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SERIES G: TRANSMISSION SYSTEMS AND MEDIA,
DIGITAL SYSTEMS AND NETWORKS

Digital terminal equipments – Principal characteristics of
transcoder and digital multiplication equipment

Digital circuit multiplication equipment using 8 kbit/s CS-ACELP

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FOREWORD

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DIGITAL CIRCUIT MULTIPLICATION EQUIPMENT USING 8 KBIT/S CS-ACELP

(Geneva, 2001)

Summary

This Recommendation specifies the elements of DCME using 8 kbit/s CS-ACELP, Digital Speech Interpolation (DSI) and Facsimile Demodulation/Remodulation in order to achieve interworking of such equipment. It specifies extensions and deviations for Recommendations G.763, G.766 and G.767 which specify a 32 kbit/s ADPCM DCME, and Facsimile Demodulation/Remodulation and 16 kbit/s LD-CELP DCME respectively.

1 Scope

This Recommendation specifies the elements of DCME using 8 kbit/s CS-ACELP, Digital Speech Interpolation (DSI) and facsimile demodulation/remodulation in order to achieve interworking of such equipment. It is an extension to ITU-T Recommendations G.763 (Digital Circuit Multiplication Equipment Using 32 kbit/s ADPCM and Digital Speech Interpolation) and G.766 (Facsimile Demodulation/Remodulation for DCME), as it specifies the deviations of the 8 kbit/s DCME from the G.763.

2 Reference

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; all 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 G.726, (12/90) - 40, 32, 24, 16 kbit/s Adaptive Differential Pulse Code Modulation (ADPCM)
- Annex J (09/99) to ITU-T Recommendation G.728 - Variable bit-rate operation of LD-CELP mainly for voiceband-data applications in DCME
- ITU-T Recommendation G.729 (03/96) - C source code and test vectors for implementation verification of the G.729 8 kbit/s CS-ACELP speech coder
- Annex D to (09/98) to ITU-T Recommendation G.729 - Coding of speech at 8 kbit/s using Conjugate Structure Algebraic-Code-Excited Linear-Prediction (CS-ACELP) Annex D: 6.4 kbit/s CS-ACELP speech coding algorithm
- ITU-T Recommendation G.763 (1998), *Digital circuit multiplication equipment using ADPCM (Recommendation G.726) and digital speech interpolation.*
- ITU-T Recommendation G.766 (1996), *Facsimile demodulation/remodulation for digital circuit multiplication equipment.*

- ITU-T Recommendation G.767 (10/98) - Digital circuit multiplication equipment using 16kbit/s LD-CELP, digital speech interpolation and facsimile demodulation/remodulation

3 Terms and Definitions

In addition to the terms and definitions of ITU-T Recommendations G.763 and G.766, the following list is used in this Recommendation:

3.1 Basic Control Channel (BCC)

A DCME Control Channel used for a pool with IT numbers less than or equal to 240. It can accommodate four assignment messages/frame.

3.2 Expanded Control Channel

A DCME Control Channel used for a pool with IT numbers more than 240. It can accommodate eight assignment messages/frame.

4 Abbreviations

In addition to the abbreviations and acronyms of ITU-T Recommendations G.763 and G.766, the following list is used in this Recommendation:

BCC	Basic Control Channel
ECC	Expanded Control Channel

5 DCME Frame Structure

5.1 General

5.1.1 Supported Services

The 8 kbit/s DCME frame structure accommodates the following services:

- 8 bit channels to support 64 kbit/s transparent of VBD calls,
- 1 bit channels to support voice calls at CS-ACELP 8 kbit/s and 6.4 kbit/s according to ITU-T Recommendation G.729 and its Annex D,
- 2 bit channels to support SS No. 5 Tone Signals at 16 kbit/s according to ITU-T Recommendation G.726,
- 5 bit channels to support VBD calls at 40 kbit/s according to ITU-T Recommendation G.728 and its Annex J,
- 4 bit channels to support fax banks carrying demodulated fax calls in the same manner as in ITU-T Recommendations G.763 and G.766,
- 4 bit channels to support bit banks carrying the fifth bits of 40 kbit/s channels for non-demodulated fax calls and voice band data calls,
- 8, 5 and 1 bit channels to support 64 kbit/s, 40 kbit/s, 8 kbit/s, and 6.4 kbits preassigned channels.