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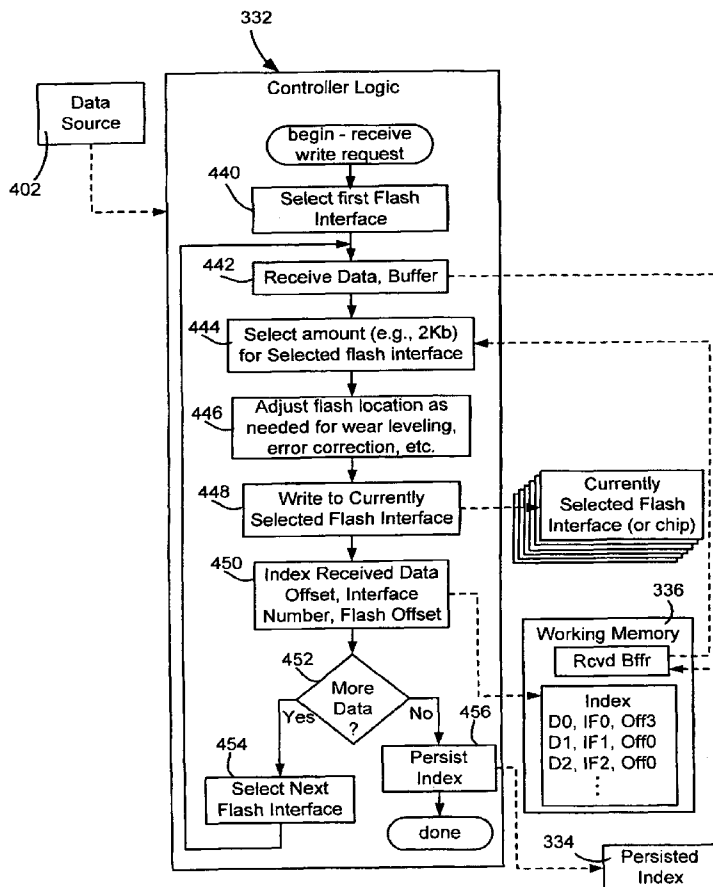
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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

[Continued on next page]

(54) Title: HIGH SPEED NONVOLATILE MEMORY DEVICE



(57) Abstract: Described is a high speed nonvolatile memory device and technology that includes a controller coupled via interfaces to sets of nonvolatile storage, such as separate flash memory chips or separate regions of a single chip. The controller includes logic that processes write requests of arbitrary size, by interleaving writes among the interfaces, including by parallel writing among the interfaces. For example, the data may be received via direct memory access (DMA) transfers. The controller maintains information to allow the interleaved data to be reassembled into its correct relative locations when read back, such as by DMA. The high speed nonvolatile memory device thus provides a hardware device, and software solution that allows a personal computer to rapidly boot or resume from a reduced power state such as hibernation. The high speed nonvolatile memory device also may be used for other data storage purposes, such as caching and file storage.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2007/013072**A. CLASSIFICATION OF SUBJECT MATTER***G06F 13/28(2006.01)i, G06F 13/16(2006.01)i, G06F 13/40(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)

IPC 8 : G06F

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 since 1975
Japanese Utility models and applications for Utility models since 1975

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

eKIPASS(KIPO internal) "hibernate", "state", "standby", "fast", "boot", "resume", "parallel", "read", "write", "flash", "nonvolatile",
"memory"**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6694451 B2(LEE W. ATKINSON) 17 February 2004 See abstract; figures 1-6.	1-19
A	US 20050228964 A1(STUART SECHREST et al.) 13 October 2005 See column 1, lines 41-62; figures 1,3.	1-19
A	US 5758174 A(DWAYNE THOMAS CRUMP et al.) 26 May 1998 See claims 1-22.	1-19
A	US 20050038981 A1(PATRICK L. CONNOR et al.) 17 February 2005 See abstract; figures 5-6.	1-19

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

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Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6694451 B2	17.02.2004	US 2002073358 A1	13.06.2002
US 20050228964 A1	13.10.2005	US 7185155 B2	27.02.2007
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US 20050038981 A1	17.02.2005	US 7181609 B2	20.02.2007