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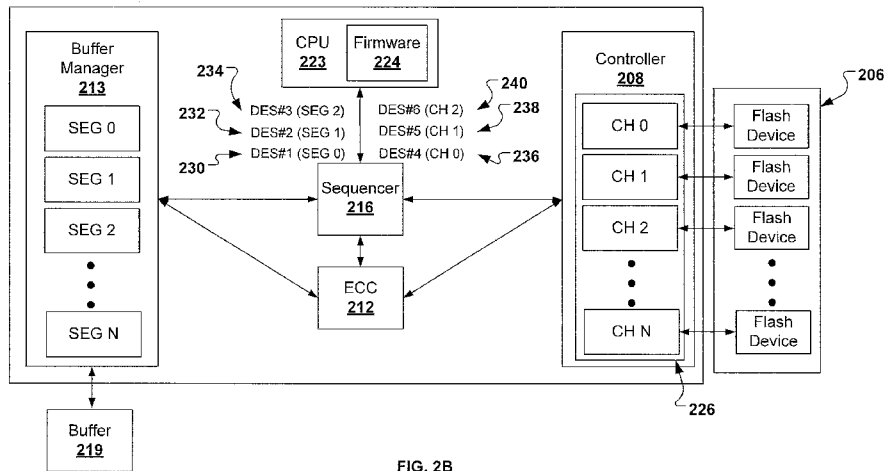


FIG. 2B

(57) Abstract: Methods, systems and computer program products for providing a sequencer that schedules job descriptors are described. The sequencer can manage the scheduling of the job descriptors for execution based on the availability of their respective segments and channels. For example, the sequencer can check the status of the segments, and identify one or more segments that are in busy or full state, or one or more segments that are in non-busy or empty state. Based on the status check, the sequencer can execute job descriptors out of order, and in particular, give priorities to job descriptors whose associated segments are available over job descriptors whose associated segments are in busy or full state. In doing so, pending job descriptors can be processed quicker and unnecessary latency can be avoided.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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ADD.
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B. FIELDS SEARCHED
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G06F

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)
EPO-Internal, COMPENDEX, INSPEC, IBM-TDB, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2009/077305 A1 (SHIN HYUNSUK [US] ET AL) 19 March 2009 (2009-03-19) paragraphs [0005] - [0015], [0051], [0054] - [0072], [0263] - [0305]; figures 1A, 2A, 3, 25-27	1-21
Y	US 2010/058003 A1 (GOTO AKIO [JP] ET AL) 4 March 2010 (2010-03-04) paragraphs [0004] - [0023], [0035] - [0057]; figure 1A	1-21
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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.
Y	WO 2005/098623 A2 (EMULEX DESIGN & MFG CORP [US]; JONES MARC TIMOTHY [US]; NOTTBERG CURTI) 20 October 2005 (2005-10-20) page 1, line 14 - page 7, line 14 page 8, lines 19-29 page 9, line 30 - page 11, line 20; figures 1,2,4 -----	1-21
Y	US 2010/043009 A1 (MARCHAND BENOIT [CA]) 18 February 2010 (2010-02-18) paragraphs [0006] - [0012], [0014], [0015], [0031], [0032], [0034], [0038], [0039], [0045] - [0049] -----	1-21
Y	WO 00/28418 A1 (INTEL CORP [US]) 18 May 2000 (2000-05-18) page 3, lines 2-13 page 5, line 15 - page 6, line 29 page 9, lines 5-18 page 11, lines 6-10; figure 2A -----	1-21
A	US 2009/089492 A1 (YOON TONY [US] ET AL) 2 April 2009 (2009-04-02) paragraphs [0021], [0030], [0031], [0051] - [0054]; figures 1,3 -----	1-21

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2011/065913

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
US 2009077305	A1	19-03-2009	KR 20100072263 A TW 200928758 A US 2009077305 A1 WO 2009039222 A2	30-06-2010 01-07-2009 19-03-2009 26-03-2009

US 2010058003	A1	04-03-2010	EP 2347417 A1 JP 2012502332 A KR 20110069049 A TW 201019111 A US 2010058003 A1 WO 2010027983 A1	27-07-2011 26-01-2012 22-06-2011 16-05-2010 04-03-2010 11-03-2010

WO 2005098623	A2	20-10-2005	US 2005240924 A1 WO 2005098623 A2	27-10-2005 20-10-2005

US 2010043009	A1	18-02-2010	NONE	

WO 0028418	A1	18-05-2000	AU 5902299 A DE 19983709 B4 DE 19983709 T1 GB 2358939 A HK 1036860 A1 JP 2002529850 A JP 2010044784 A JP 2011044165 A TW 511034 B WO 0028418 A1	29-05-2000 22-02-2007 14-02-2002 08-08-2001 05-12-2003 10-09-2002 25-02-2010 03-03-2011 21-11-2002 18-05-2000

US 2009089492	A1	02-04-2009	TW 200935436 A US 2009089492 A1 WO 2009046115 A1	16-08-2009 02-04-2009 09-04-2009
