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Kalantar et al.

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(54) **METHOD AND APPARATUS FOR WORK MANAGEMENT FOR FACILITY MAINTENANCE**

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(51) **Int. Cl.**^{7} **G06E 1/00**; G06E 3/00; G06G 7/00; G06F 15/18; G06F 17/00

(52) **U.S. Cl.** **705/50**; 705/7; 705/8

(58) **Field of Search** 706/50; 705/7, 705/8; 715/751

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,852,001 A		7/1989	Tsushima et al.
4,896,269 A		1/1990	Tong
5,111,391 A	*	5/1992	Fields et al. 705/9
5,343,387 A	*	8/1994	Honma et al. 705/9
5,557,515 A		9/1996	Abbruzzese et al.
5,767,848 A	*	6/1998	Matsuzaki et al. 715/751
5,819,263 A		10/1998	Bromley et al.
5,848,395 A		12/1998	Edgar et al.
5,867,823 A	*	2/1999	Richardson 705/9
5,890,133 A		3/1999	Ernst
5,893,906 A		4/1999	Daffin et al.
5,907,829 A		5/1999	Kida
5,923,552 A		7/1999	Brown et al.

(Continued)

OTHER PUBLICATIONS

Bailey et al., "Preparing the Information Technology Workforce for the New Millenium," *ACM SIGCPR Computer Personnel*, 20 (4), pp. 4–15 (Oct. 1999).

(Continued)

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(57) **ABSTRACT**

A system and method are shown for work management for facility maintenance. The system includes a central management server configured to receive a first set of information including tasks to be performed at a first facility and to generate a first work schedule for a first user selected to perform the first work schedule at the first facility. The system further includes a first client device at the first facility, where the first client device is configured to receive the first work schedule from the central management server and display the first work schedule to the first user via an electronic management interface. The electronic interface is further configured to receive task completion data from the first user and send the data to the central management server. When the central management server receives the task completion data, the central management server is configured to update a status of the work schedule based upon the task completion data received from the first user.

62 Claims, 33 Drawing Sheets

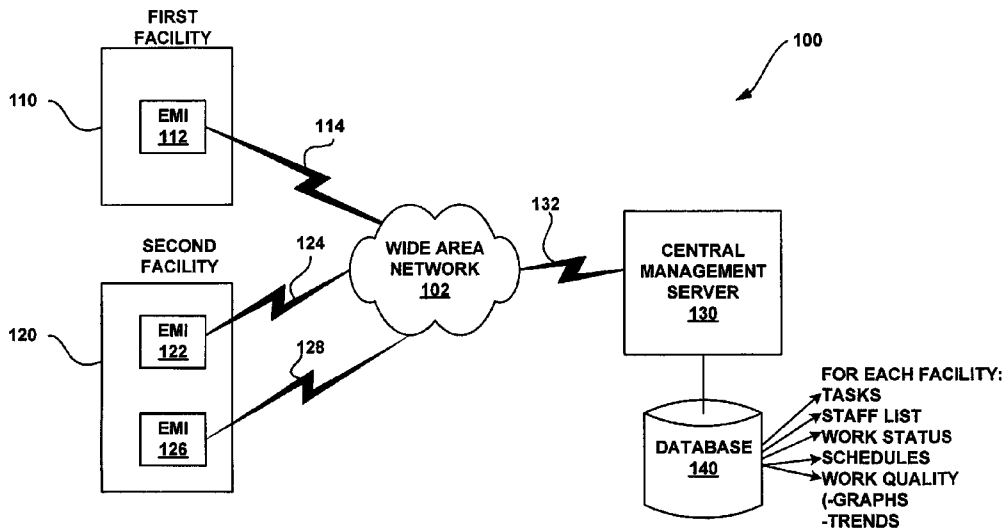U.S. PATENT DOCUMENTS

5,963,911	A	10/1999	Walker et al.
6,006,195	A	12/1999	Marchak et al.
6,006,215	A	12/1999	Retallick
6,073,109	A	6/2000	Flores et al.
6,134,557	A	10/2000	Freeman
6,138,104	A	10/2000	Marchak et al.
6,151,583	A	11/2000	Ohmura et al.
6,157,915	A	12/2000	Bhaskaran et al.
6,263,313	B1	7/2001	Milsted et al.
6,345,256	B1	2/2002	Milsted et al.
6,389,403	B1	5/2002	Dorak, Jr.
6,389,538	B1	5/2002	Gruse et al.
6,398,245	B1	6/2002	Gruse et al.
6,418,421	B1	7/2002	Hurtado et al.
6,578,005	B1 *	6/2003	Lesaint et al. 705/8
2001/0042001	A1 *	11/2001	Goto et al. 705/9

OTHER PUBLICATIONS

Martin, "Training Help Desk Students: The Never Ending Task," User Services Conference, *Proceeding of the 27th Annual ACM SIGUCCS Conference on User Services: Mile High Expectations*, pp. 153–159 (1999).

Niederman et al., "Valuing the IT Workforce as Intellectual Capital," Special Interest Group on Computer Personnel Research Annual Conference, *Proceeding of the 1999 ACM SIGCPR Conference on Computer Personnel Research*, pp. 174–181 (1999).
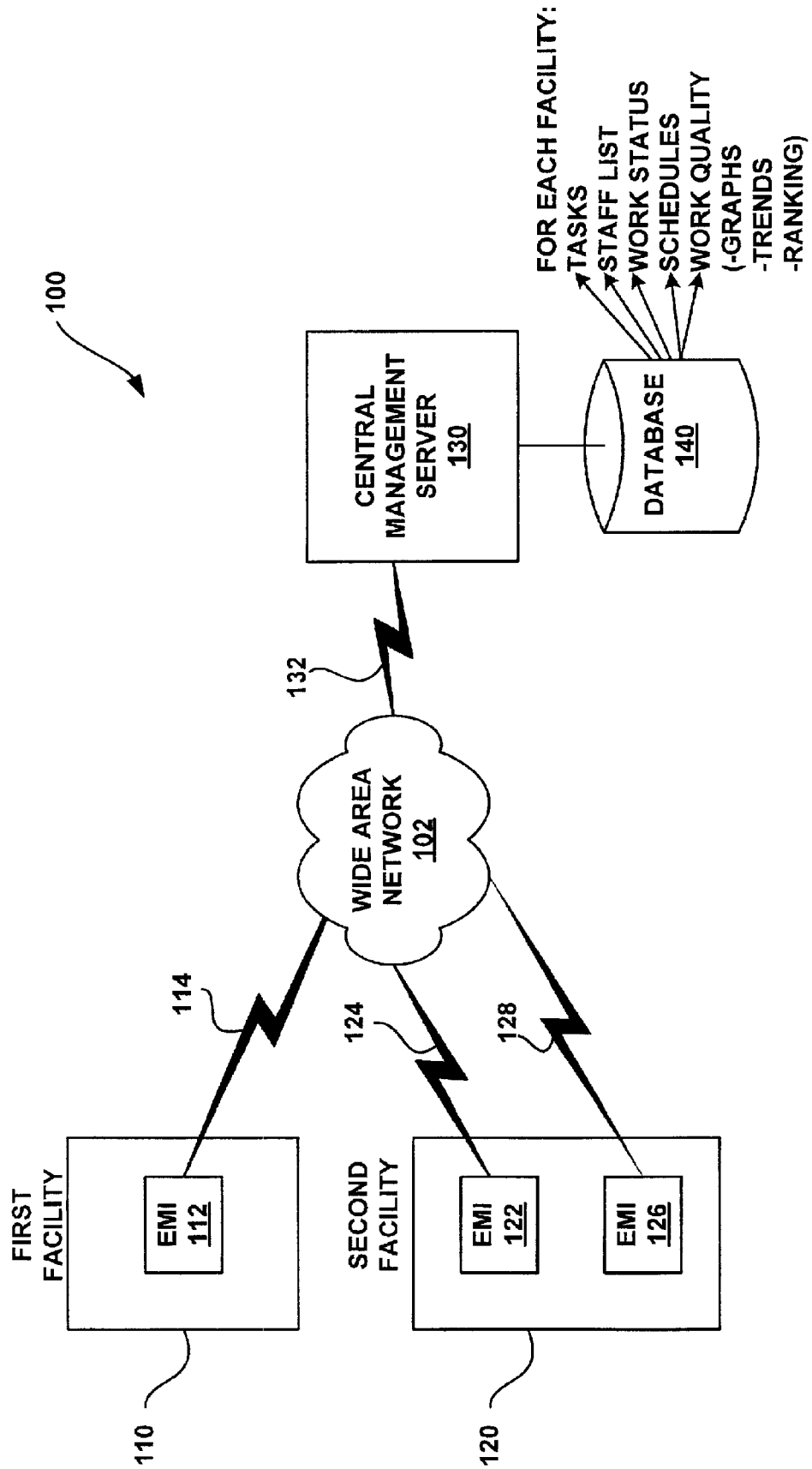
* cited by examiner

FIGURE 1
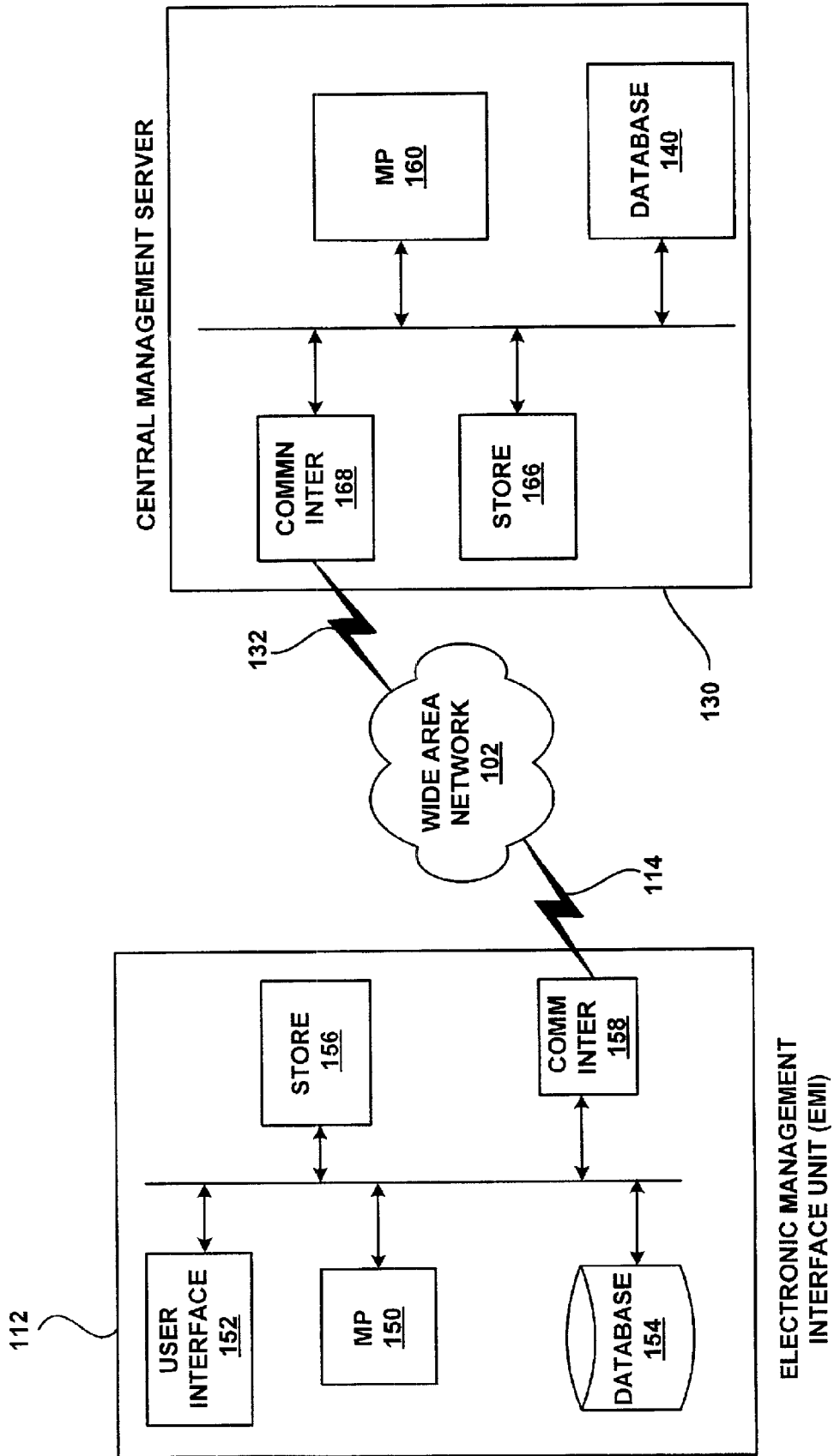
FIGURE 2

CENTRAL MANAGEMENT SERVER

MP 160

DATABASE 140

COMMN INTER 168

STORE 166

130

132

WIDE AREA NETWORK 102

114

STORE 156

COMM INTER 158

USER INTERFACE 152

MP 150

DATABASE 154

112

ELECTRONIC MANAGEMENT INTERFACE UNIT (EMI)

CENTRAL SERVER DATABASE

CUSTOMER RECORD
CUSTOMER ID
REGION ID (list)
    - FACILITY ID
ACCESS (list)
    - USER ID
    - LEVEL

208

TEMPLATES
TEMPLATE ID
    - TEMPLATE STRUCTURE
    - TEMPLATE CONTENT (list)
    MARKUP DEFINITION
    LINK TO DATA

210

USER RECORD
USER ID
WORK SCHEDULE (list)
    - TASK ID
ERRORCOUNT
MESSAGE
INSTRUCT
LANGUAGE

202

FACILITY RECORD
FACILITY ID
DATE (list)
    - WORK SCHEDULE (list)
        > TASK ID
        > USER ID

204

TASK RECORD
TASK ID
    - TASK ICON
    - INSTRUCTION (list)
    LANGUAGE
    - MAP
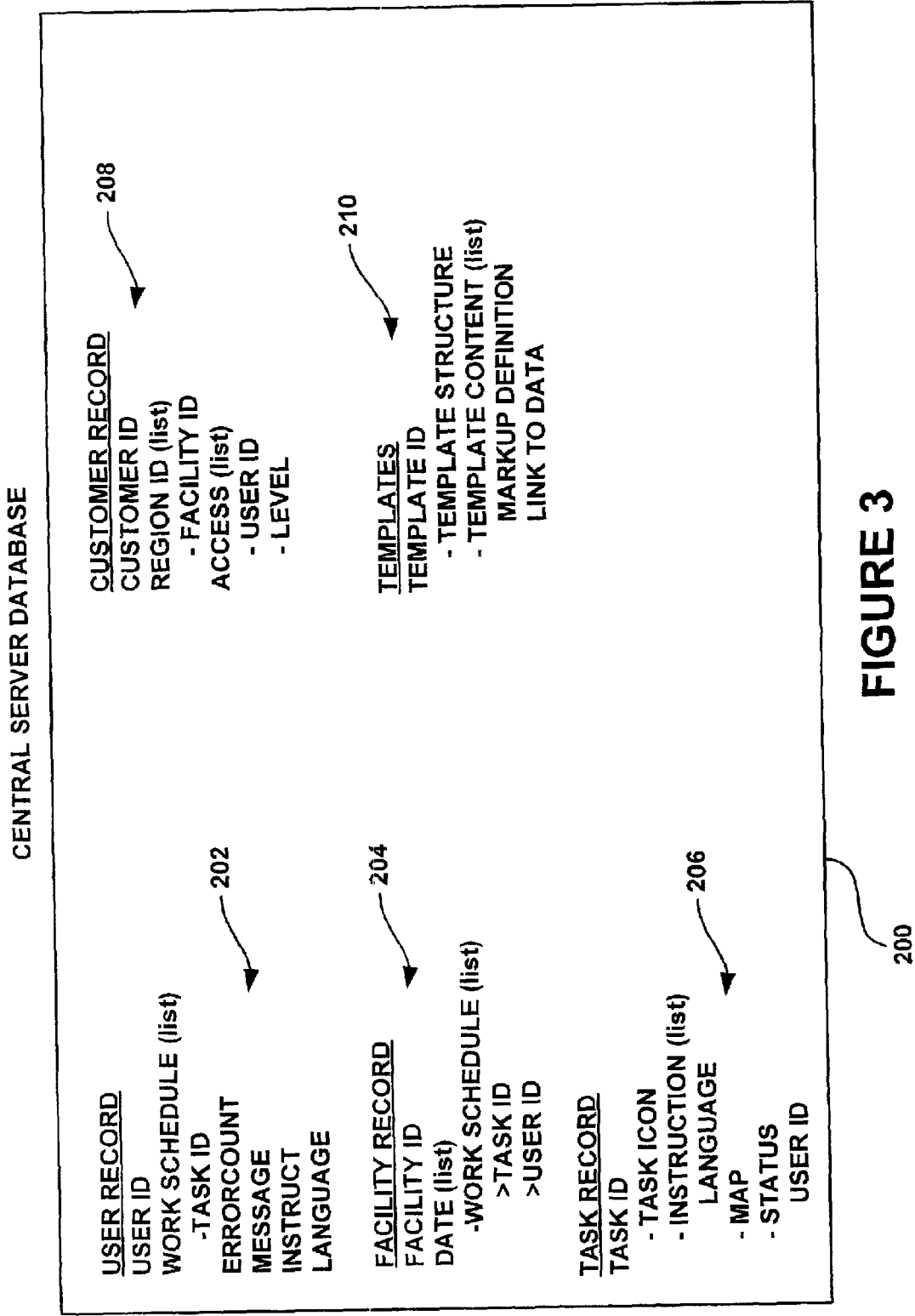   - STATUS
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206

200

FIGURE 3

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