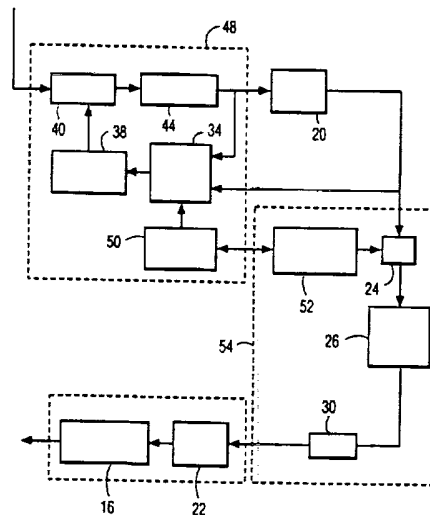




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(54) Title: AN ENCODER BUFFER HAVING AN EFFECTIVE SIZE WHICH VARIES AUTOMATICALLY WITH THE CHANNEL BIT-RATE



(57) Abstract

The effective (or logical) size of the encoder buffer in a video transmission system is varied with the transmission bit-rate. Also, a minimum fill level is maintained in the encoder buffer whenever the transmission rate is too high to assure otherwise that the decoder buffer will not overflow or underflow. The encoding rate is varied so as to maintain a fill level in the encoder buffer within limits. In the preferred embodiment, the logical encoder buffer has a size which is maintained at $R\Delta T(1-m_1)-M$, where R is the average transmission bit-rate, which may vary, ΔT is the fixed delay between the encoding and decoding processes for a transmitted video signal, $R(1-m_1)$ is the minimum instantaneous transmission rate that the communication system achieves at average rate R , and M is the maximum total buffer storage in the communication system. When the decoder buffer has a size less than $R\Delta T(1+m_2)$, where $R(1+m_2)$ is the maximum instantaneous transmission rate at average rate R , the encoder buffer fill level is maintained above a minimum level that is equal to the amount by which the decoder buffer is less than $R\Delta T(1+m_2)$.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB 95/00160

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: H04N 7/60, H04Q 11/04, H04L 12/56

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: H04L, H04N, H04Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY, Volume 2, No 4, December 1992, AMY R. REIBMAN et al, "Constraints on Variable Bit-Rate Video for ATM Networks", paragraph 3, page 362, column 1, paragraph 4B, paragraph 6A, page 369, column 1, line 21 - line 25	1, 2, 6-8, 10, 11, 13-15, 20
A	--	3-5, 9, 12, 16-19, 21-25
A	IEEE TRANSACTIONS ON COMMUNICATIONS, Volume 39, No 6, June 1991, JOEL ZDEPSKI et al, "Statistically Based Buffer Control Policies for Constant Rate Transmission of Compressed Digital Video" page 954, column 2, line 45 - page 955, column 1, line 32	1-25
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 Further documents are listed in the continuation of Box C. See patent family annex.

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Date of the actual completion of the international search

13 October 1995

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INTERNATIONAL SEARCH REPORT

International application No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 9303555 A1 (WASHINGTON UNIVERSITY), 18 February 1993 (18.02.93), page 25, line 28 - page 26, line 14; page 30, line 12 - line 31, abstract --	1-25
A	EP 0562221 A1 (ALCATEL N.V. ET AL), 29 Sept 1993 (29.09.93), abstract -----	1-25