(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
13 September 2012 (13.09.2012)

WIPO | PCT

(10) International Publication Number
WO 2012/122558 A3

(51) International Patent Classification:
G06F 12/06 (2006.01) *G06F 11/10* (2006.01)
G06F 12/16 (2006.01)

(21) International Application Number:
PCT/US2012/028657

(22) International Filing Date:
10 March 2012 (10.03.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/451,139 10 March 2011 (10.03.2011) US
13/416,027 9 March 2012 (09.03.2012) US

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: PROGRAMMABLE DATA STORAGE MANAGEMENT

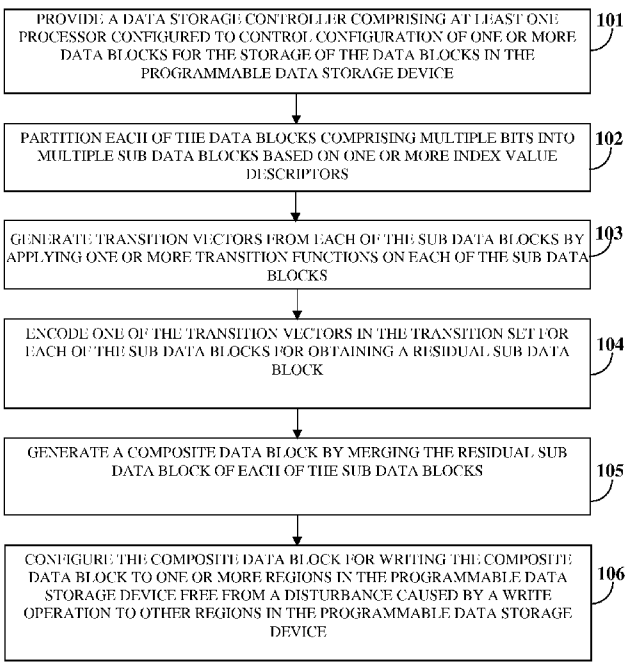

FIG. 1

(57) Abstract: A method and system for managing storage of one or more data blocks in a programmable data storage device is provided. A data storage controller partitions each of multiple data blocks into multiple sub data blocks comprising a number of bits based on one or more index value descriptors. The data storage controller generates transition vectors from each of the sub data blocks by applying one or more transition functions. The data storage controller encodes one of the transition vectors for each sub data block for obtaining a residual sub data block comprising a reduced number of bits, thereby resulting in increased bit space. The data storage controller generates a composite data block by merging each residual sub data block. The composite data block is configurable for writing to one or more regions in the programmable data storage device free from a disturbance caused by write operations to other regions.

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Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv))*

Published:

— *with international search report (Art. 21(3))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) Date of publication of the international search report:
27 December 2012

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/028657

A. CLASSIFICATION OF SUBJECT MATTER

G06F 12/06(2006.01)i, G06F 12/16(2006.01)i, G06F 11/10(2006.01)i

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)

G06F 12/06; G06F 11/10; G06F 12/14; G06F 21/02; G06F 1/00; G11C 29/52

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

Korean utility models and applications for utility models
Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: programmable data storage management, partitioning, data blocks, index value descriptors, transition vectors, encoding, residual sub data block, parity bits, error correction bits

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2009-064794 A2 (MCM PORTFOLIO LLC) 22 May 2009 See the abstract, pages 9-11, claims 1-3, 11-17, and figures 1-6.	1-36
A	US 2010-0095186 A1 (WEINGARTEN HANAN) 15 April 2010 See the abstract, paras.[0044]-[0056], claims 1,9,10, and figures 1,6-8.	1-36
A	KR 10-2009-0080032 A (MCM PORTFOLIO LLC) 23 July 2009 See the abstract, paras.[0040]-[0046], claims 1,3, and figures 1-5.	1-36
A	WO 2005-006197 A2 (INTEL CORP.) 20 January 2005 See the abstract, claims 1,2 and figures 1-5.	1-36

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:
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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents,such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
23 OCTOBER 2012 (23.10.2012)	**23 OCTOBER 2012 (23.10.2012)**

Name and mailing address of the ISA/KR

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Facsimile No. 82-42-472-7140

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2012/028657

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