

(19)



(11)

EP 2 214 318 B8

(12)

CORRECTED EUROPEAN PATENT SPECIFICATION

(15) Correction information:

Corrected version no 1 (W1 B1)
Corrections, see
Bibliography INID code(s) 73

(51) Int Cl.:

H03M 13/11 (2006.01) **H03M 13/27** (2006.01)
H03M 13/35 (2006.01) **H04L 1/00** (2006.01)
H04L 27/34 (2006.01) **H04L 27/36** (2006.01)
H03M 13/03 (2006.01) **H03M 13/25** (2006.01)

(48) Corrigendum issued on:

13.12.2017 Bulletin 2017/50

(86) International application number:

PCT/JP2008/071312

(45) Date of publication and mention of the grant of the patent:

28.06.2017 Bulletin 2017/26

(87) International publication number:

WO 2009/069580 (04.06.2009 Gazette 2009/23)

(21) Application number: **08853412.8**

(22) Date of filing: **25.11.2008**

(54) **BIT PERMUTATION PATTERN FOR BICM WITH LDPC CODES OF RATE 2/3 AND 256QAM CONSTELLATIONS**

BITPERMUTATIONSMUSTER FÜR BICM MIT LDPC KODES DER RATE 2/3 UND 256QAM KONSTELLATIONEN

MOTIFS DE PERMUTATION DE BITS POUR BICM PAR DES CODES LDPC DE TAUX 2/3 AVEC DES CONSTELLATIONS 256QAM

(84) Designated Contracting States:

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR

Designated Extension States:
RS

- **YAMAMOTO, Makiko**
Tokyo 108-0075 (JP)
- **OKADA, Satoshi**
Tokyo 108-0075 (JP)
- **IKEGAYA, Ryoji**
Tokyo 108-0075 (JP)

(30) Priority: **26.11.2007 JP 2007304689**

26.11.2007 JP 2007304690

18.03.2008 JP 2008070467

18.11.2008 PCT/JP2008/070960

(74) Representative: **D Young & Co LLP**

120 Holborn
London EC1N 2DY (GB)

(43) Date of publication of application:

04.08.2010 Bulletin 2010/31

(56) References cited:

JP-A- 2008 263 566

(60) Divisional application:

15163589.3 / 2 924 882

• **DVB ORGANIZATION:**

"tm3980r1.DVB-T2.V0.5.6.pdf", DVB, DIGITAL VIDEO BROADCASTING, C/O EBU - 17A ANCIENNE ROUTE - CH-1218 GRAND SACONNEX, GENEVA - SWITZERLAND, 17 March 2008 (2008-03-17), XP017802196,

(73) Proprietor: **Saturn Licensing LLC**

New York (US)

(72) Inventors:

- **YOKOKAWA, Takashi**
Tokyo 108-0075 (JP)

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

EP 2 214 318 B8

- **TAKASHIYOKOKAWA ET AL:** "Parity and column twist bit interleaver for DVB-T2 LDPC codes", **PROC. 5TH INTERNATIONAL SYMPOSIUM ON TURBO CODES AND RELATED TOPICS, IEEE, PISCATAWAY, NJ, USA, 1 September 2008 (2008-09-01), pages 123-127, XP031353674, DOI: 10.1109/TURBOCODING.2008.4658684 ISBN: 978-1-4244-2862-5**
- **DVB ORGANIZATION:** "T2_0195 Cft response Rai-reply.pdf", **DVB, DIGITAL VIDEO BROADCASTING, C/O EBU - 17A ANCIENNE ROUTE - CH-1218 GRAND SACONNEX, GENEVA - SWITZERLAND, 4 June 2007 (2007-06-04), XP017817438,**
- **DVB ORGANIZATION:** "BitInt.SamsungM&I012.pdf", **DVB, DIGITAL VIDEO BROADCASTING, C/O EBU - 17A ANCIENNE ROUTE - CH-1218 GRAND SACONNEX, GENEVA - SWITZERLAND, 15 September 2007 (2007-09-15), XP017817137,**
- **"Digital Video Broadcasting (DVB); Second generation framing structure, channel coding and modulation systems for Broadcasting, Interactive Services, News Gathering and other broadband satellite applications European Broadcasting Union Union Européenne de Radio-Télévision EBUÛER; ETSI EN 302 307", IEEE, LIS, SOPHIA ANTIPOLIS CEDEX, FRANCE, vol. BC, no. V1.1.2, 1 June 2006 (2006-06-01), XP014034070, ISSN: 0000-0001**
- **LI Y ET AL:** "BIT-RELIABILITY MAPPING IN LDPC-CODED MODULATION SYSTEMS", **IEEE COMMUNICATIONS LETTERS, IEEE SERVICE CENTER, PISCATAWAY, NJ, US, vol. 9, no. 1, 1 January 2005 (2005-01-01) , pages 1-03, XP001211457, ISSN: 1089-7798, DOI: 10.1109/LCOMM.2005.1375222**
- **DVB ORGANIZATION:** "t2_0455r4_en_302755v010101_0.2_clean.doc" , **DVB, DIGITAL VIDEO BROADCASTING, C/O EBU - 17A ANCIENNE ROUTE - CH-1218 GRAND SACONNEX, GENEVA - SWITZERLAND, 20 February 2009 (2009-02-20), XP017817954,**
- **LE GOFF, S.Y.:** 'Signal constellations for bit-interleaved coded modulation' **INFORMATION THEORY, IEEE TRANSACTIONS ON vol. 49, no. ISS..., January 2003, pages 307 - 313, XP011074657**
- **MADDOCK, R.D. ET AL.:** 'Reliability-based coded modulation with low-density parity-check codes' **COMMUNICATIONS, IEEE TRANSACTIONS ON vol. 54, no. ISS..., March 2006, pages 403 - 406, XP002507532**