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Declarations under Rule 4.17:

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

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(54) Title: TRANSPORTATION SCHEDULING SYSTEM AND METHOD

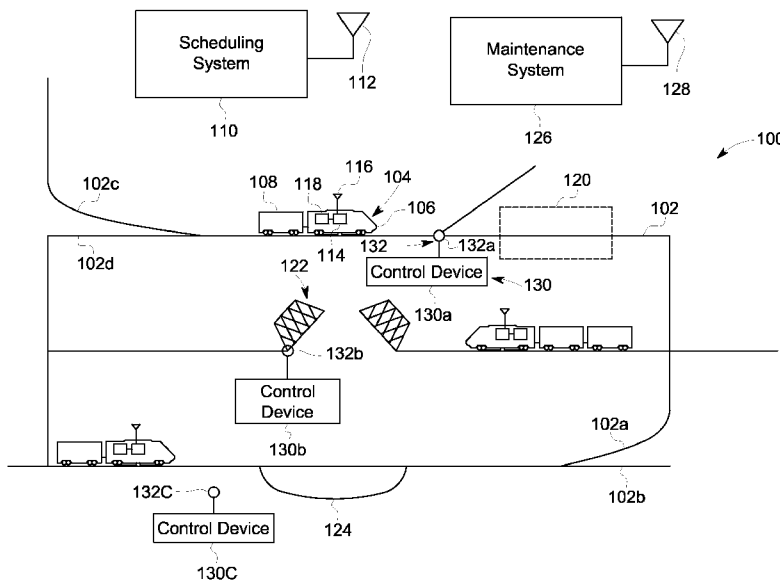


FIG. 1

(57) Abstract: A system includes an energy module and a scheduling module. The energy module is configured to determine a first consumption parameter representative of a first amount of energy that is projected to be expended by a first vehicle during an upcoming movement event involving the first vehicle. The energy module is configured to determine the first consumption parameter as the first vehicle moves along a route toward a destination location and prior to the first vehicle taking part in the upcoming movement event. The scheduling module is configured to receive the first consumption parameter from the energy module and to at least one of create or modify a first schedule for the first vehicle to move along the route based on the first consumption parameter.





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A. CLASSIFICATION OF SUBJECT MATTER**B61L 27/00(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)

B61L 27/00; G05D 1/10; F02D 45/00; G07C 5/00; G05D 1/02; G06F 7/00; G01M 13/26; G06G 7/70

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: vehicle, energy, consumption, parameter, schedule, control, route, travel, and similar terms

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004-0133315 A1 (AJITH K. KUMAR et al.) 08 July 2004 See paragraphs [0050]-[0053], [0066]; figures 7, 8, 11; and claims 63-67.	1-28
A	US 2008-0319618 A1 (JOAKIM SJOGREN et al.) 25 December 2008 See paragraphs [0037]-[0046]; and figure 3.	1-28
A	US 2007-0256481 A1 (YOSHITAKA NISHIYAMA et al.) 08 November 2007 See paragraphs [0071]-[0079]; and figure 7.	1-28
A	WO 2007-139491 A1 (SCANIA CV AB) 06 December 2007 See pages 9-13; and figures 2a, 2b.	1-28
A	US 5916298 A (HUGO KROISS et al.) 29 June 1999 See column 5, line 66 - column 6, line 49; and figure 7.	1-28

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

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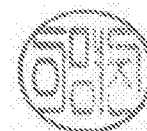
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date		
US 2004-0133315 A1	08/07/2004	AU 2004-305456 A1	07/07/2005		
		AU 2004-305456 B2	26/08/2010		
		CA 2454739 A1	06/07/2004		
		CA 2454739 C	13/09/2011		
		CN 1906074 A	31/01/2007		
		CN 1906074 B	02/03/2011		
		EP 1697196 A1	06/09/2006		
		EP 1697196 B1	17/12/2008		
		MX PA06006844 A	23/08/2006		
		PI 0416721 A	16/01/2007		
		RU 2006-125429 A	27/01/2008		
		RU 2359857 C2	27/06/2009		
		US 8538611 B2	17/09/2013		
		WO 2005-061300 A1	07/07/2005		
		ZA 200605430 A	30/04/2008		
		US 2008-0319618 A1	25/12/2008	EP 1989423 A1	12/11/2008
				WO 2007-097665 A1	30/08/2007
US 2007-0256481 A1	08/11/2007	CN 101002012 A	18/07/2007		
		CN 101002012 B	15/12/2010		
		EP 1780393 A1	02/05/2007		
		EP 1780393 A4	03/11/2010		
		EP 1780393 B1	16/11/2011		
		JP 04353475 B2	28/10/2009		
		JP 04353476 B2	28/10/2009		
		JP 2006-057483 A	02/03/2006		
		JP 2006-057484 A	02/03/2006		
		US 07454962 B2	25/11/2008		
		WO 2006-018944 A1	23/02/2006		
WO 2007-139491 A1	06/12/2007	CN 101490719 A	22/07/2009		
		CN 101490719 B	16/11/2011		
		PI 0712815 A2	23/10/2012		
		RU 2008-151771 A	10/07/2010		
		RU 2436163 C2	10/12/2011		
		SE 0601174 A	27/11/2007		
		SE 531526 C2	12/05/2009		
US 5916298 A	29/06/1999	CA 2221768 C	09/08/2005		
		EP 0828996 A1	19/03/2003		
		JP 11-507134 A	22/06/1999		
		KR 10-0474796 B1	27/06/2005		
		WO 1997-036152 A1	02/10/1997		