



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification⁶:

H03M 7/30

A1

(11) International Publication Number:

✓WO 98/04045

(43) International Publication Date:

29 January 1998 (29.01.98)

(21) International Application Number: ✓PCT/US97/12943

(22) International Filing Date: ✓23 July 1997 (23.07.97)

(30) Priority Data:

✓60/023,094

✓24 July 1996 (24.07.96)

✓US

✓08/753,871

✓3 December 1996 (03.12.96)

✓US

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(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published

With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

9900250-3

19036 copy

(54) Title: DATA COMPRESSION AND DECOMPRESSION SYSTEM WITH IMMEDIATE DICTIONARY UPDATING INTERLEAVED WITH STRING SEARCH ✓

(57) Abstract

A dictionary based data compression and decompression system where, in the compressor (10), when a partial string W and a character C are matched in the dictionary (13), a new string is entered into the dictionary with C as an extension character on the string PW where P is the string corresponding to the last output compressed code signal. An update string is entered (113) into the compression dictionary for each input character that is read and matched. The updating is immediate and interleaved with the character-by-character matching of the current string. The update process continues until the longest match is found in the dictionary. The code of the longest matched string is output (106) in a string matching cycle. If a single character or multi-character string "A" exists in the dictionary, the string AAA...A is encoded in two compressed code signals regardless of the string length. This encoding results in an unrecognized code signal at the decompressor. The decompressor (40), in response to an unrecognized code signal, enters (Fig. 8) update strings into the decompressor dictionary (43) in accordance with the recovered string (161) corresponding to the previously received code signal, the unrecognized code signal, the extant code of the decompressor and the number (135) of characters in the previously recovered string.

