



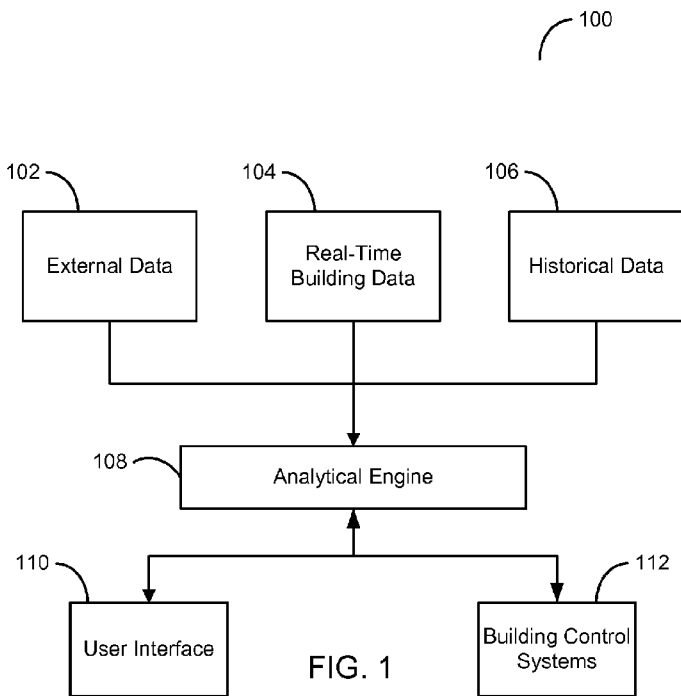
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(54) Title: SYSTEMS AND METHODS FOR OPTIMIZING ENERGY AND RESOURCE MANAGEMENT FOR BUILDING SYSTEMS



(57) Abstract: The present invention provides a method and system for optimizing building energy usage. The method comprising receiving a plurality of input values associated with a building or plurality of buildings. The method then constructs a thermal and an electrical load model based on the inputs and constructs an overall energy model, the overall energy model being based on the thermal and electrical load models. The method next generates a plurality of demand models and optimizes the demand models using complex multivariate optimization techniques, wherein optimizing is based on usage data and energy rules. Finally, the method displays recommendations based on the optimized model or generating real-time, complementary control instructions based on the optimized model, the determination based on client preferences.

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A. CLASSIFICATION OF SUBJECT MATTER**G06Q 50/10(2012.01)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)

G06Q 50/10; G06Q 50/10D0; G06Q 50/00; G05D 23/19; G05B 19/04

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), google, & Keywords: building, factory, facility, energy, electric, thermal, intelligen*, optimiz*, optimal, optimum, manag*

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 7894943 B2 (SLOUP, CHARLES J. et al.) 22 February 2011 See the abstract; figures 1-5; column 4 line 47 - column 11 line 25; and claims 1-11.	1-20
A	KR 10-2010-0117409 A (SUNGKYUNKWAN UNIVERSITY FOUNDATION FOR CORPORATE) 03 November 2010 See the abstract; figures 1-5; paragraphs 89-200; and claims 1-18.	1-20
A	KR 10-2010-0089594 A (HANMI PARSONS. CO., LTD. et al.) 12 August 2010 See the abstract; figures 1-8c; paragraphs 12-36; and claims 1-5.	1-20
A	KR 10-2010-0128876 A (HANMI PARSONS. CO., LTD.) 08 December 2010 See the abstract; figures 1-16; paragraphs 14-74; and claims 1-12.	1-20
A	DOUKAS, HARIS et al. "Intelligent building energy management system using rule sets," Building and Environment, vol. 42, no. 10, pp. 3562-3569, October 2007 See the abstract; figures 1-3; and pages 3562-3566, 3568.	1-20

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

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 7894943 B2	22.02.2011	US 2007-0005191 A1 WO 2008-100241 A2 WO 2008-100241 A3	04.01.2007 21.08.2008 21.08.2008
KR 10-2010-0117409 A	03.11.2010	None	
KR 10-2010-0089594 A	12.08.2010	None	
KR 10-2010-0128876 A	08.12.2010	None	