialling method.

Default: "OFF"

7.2.2 ObservedEventsDescriptor parameters

7.2.2.1 Dialling method

Parameter Name: Dialling Method

Parameter ID: dm (0x00a0)

Description: Indicates the dialling method associated with the reported dialled digits.

Type: Enumeration

Optional: Yes

Possible values:	"DTMF" (0x0001)	Digit was generated with DTMF.
	"LD" (0x0002)	Digit was generated with decadic pulses (i.e., loop disconnect).

Default: "DTMF"

7.3 Signals

None.

7.4 Statistics

None.

7.5 Error Codes

None.

7.6 Procedures

If the MGC wishes to be informed of the dialling method, it shall include the *Dialling Method Required* event parameter set to ON in any of the following events:

> *xdmi/std, xdmi/etd, xdmi/ltd, xdmi/d0, xdmi/d1, xdmi/d2, xdmi/d3, xdmi/d4, xdmi/d5, xdmi/d6, xdmi/d7, xdmi/d8, xdmi/d9, xdmi/da, xdmi/db, xdmi/dc, xdmi/dd, xdmi/ds, xdmi/do, xdmi/ce, xdmi/xce*.

If this event parameter is set to ON and the digit was dialled with decadic pulses, the MG shall include the *Dialling Method* parameter when notifying the event to the MGC. If the *Dialling Method Required* event parameter is set to ON and the digit was dialled with DTMF, the MG does not need to, but is allowed to, include the *Dialling Method* parameter when notifying the event to the MGC. If the *Dialling Method Required* event parameter is set to OFF or is not included, the MG shall not include the *Dialling Method* parameter when notifying the event to the MGC, regardless of which method the digit was dialled with.

On being informed of the type of digit transmission/detection, the MGC can correctly interpret the received digit based on the current call state.

8 Dial method information package for enhanced digitmap detection

Package Name: Digit Dialling Method Information for Enhanced Digitmap Detection

Package ID: edmi (0x00f4)

Description: This package defines an event parameter that may be used by all the enhanced DTMF detection package events [ITU-T H.248.16]. This parameter allows the MGC to determine whether a detected digit reported by the MG was generated with DTMF or with decadic pulses, i.e., loop disconnect.

Version: 1

Extends: edd (0x0066) version 1

8.1 Properties

None.

8.2 Events

This package does not define any new event. The event parameter defined in this package can be used with any of the events of the base package i.e., *edmi/std, edmi/etd, edmi/ltd, edmi/d0, edmi/d1, edmi/d2, edmi/d3, edmi/d4, edmi/d5, edmi/d6, edmi/d7, edmi/d8, edmi/d9, edmi/da, edmi/db, edmi/dc, edmi/dd, edmi/ds, edmi/do, edmi/ce*, *edmi/xce, edmi/mce*.

8.2.1 EventsDescriptor parameters

8.2.1.1 Dialling method required

Parameter Name: Dialling Method Required

Parameter ID: dmr (0x00a0)

Description: Indicates that the MGC requires to be informed of the dialling method associated with the digits to be reported.

Type: Boolean

Optional: Yes

Possible values: "ON": Report dialling method.

"OFF": Do not report dialling method.

Default: "OFF"

8.2.2 ObservedEventsDescriptor parameters

8.2.2.1 Dialling method

Parameter Name: Dialling Method

Parameter ID: dm (0x00a0)

Description: Indicates the type of dialled digits that are being reported.

Type: Enumeration

Optional: Yes

Possible values:

"DTMF" (0x0001)	Digit was generated with DTMF.
"LD" (0x0002)	Digit was generated with decadic pulses (i.e., loop disconnect).

Default: "DTMF"

8.3 Signals

None.

8.4 Statistics

None.

8.5 Error Codes

None.

8.6 Procedures

If the MGC wishes to be informed of the dialling method, it shall include the *Dialling Method Required* event parameter set to ON in any of the following events:

> *edmi/std, edmi/etd, edmi/ltd, edmi/d0, edmi/d1, edmi/d2, edmi/d3, edmi/d4, edmi/d5, edmi/d6, edmi/d7, edmi/d8, edmi/d9, edmi/da, edmi/db, edmi/dc, edmi/dd, edmi/ds, edmi/do, edmi/ce, edmi/xce, edmi/mce*.

If this event parameter is set to ON and the digit was dialled with decadic pulses, the MG shall include the *Dialling Method* parameter when notifying the event to the MGC. If the *Dialling Method Required* event parameter is set to ON and the digit was dialled with DTMF, the MG does not need to, but is allowed to, include the *Dialling Method* parameter when notifying the event to the MGC. If the *Dialling Method Required* event parameter is set to OFF or is not included, the MG shall not include the *Dialling Method* parameter when notifying the event to the MGC, regardless of which method the digit was dialled with.

On being informed of the type of digit transmission/detection, the MGC can correctly interpret the received digit based on the current call state.

Bibliography

[b-ITU-T H.245] Recommendation ITU-T H.245 (2008), *Control protocol for multimedia communication*.

[b-ITU-T H.323] Recommendation ITU-T H.323 (2006), *Packet-based Multimedia communication systems*.

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