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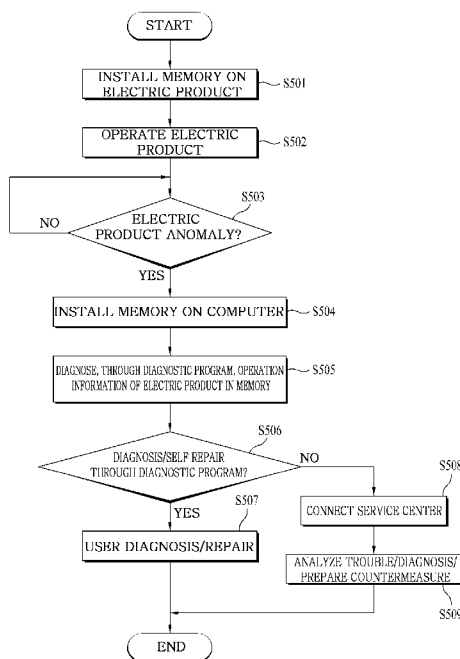
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[Continued on next page]

(54) Title: NETWORK SYSTEM AND METHOD OF CONTROLLING THE SAME

[Fig. 5]



(57) Abstract: Provided is a network system including an advanced metering infrastructure, an energy management system, a computer, and a diagnostic program. The advanced metering infrastructure interactively communicates with a power supply source and measures energy from the power supply source. The energy management system is connected to the advanced metering infrastructure to communicate with it and controls an operation of an electric product based on operation information of the electric product or energy information from the power supply source. The computer is connected to the electric product or energy management system to communicate with the electric product or energy management system. The diagnostic program is performed by the energy management system or computer and diagnoses a trouble of the electric product. An electric product having a trouble is remotely diagnosed to provide a quick countermeasure, thereby detecting the cause of the trouble without a service engineer and improving a user's convenience.





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A. CLASSIFICATION OF SUBJECT MATTER		
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B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) H02J 13/00; H01J 40/00; G06F 17/60; G05B 19/18; F25B 49/00		
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: energy management, anomaly, fault, diagnosis, service provider		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2005-0034023 A1 (MATURANA FRANCISCO P. et al.) 10 February 2005 See the abstract; claims 1, 20-21, 25; figure 1.	1-16
Y	US 2002-0000092 A1 (JOHN N. SHAROOD et al.) 03 January 2002 See the abstract; paragraphs [0067], [0174]; claim 1.	1-16
A	US 5875430 A (KOETHER; BERNARD G.) 23 February 1999 See the abstract; figures 7-8.	1-16
A	US 2002-0116342 A1 (YASUHIRO HIRANO et al.) 22 August 2002 See the abstract; paragraph [0005].	1-16
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified) "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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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 2005-0034023 A1	10.02.2005	EP 1577724 A2	21.09.2005		
		EP 1577724 A3	16.01.2008		
		EP 1577724 B1	07.10.2009		
		EP 1580630 A2	28.09.2005		
		EP 1580630 A3	24.10.2007		
		EP 1580630 B1	14.10.2009		
		EP 1580631 A2	28.09.2005		
		EP 1580631 A3	07.11.2007		
		EP 1580631 B1	10.03.2010		
		EP 1591852 A2	02.11.2005		
		EP 1591852 A3	04.01.2006		
		EP 1603064 A1	07.12.2005		
		EP 1662391 A2	31.05.2006		
		EP 1662391 A3	26.12.2007		
		US 2004-0204772 A1	14.10.2004		
		US 2004-0204784 A1	14.10.2004		
		US 2004-0205412 A1	14.10.2004		
		US 2004-0217654 A1	04.11.2004		
		US 2004-0250168 A1	09.12.2004		
		US 2004-0268186 A1	30.12.2004		
		US 2005-0108453 A1	19.05.2005		
		US 7146232 B2	05.12.2006		
		US 7203575 B2	10.04.2007		
		US 7228187 B2	05.06.2007		
		US 7266426 B2	04.09.2007		
		US 7305272 B2	04.12.2007		
		US 7640291 B2	29.12.2009		
		US 2002-0000092 A1	03.01.2002	AU 2001-26330 A1	24.07.2001
				US 2001-0025349 A1	27.09.2001
				US 2001-0048030 A1	06.12.2001
				US 2002-000092 A1	03.01.2002
				US 2002-0022991 A1	21.02.2002
				US 2008-040272 A1	14.02.2008
US 6453687 B2	24.09.2002				
US 6934862 B2	23.08.2005				
WO 01-52478 A2	19.07.2001				
WO 01-52478 A3	19.07.2001				
US 5875430 A	23.02.1999			AU 2002-324890 B2	01.03.2007
		CA 2253261 A1	06.11.1997		
		CA 2253261 C	11.07.2000		
		CA 2459959 A1	13.03.2003		
		CN 101902373 A	01.12.2010		
		CN 1103153 C	12.03.2003		
		CN 1220751 A	23.06.1999		
		CN 1220751 C0	23.06.1999		
		CN 1698053 A	16.11.2005		
		CN 1698053 C0	16.11.2005		

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR2010/007231

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		CN 1940986 A	04.04.2007
		CN 1940986 C0	04.04.2007
		EP 0896695 A2	10.03.2004
		EP 1468384 A2	20.10.2004
		EP 1758056 A2	28.02.2007
		EP 1758056 A3	16.05.2007
		JP 2005-502112 A	20.01.2005
		JP 2009-076095 A	09.04.2009
		KR 10-0926594 B1	11.11.2009
		KR 10-0984233 B1	28.09.2010
		KR 10-2009-0030336 A	24.03.2009
		US 2002-0082924 A1	27.06.2002
		US 2005-0251450 A1	10.11.2005
		US 7877291 B2	25.01.2011
		WO 03-021399 A2	13.03.2003
		WO 03-021399 A3	13.03.2003
		WO 97-41392 A2	06.11.1997
US 2002-0116342 A1	22.08.2002	JP 2002-245235 A	30.08.2002