INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

G.726

Annex B

(07/2003)

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Digital terminal equipments – Coding of analogue signals by methods other than PCM

40, 32, 24, 16 kbit/s Adaptive Differential Pulse Code Modulation (ADPCM)

Annex B: Packet format, capability identifier and capability parameters for H.245 signalling

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ITU-T Recommendation G.726

40, 32, 24, 16 kbit/s Adaptive Differential Pulse Code Modulation (ADPCM)

Annex B

Packet format, capability identifier and capability parameters for H.245 signalling

Summary

This annex specifies the packet structure for the carriage of G.726 audio, along with the capability identifier and parameters for H.245, in order to use G.726 between multimedia communication systems that utilize H.245.

Source

Annex B to ITU-T Recommendation G.726 was approved by ITU-T Study Group 16 (2001-2004) under the ITU-T Recommendation A.8 procedure on 14 July 2003.

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.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure e.g. interoperability or applicability) and compliance with the Recommendation 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 Recommendation is required of any party.

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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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B.1 References

[1] ITU-T Recommendation H.225.0 (2003), *Call signalling protocols and media stream packetization for packet-based multimedia communication systems*.

[2] IETF RFC 3551, *RTP Profile for Audio and Video Conferences with Minimal Control*.

[3] ITU-T Recommendation I.366.2 (2000), *AAL type 2 service specific convergence sublayer for narrow-band services*.

B.2 Packet structure for G.726 frames

The G.726 ADPCM representation consists of a series of codewords with a one-to-one correspondence to the samples in the PCM stream. The G.726 data rates of 40, 32, 24, and 16 kbit/s have codewords of 5, 4, 3 and 2 bits respectively. Applications using this annex shall determine the encoding type of packed codewords from the RTP payload identifier.

There are two ways that a stream of G.726 codewords may be packed into octets; one defined by RFC 3551 for IP transport and the other by Annex E/I.366.2 for ATM AAL 2 transport. The bitOrder parameter is provided to signal which packetization is supported, and which is in use on an audio channel.

B.3 Codec reset

G.726 codecs shall be reset upon the start of any talk-spurt. If not explicitly signalled, talk-spurt starts may be detected by observation of time-stamps, sequence numbers or jitter-buffer status.

B.4 Capability identifier and parameters for use with ITU-T Rec. H.245

The **GenericCapability** is used in H.245 for the G.726 capability exchange.

Table B.1/G.726 – H.245 capability identifier for G.726

Capability name	ITU-T Recommendation G.726
Capability class	Audio
Capability identifier type	Standard
Capability identifier value	{ itu-t(0) recommendation(0) g(7) 726 generic-capabilities(1) version2003(0) }
MaxBitRate	In capabilities, this parameter shall not be used. In an OpenLogicalChannel, this field shall be set to a value of 400, 320, 240 or 160 representing operation of G.726 at 40, 32, 24 or 16 kbit/s.
NonCollapsingRaw	This field is not used
Transport	This field is not used

B.4.1 maxSamplesPerPacket parameter

Table B.2/G.726 – Maximum number of samples allowed in an RTP packet

Parameter name	maxSamplesPerPacket
Parameter description	This is a Collapsing GenericParameter. The value of maxSamplesPerPacket specifies the maximum number of encoded G.726 samples that may be included in a single RTP packet
Parameter identifier value	1
Parameter status	Mandatory
Parameter type	unsignedMin
Supercedes	This field is not used

B.4.2 bitOrder parameter

Table B.3/G.726 – Bit order

Parameter name	bitOrder
Parameter description	This is a collapsing GenericParameter. This parameter is a Boolean array. If bit 7 is 1, this indicates support of the bit order specified in RFC 3551. If bit 8 (least significant bit) is 1, this indicates support of the bit order specified in Annex E/I.366.2. All other bits are reserved and shall be set to 0. In a capability, for each bit set to 1, this means that the device supports the indicated bit order(s). In an OpenLogicalChannel message, only 1 bit shall be set, corresponding to the bit order used on the channel.
Parameter identifier value	2
Parameter status	Mandatory
Parameter type	BooleanArray
Supercedes	This field is not used

Terminals operating on ATM networks should encode in the order given in ITU-T Rec. I.366.2.

Terminals operating on IP networks should encode in the order given in RFC 3551.

All terminals should be capable of decoding either format.

Gateways may transcode the bit-order format.

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