



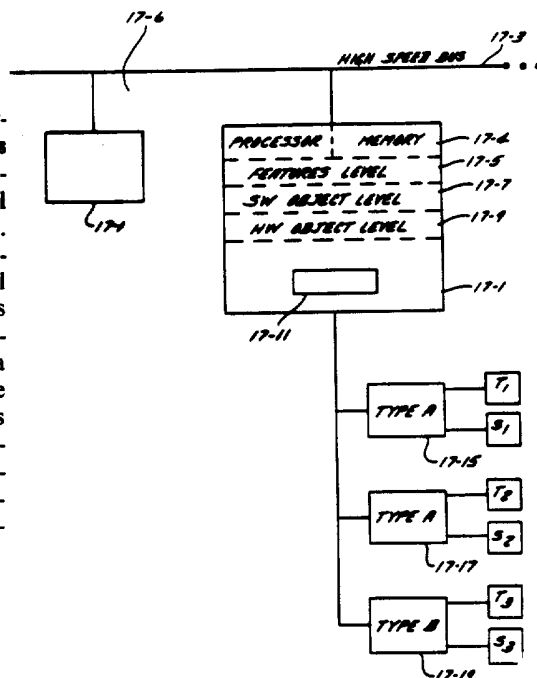
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification ⁵ : G06F 9/44, 9/445, 9/46, 15/16 G06F 15/40, 11/08, 13/40 G05B 11/42, 9/02</p>	<p>A3</p>	<p>(11) International Publication Number: WO 91/11766 (43) International Publication Date: 8 August 1991 (08.08.91)</p>
<p>(21) International Application Number: PCT/US91/00551 (22) International Filing Date: 25 January 1991 (25.01.91) (30) Priority data: 476,031 30 January 1990 (30.01.90) US (71) Applicant: JOHNSON SERVICE COMPANY [US/US]; 5757 North Green Bay Avenue, Milwaukee, WI 53209 (US). (72) Inventors: PASCUCCI, Gregory, A. ; W223 N2618 Springwood Lane, Waukesha, WI 53186 (US). RASMUSSEN, David, E. ; 656 Stourbridge Place, Wales, WI 53183 (US). DECIOUS, Gaylon, M. ; 2523 North Oakland Avenue, #108, Milwaukee, WI 53211 (US). GARBE, James, R. ; 4245 South 93rd Street, Greenfield, WI 53228 (US). HYZER, Susan, M. ; 4493 West Terry Avenue, Brown Deer, WI 53223 (US). WOEST, Karen, L. ; 2050 North 85th Street, Wauwatosa, WI 53226 (US). VAIRAVAN, Vairavan, E. ; 9373 North Burbank Avenue, Milwaukee, WI 53224 (US). KOCH, David, L. ; 7450 North Port Washington Road, Fox Point, WI 53217 (US). GOTTSCHALK, Donald, A., Jr. ; 2773 North Carlton Place, Milwaukee, WI 53210 (US). BURKHARDT, Dennis, E. ; 8036 South 77th Street, Franklin, WI 53132 (US). STANDISH, Darrell, E. ; 21600 Hidden Valley Drive, New Berlin, WI 53146 (US). MADAUS, Paul, W. ; 6865 South Ash Street, Oak Creek, WI 53154 (US). SPACEK, Dan, J. ; 3255 East Lunham, Cudahy, WI 53110 (US). NESLER, Clay, G. ; 16225 West Hearerly</p>		<p>Drive, New Berlin, WI 53151 (US). STARK, James, K. ; 2431 North 96th Street, Wauwatosa, WI 53226 (US). MAGELAND, Otto, M. ; 6134 South 31st Street, #9, Greenfield, WI 53221 (US). SINGERS, Robert, R. ; 4916 West Joleno Court, Brown Deer, WI 53223 (US). WAGNER, Michael, E. ; W318 S1161 Cray Fox Run, Delafield, WI 53018 (US). (74) Agents: COOPER, John, C., III; Foley & Lardner, 777 East Wisconsin Avenue, Milwaukee, WI 53202-5367 (US) et al. (81) Designated States: AT (European patent), AU, BE (European patent), CA, CH (European patent), DE (European patent), DK (European patent), ES (European patent), FR (European patent), GB (European patent), GR (European patent), IT (European patent), JP, LU (European patent), NL (European patent), SE (European patent). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> (88) Date of publication of the international search report: 9 January 1992 (09.01.92)</p>

(54) Title: NETWORKED FACILITIES MANAGEMENT SYSTEM

(57) Abstract

A networked system having a wide variety of applications and particularly applicable to facilities management systems has multiple levels of software in processing nodes. The levels include a "features" processing level which communicates requests for data to a software object level containing databases of processes and attributes and database managers. The database managers in the software object level operate to provide data to the high level features in the same format. The software object level communicates with a hardware object level which also contains databases and database managers to mask differences between operational hardware units. By categorizing operational units by type, additional units of a known type can be added with only low level hardware object database changes. Adding units of a new type is facilitated by software changes confined to the lower level hardware and software objects, avoiding software changes at high level features. Individual software objects are tailored for typical types of inputs and output devices encountered by facilities management systems. Universal drive circuitry also provides applicability to a broad range of devices.



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INTERNATIONAL SEARCH REPORT

International Application No PCT/US 91/00551

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all)*		
According to International Patent Classification (IPC) or to both National Classification and IPC		
Int. Cl. 5	G 06 F 9/44	G 06 F 9/445 G 06 F 9/46
G 06 F 15/16	G 06 F 15/40	G 06 F 11/08 G 06 F 13/40
G 05 B 11/42	G 05 B 9/02	
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁷		
Classification System	Classification Symbols	
Int. Cl. 5	G 06 F	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁸		
III. DOCUMENTS CONSIDERED TO BE RELEVANT ⁹		
Category ¹⁰	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
A	Microprocessing and Microprogramming, volume 14, no. 2, September 1984, (Amsterdam, NL) F. Eliassen et al.: "A multilayered operating system for microcomputers", pages 45-55, see sections 4.1, 4.3, 4.5 ---	1,7,19
A	1988 International Conference on Computer Languages, 9-13 October 1988, Florida, US, IEEE, J.P. Diaz-Gonzalez et al.: "Language aspects of ENVISAGER: An object-oriented environment for the specification of real-time systems", pages 214-225, see page 215, left-hand column, line 15 - page 216, right-hand column, line 16, sections 6.1, 6.2 --- -/-	1,7,19
<p>¹⁰ Special categories of cited documents:</p> <ul style="list-style-type: none"> "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document 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 another 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 "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. "A" document member of the same patent family 		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search		Date of Mailing of this International Search Report
07-06-1991		11. 12. 91
International Searching Authority		Signature of Authorized Officer
EUROPEAN PATENT OFFICE		<i>Katzke Weinberg</i>

III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category °	Citation of Document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.
A	IEE Proceedings Section A a I, volume 130, no. 1, Part E, January 1983 (Old Woking, Surrey, GB), J. Kramer et al.: "CONIC: An integrated approach to distributed computer control systems", pages 1-10, see sections 2, 2.1, 3, 3.1,3.2,3.3, 3.4 -----	1,7,19

FURTHER INFORMATION CONTINUED FROM THE SECOND SHEET

V. OBSERVATION WHERE CERTAIN CLAIMS WERE FOUND UNSEARCHABLE ¹

This International search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claim numbers
Authority, namely: because they relate to subject matter not required to be searched by this

2. Claim numbers because they relate to parts of the International application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claim numbers because they are dependent claims and are not drafted in accordance with the second and third sentences of PCT Rule 6.4(a).

VI. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING ²

This International Searching Authority found multiple inventions in this International application as follows:

See form PCT/ISA/206 mailed on 29/08/1991

1. As all required additional search fees were timely paid by the applicant, this International search report covers all searchable claims of the International application
2. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims of the International application for which fees were paid, specifically claims:
3. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claim numbers:
1-14, 19-21
4. As all searchable claims could be searched without effort justifying an additional fee, the International Searching Authority did not invite payment of any additional fee.

Remark on Protest

- The additional search fees were accompanied by applicant's protest.
- No protest accompanied the payment of additional search fees.