UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
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Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/829,573			

EXAMINER	
ART UNIT	PAPER NUMBER
	#2

DATE MAILED:

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire THREE(3) month(s), Zero days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☒ Notice of References Cited by Examiner, PTO-892.
2. ☒ Notice of Draftsman's Patent Drawing Review, PTO-948. PP#2
3. ☒ Notice of Art Cited by Applicant, PTO-1449.
4. ☐ Notice of Informal Patent Application, PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐ _____.

Part II SUMMARY OF ACTION

1. ☒ Claims 1 - 19 are pending in the application.
   Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1 - 19 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☒ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☒ The ~~corrected or substitute~~ drawings have been received on 03/19/97. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☒ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948). PP #2
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____. has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____ ; filed on _____.
13. ☐ Since this application apppears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

PTOL-326 (Rev. 2/93)

Part III DETAILED ACTION

Drawings

1. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Note the attached PTO-948, Notice of Draftsman's Patent Drawing Review, indicating informalities in the figures of the drawings.

Specification

2. Claims 1-19 are presented for examination.

Claim Objections

3. Claim 16 is objected to because of the following informalities:

As per claim 16, Applicant claims a program storage device readable by a computer system as shown on lines 1-2. However, the claim is not structured to specifically associate the executable programs instructions with the functions being

performed, such that there is no doubt that **the instructions performing these functions are stored on the computer readable medium.** Such an association will eliminate any possible ambiguities that may lead to possible 35 U.S.C 101 problems regarding computer programs. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahamed et al (US Patent 5,809,493 hereafter referred to as Ahamed) in view of Graf (US Patent 5,619,656).

5.1 As per claim 1:

Ahamed substantially teaches the invention. Ahamed teaches:

- a tool for automatically maintaining a computer system [abstract, col. 1, lines 10-12] having:

-- a processor [col. 20, line 30];

-- memory [col. 20, line 26];

comprising:

- a knowledge database stored in the memory [col. 20, lines 26-27];

-- for describing potential problem and corresponding solutions [col. 20, lines 26-29];

- a plurality of sensors for gathering computer data [fig. 2, col. 7, lines 14-26];

- AI engine executing the processor [abstract, col. 2, lines 13-19];

-- solve computer problems [col. 2, lines 35-42].

Ahamed does not explicitly teach:

- detecting computer problem.

However, Ahamed does disclose capability of:

- optimizing solution to the current problem [col. 2, lines 40-43];

- detecting attributes in computer [col. 1, lines 47-50].

Graf explicitly teaches:

- an automatically system for gathering data, storing data, analyzing data [abstract, col. 56, lines 53-65];

- detecting computer problems [abstract, col. 56, lines 48 and lines 61-65].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the knowledge processing system having knowledge base with AI capability for solving computer problem as disclosed by Ahamed to explicitly including the computer problem detecting function as taught by Graf in allowing the computer system to identify the problem and provide corresponding solutions.

This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so to provide the computer system having capability of identifying and resolving computer problem with a detecting mechanism to enhance the computer system in tracking all past, present, and future problems and provide corresponding solutions via AI and knowledge base functions. That is by utilizing this approach, first, problems can be easily detected and resolved rapidly; second, problems can be stored and analyzed via the knowledge database for future uses; third, the human involvement

and interference can be minimized in detecting and resolving computer problems.

5.2 As per claim 2:

Ahamed explicitly teaches:

- questions and answers about computer system via sensors [col. 14, lines 38-61].

Ahamed does not explicitly teaches:

- actions describing how to solve the computer problem [abstract, col. 1, lines 10-20].

However, Ahmed does disclose capability of:

- knowledge opcodes determinination by knowledge processing unit [col. 21, lines 6-11].

Graf explicitly teaches

- questions and answers (e.g., constructing computer condition) about computer system via sensors [col. 56, lines 48-60].

- actions describing the problem and its resolution [col. 22 line 65 through col. 23, line 41].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the knowledge processing system having knowledge base with AI capability for solving computer problem as disclosed by Ahamed to explicitly including the computer problem actions as taught by Graf in allowing the computer system to identify the problem and provide corresponding solutions.

This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so to provide the computer system having capability of identifying and resolving computer problem with the question and action mechanism to identify and solve the computer problem. That is by utilizing this approach, the computer system can be up in running in a short period of down time without a need of human resources interference. That is by using and applying the knowledge database information, the computer problem can be fixed via AI questions and actions type function.

5.3 As per claim 3:

Ahamed does not explicitly teaches:

- action saving a state of the computer system in case problems not detected.

However, Ahmed does disclose capability of:

- knowledge opcodes determinination by knowledge processing unit [col. 21, lines 6-11].

Graf explicitly teaches

- actions setting states of the problem including file state, process state, etc.. [col. 43, table 29 and col. 58, col. 38-54].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the knowledge processing system having knowledge base with AI capability for solving computer problem as disclosed by Ahamed to explicitly including the computer problem actions as taught by Graf in allowing the computer system to identify the problem and provide corresponding solutions for the same reasons set forth in paragraph 5.2, **supra**.

5.4 As per claims 4-5:

Ahamed substantially teaches the invention. Ahamed teaches:

- a tool for automatically maintaining a computer system [abstract, col. 1, lines 10-12] having:

-- a processor [col. 20, line 30];

-- memory [col. 20, line 26];

comprising:

- a knowledge database stored in the memory [col. 20, lines 26-27];

-- for describing potential problem and corresponding solutions [col. 20, lines 26-29];

- a plurality of sensors for gathering computer data [fig. 2, col. 7, lines 14-26];

- AI engine executing the processor [abstract, col. 2, lines 13-19];

-- solve computer problems [col. 2, lines 35-42].

Graf explicitly teaches:

- an automatically system for gathering data, storing data, analyzing data [abstract, col. 56, lines 53-65];

- detecting computer problems [abstract, col. 56, lines 48 and lines 61-65].

5.5 As per claim 6:

Ahamed substantially teaches the invention. Ahamed teaches:

- a knowledge database stored in the memory [col. 20, lines 26-27];

-- for describing potential problem and corresponding solutions [col. 20, lines 26-29];

- a plurality of sensors for gathering computer data [fig. 2, col. 7, lines 14-26];

- AI engine executing the processor [abstract, col. 2, lines 13-19];

-- solve computer problems [col. 2, lines 35-42].

Graf also discloses capability of:

- questions and answers (e.g., constructing computer condition) about computer system via sensors [col. 56, lines 48-60].

- actions describing the problem and its resolution [col. 22 line 65 through col. 23, line 41];

- computer problem are alerted and watched by AI client [col. 55, lines 46-62].

5.7 As per claim 7-15:

Due to the similarity of claims 7-15 to claims 1-6 except for the tool for automatically maintaining a computer system having capabilities (i.e., detecting a problem, activating an AI engine, determining a solution, etc…) instead of a method for optimizing [Ahamed, col. 2, lines 40-43] a computer system having

steps (i.e., detecting a problem, activating an AI engine, determining a solution, etc…); therefore, these claims are also rejected under the same rationale applied against claims 1-6. **In addition, all of the limitations have been noted in the rejection as per claims 1-6.**

5.8 As per claims 16-19:

This claims are the same as per claims 1-6. The only minor different is that these claims are directed to a **program storage device readable by a computer system having executable instructions for performing the automatically maintaining the computer system** instead of the tool for automatically maintaining a computer system as described in claims 1-6. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to realized that the program readable medium is a necessary item for such computer system. Since the computer system obviously needs a means for instruction or code means resided within the computer readable medium for performing the automatically maintaining the computer system such as sensing, detecting, AI determining, etc… Therefore, these claims are also rejected under the same rationale applied against claims 1-6.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. A shortened statutory period for response to this action is set to expired THREE (3) months, ZERO days from the date of this letter. Failure to respond within the period for response will cause the application to be abandoned. 35 U.S.C. 133.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu-Minh Le whose telephone number is (703) 305-9408. The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel, can be reached on (703)305-9713. The fax phone number for this Group is (703) 305-9724.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

(703) 305-9724 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

DIEU-MINH THAI LE
PRIMARY EXAMINER
ART UNIT 2785

DML
November 02, 1998

FORM PTO 948 (REV. 01-97) U.S. DEPARTMENT OF COMMERCE-Patent and Trademark Office Application No. 800573

NOTICE OF DRAFTPERSON'S PATENT DRAWING REVIEW

The drawing filied (insert date) 3/19/97 are:

A. _____ not objected to by the Draftperson under 37 CFR 1.84 or 1.152.

B. X objected to by the Draftperson under 37 CFR 1.84 or 1.152 as indicated below. The Examiner will require submission of new, corrected drawings whe necessary. Corrected drawings must be submitted according to the instructions on the back of this notice.

1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings: Black ink. Color.
   - _____ Color drawing are not acceptable until petition is granted. Fig.(s) _____
   - _____ Pencil and non black ink is not permitted. Fig(s)_____
2. PHOTOGRAPHS. 37 CFR 1.84(b)
   - _____ Photographs are not acceptable until petition is granted,
   - _____ 3 full-tone sets are required. Fig(s)_____
   - _____ Photographs not properly mounted (must brystol board or photographic double-weight paper). Fig(s)_____
   - _____ Poor quailty (half-tone). Fig(s)_____
3. TYPE OF PAPER. 37 CFR 1.84(e)
   - _____ Paper not flexible, strong, white and durable. Fig.(s)_____
   - _____ Erasures, alterations, overwritings, interlineations, folds, copy machine marks not acceptable. (too thin)
   - _____ Mylar, vellum paper is not acceptable (too thin). Fig(s)_____
4. SIZE OF PAPER. 37 CFR 1.84(F): Acceptable sizes:
   - _____ 21.0 cm by 29.7 cm (DIN size A4)
   - _____ 21.6 cm by 27.9 cm (8 1/2 x 11 inches)
   - _____ All drawings sheets not the same size. Sheet(s)_____
5. MARGINS. 37 CFR 18.4(g): Acceptable margins:
   - Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm SIZE: A4 Size
   - Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm SIZE: 8 1/2 x 11
   - X Margins not acceptable. Fig(s) 2
   - _____ Top (T) X Left (L)
   - _____ Right (R) _____ Bottom (B)
6. VIEWS. CFR 1.84(h)
   REMINDER: Specification may require revision to correspond to drawing changes.
   - _____ Views connected by projection lines or lead lines. Fig.(s)_____

   Partial views. 37 CFR 1.84(h)(2)
   - _____ Brackets needed to show figure as one entity. Fig.(s)_____
   - _____ Views not labeled separately or properly. Fig.(s)_____
   - _____ Enlarged view not labeled separately or properly. Fig.(s)_____
7. SECTIONAL VIEWS. 37 CFR 1.84(h)(3)
   - _____ Hatching not indicated for sectional portions of an object. Fig.(s)_____
   - _____ Sectional designation should be noted with Arabic or Roman numbers. Fig.(s)_____
8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i)
   - _____ Words do not appear on a horizontal, left-to-right fashion when page is either upright or turned, so that the top becomes the right side, except for graphs. Fig.(s)_____
   - _____ Views not on the same plane on drawing sheet. Fig.(s)_____
9. SCALE. 37 CFR 1.84(k)
   - _____ Scale not large enough to show mechansim with crowding when drawing is reduced in size to two-thirds in reproduction. Fig.(s)_____
10. CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(l)
    - _____ Lines, numbers & letters not uniformly thick and well defined, clean, durable and black (poor line quality). Fig.(s)_____
11. SHADING. 37 CFR 1.84(m)
    - _____ Solid black areas pale. Fig.(s)_____
    - _____ Solid black shading not permitted. Fig.(s)_____
    - _____ Shade lines, pale, rough and blurred. Fig.(s)
12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR 1.48(p)
    - _____ Numbers and reference characters not plain and legible. Fig.(s)_____
    - _____ Figure legends are poor. Fig.(s)_____
    - _____ Numbers and reference characters not oriented in the same direction as the view. 37 CFR 1.84(p)(3) Fig.(s)_____
    - _____ Engligh alphabet not used. 37 CFR 1.84(p)(3) Fig.(s)_____
    - _____ Numbers, letters and reference characters must be at least .32 cm (1/8 inch) in height. 37 CFR 1.84(p)(3) Fig.(s)_____
13. LEAD LINES. 37 CFR 1.84(q)
    - _____ Lead lines cross each other. Fig.(s)_____
    - _____ Lead lines missing. Fig.(s)_____
14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.48(t)
    - _____ Sheets not numbered consecutively, and in Ababic numerals beginning with number 1. Fig.(s)_____
15. NUMBERING OF VIEWS. 37 CFR 1.84(u)
    - _____ Views not numbered consecutively, and in Abrabic numerals, beginning with number 1. Fig.(s)_____
16. CORRECTIONS. 37 CFR 1.84(w)
    - _____ Corrections not made from PTO-948 dated _____
17. DESIGN DRAWINGS. 37 CFR 1.152
    - _____ Surface shading shown not appropriate. Fig.(s)_____
    - _____ Solid black shading not used for color contrast. Fig.(s)_____

MENTS

_____ DATE 8/4/97 TELEPHONE NO. 308-3617

NT TO PAPER NO. 2

REMINDER

Drawing changes may also require changes in the specification, e.g., if Fig. I is changed to Fig. IA, Fig. IB, Fig. IC, etc., the specification, at the Brief Description of the Drawings, must likewise be changed. Please make such changes by 37 CFR 1.312 Amendment at the time of submitting drawing changes.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

1. Correction of Informalities--37 CFR 1.85

File new drawings with the changes incorporated therein. The application number or the title of the invention, inventor's name, docket number (if any), and the name and telephone number of a person to call if the Office is unable to match the drawings to the proper application, should be placed on the back of each sheet of drawings in accordance with 37 CFR I .84(c). Applicant may delay filing of the new drawings until receipt of the Notice of Allowability (PTOL-37). Extensions of time may be obtained under the provisions of 37 CFR 1 .136. The drawing should be filed as a separate paper with a transmittal letter addressed to the Drawing Review Branch.

2. Timing of Corrections

Applicant is required to submit **acceptable** corrected drawings within the three-month shortened statutory period set in the Notice of Allowability (PTOL-37). If a correction is determined to be unacceptable by the Office, applicant must arrange to have acceptable correction resubmitted within the original three-month period to avoid the necessity of obtaining as extension of time and paying the extension fee. Therefore, applicant should file corrected drawings as soon as possible.

Failure to take corrective action within set (or extended) period will result in **ABANDONMENT** of the Application.

3. Corrections other than Informalities Noted by the Drawing Review Branch on the Form PTO 948

All changes to the drawings, other than informalities noted by the Drawing Review Branch, **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

Notice of References Cited

Application No.	Applicant(s)		
08/820,573	ISENBERG		
Examiner	Group Art Unit	Page 1 of 1	
DIEU-MINH LE	2785		

U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	Filing Date	CLASS	SUBCLASS
	A	5,809,493	09/98	Ahamed et al	12/14/95	706	52
	B	5,619,656	04/97	Graf	05/05/94	395	200.11
	C	4,796,206	01/89	Boscove et al		364	555.01
	D	5,455,947	10/95	Suzuki et al.		395	650
	E	5,481,481	01/96	Frey et al.		364	551.01
	F						
	G						
	H						
	I						
	J						
	K						
	L						
	M						

FOREIGN PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUBCLASS
	N						
	O						
	P						
	Q						
	R						
	S						
	T						

NON-PATENT DOCUMENTS

*		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)	DATE
	U		
	V		
	W		
	X		

* A copy of this reference is not being funished with this Office action.
(See Manual of Patent Examining Procedure, Section 707.05(a).)

GP 2785

PTO/SB/21 (modified)
Approved for use through xx/xx/xx, OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

0001/PTO
Rev. 10/95

U.S. Department of Commerce
Patent and Trademark Office

TRANSMITTAL FORM

(to be used for all correspondence during pendency of filed application)

JAN 27 1999

Total Number of Pages in This Submission	12

Application Number	08/820,573
Filing Date	March 19, 1997
First Named Inventor	Henri J. Isenberg
Group Art Unit Number	2785
Examiner Name	Dieu-Minh Thai Le
Attorney Docket Number	2613

RECEIVED
FEB 02 1999
Group 2700

ENCLOSURES *(check all that apply)*

- ☑ Fee Transmittal Form (in duplicate)
  - ☐ Check Enclosed
- ☑ Return Receipt Postcard
- ☐ Response to Notice to File Missing Parts
- ☐ Assignment & PTO-1595
- ☐ Declaration
- ☐ Small Entity Statement
- ☐ Information Disclosure Statement & PTO-1449
  - ☐ Copies of IDS Cited References
- ☐ Request for Corrected Filing Receipt
- ☐ Request for Correction of Recorded Assignment
- ☑ Amendment/Response: [9] Page(s)
  - ☐ After Final
- ☐ Status Request
- ☐ Revocation and Power of Attorney
- ☐ Issue Fee Transmittal
- ☐ Letter to Chief Draftsperson
- ☐ Formal Drawing(s):
  [ ] Sheet(s) of Figure(s) [ ]
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to Group *(Appeal Notice, Brief, Reply Brief)*
- ☐ Certified Copy of Priority Document(s)
- ☐ After Allowance Communication to Group
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

REMARKS:

SIGNATURE OF ATTORNEY OR AGENT

Signature:	Brian Hoffman		
Attorney/Reg. No.:	Brian M. Hoffman, Reg. No. 39,713	Dated:	1/21/99

CERTIFICATE OF MAILING

I hereby certify that this correspondence, including the enclosures identified above, is being deposited with the United States Postal Service as first class mail in an envelope addressed to: The Assistant Commissioner for Patents, Washington, D.C. 20231 on the date shown below. If the Express Mail Mailing Number is filled in below, then this correspondence is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service pursuant to 37 CFR 1.10.

Signature:	Brian Hoffman		
Typed or Printed Name:	Brian M. Hoffman	Dated:	1/21/99
Express Mail Mailing Number *(optional)*:			

Rev. 01/05/99

PTO/SB/17 (6-95)(modified)
Approved for use through 11/30/96, OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

0002/PTO(modified) Rev. 10/95 — U.S. Department of Commerce, Patent and Trademark Office

FEE TRANSMITTAL

TOTAL AMOUNT OF PAYMENT

Subtotal (1) + Subtotal (2) + Subtotal (3) = ($)0

Complete if Known	
Application Number	08/820,573
Filing Date	March 19, 1997
First Named Inventor	Henri J. Isenberg
Group Art Unit	2785
Examiner Name	Dieu-Minh Thai Le
Attorney Docket Number	2613

METHOD OF PAYMENT

1. The Commissioner is hereby authorized to:

[ ] Charge the indicated fees to the below mentioned deposit account.

[X] Charge any additional fee required under 37 CFR 1.16 and 1.17 or credit any over payments to the below mentioned deposit account. †

[ ] Charge the Issue Fee set in 37 CFR 1.18 at the Mailing of the Notice of Allowance, 37 CFR 1.311(b) to the below mentioned deposit account.

Deposit Account Number: 19-2555
Deposit Account Name: FENWICK & WEST LLP

A Duplicate Copy of this authorization is attached

2. [ ] **Payment Enclosed:**
[ ] Check [ ] Other

FEE CALCULATION (fees effective 10/01/97)

1. FILING FEE

Large Entity Fee Code/Fee	Small Entity Fee Code/Fee	Fee Description	Fee Due
101/$760	201/$380	Utility Filing	
106/$310	206/$155	Design Filing	
108/$760	208/$380	Reissue Filing	
114/$150	214/$75	Provisional Filing	

SUBTOTAL (1) ($)0

2. CLAIMS

Large Entity Fee Code/Fee	Small Entity Fee Code/Fee	Fee Description
103/$18	203/$9	Claims in excess of 20
102/$78	202/$39	Independent claims in excess of 3
104/$260	204/$130	Multiple dependent claim
109/$78	209/$39	Reissue independent claims over original patent
110/$18	210/$9	Reissue claims in excess of 20 and over original patent

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code/Fee	Small Entity Fee Code/Fee	Fee Description	Fee Due
105/$130	205/$65	Surcharge - late filing fee or oath	
127/$50	227/$25	Surcharge-late provisional filing fee or cover sheet	
147/$2,520	147/$2,520	For filing a request for reexamination	
115/$110	215/$55	Extension for response within first month†	
116/$380	216/$190	Extension for response within second month†	
117/$870	217/$435	Extension for response within third month†	
118/$1,360	218/$680	Extension for response within fourth month†	
128/$1,850	228/$925	Extension for response within fifth month†	
119/$300	219/$150	Notice of Appeal	
141/$1,210	241/$605	Petition to revive unintentionally abandoned application	
142/$1,210	242/$605	Utility Issue Fee (Or Reissue)	
143/$430	243/$215	Design Issue Fee	
122/$130	122/$130	Petitions to the Commissioner	
123/$50	123/$50	Petitions related to provisional applications	
126/$240	126/$240	Submission of Information Disclosure Statement	
581/$40	581/$40	Recording each patent assignment per property (times number of properties)	
146/$760	246/$380	Filing a submission after final rejection (37 CFR 1.129(a))	
149/$760	249/$380	For each additional invention to be examined (37 CFR 1.129(b))	
		Other fee *(specify)*:	
		Other fee *(specify)*:	

SUBTOTAL (3) ($)0

For	(Col. 1) No. of Existing Claims		(Col. 2) Highest No. Previously Paid For		(Col. 3) Extra**		Fee		Fee Due
TOTAL	17	minus*	20 or 19	=	0	x		=	0
INDEP	3	minus*	3 or 3	=	0	x		=	0
[ ] First presentation of multiple dependent claim								=	

* *Subtract the greater number of Col. 2*
** *If the difference between Col. 1 and Col. 2 is less than zero, then enter "0" in Col. 3*

SUBTOTAL (2) ($)0

SUBMITTED BY		Complete (if applicable)	
Typed or Printed Name	Brian M. Hoffman	Reg. Number	39,713
Signature	Brian Hoffman	Date	1/21/99

† *Request for Extension of Time per 37 CFR 1.136 (a)(3) made hereby*

Rev. 01/21/99

#3

IN THE UNITED STATES

PATENT AND TRADEMARK OFFICE

APPLICANT:	Henri J. Isenberg
SERIAL NO.:	08/820,573
FILING DATE:	March 19, 1997
TITLE:	SYSTEM AND METHOD FOR AUTOMATICALLY MAINTAINING A COMPUTER SYSTEM
EXAMINER:	Dieu-Minh Thai Le
GROUP ART UNIT:	2785
ATTY. DKT. NO.:	2613

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner For Patents, Washington, D.C. 20231, on the date shown below:

Dated: 1/24/99 By: _____
Brian M. Hoffman, Reg. No.: 39,713

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, DC. 20231

AMENDMENT A UNDER 37 CFR 1.111

SIR:

In response to the office action dated November 6, 1998, please amend the above-referenced application as indicated below.

In the Claims

Please cancel claims 3, 16, and 19.

1. (Amended) A tool for automatically maintaining a computer system having a processor and a memory, the tool comprising:

a knowledge database stored in the memory and holding a plurality of cases [information] describing potential computer problems and corresponding likely solutions;

a plurality of sensors stored in the memory and executing on the processor and adapted for gathering data about the computer system, storing the data in the knowledge

database, and detecting whether a computer problem exists from the data and the pluraltiy of cases; and

an AI engine stored in the memory and executing on the processor in response to detection of a computer problem and utilizing the plurality of cases [information in the knowledge database] to determine a likely solution to [solve] the detected computer problem, wherein

when [if] the knowledge database lacks data necessary to determine a likely solution to [solve] the computer problem, the AI engine activates a particular sensor in the plurality of sensors to gather the necessary data and store the data in the knowledge database, and wherein

A1

when the knowledge database does not describe a likely solution to the computer problem, the AI engine saves the gathered data in the knowledge database as a new case.

2. (Amended) The tool of claim 1, wherein [the information describing potential computer problems is stored in cases, and] each case comprises:

at least one question asking about a particular aspect of the computer system that can be answered by the data gathered by the plurality of sensors; and

at least one action describing a likely solution to [how to solve] a potential computer problem stored in the knowledge database.

3A. (Amended) The tool of claim 2, wherein the AI engine executes a particular sensor of the plurality of sensors to carry out a likely solution to [an action solving] the computer problem detected by the plurality of sensors.

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A2

4 5. (Amended) The tool of claim 3 4, wherein the particular sensor requests that a computer user carry out the likely solution to [action solving] the computer problem.

B

6. (Unchanged) The tool of claim 1, wherein first selected ones of the plurality of sensors gather data about the computer system by observing the computer system and second selected ones of the plurality of sensors gather data about the computer system by requesting data from a computer user.

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6 7. (Amended) A method of optimizing a computer system, the method comprising the steps of:

detecting a problem in the computer system;

activating an AI engine in response to the problem detection;

utilizing, by the AI engine, selected ones of a plurality of sensors to gather information about the computer system; [and]

determining, by the AI engine, a likely solution to the problem from the gathered information; and

when a likely solution cannot be determined, saving a state of the computer system.

C

8. (Unchanged) The method of claim 7, wherein the selected ones of the plurality of sensors gather information by requesting input from a computer user.

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8 9. (Amended) The method of claim 6 7, wherein the determining step comprises the substeps of:

inferring the likely solution to the problem from questions, actions, and rules contained in a knowledge database; wherein

the AI engine utilizes the selected ones of the plurality of sensors to gather information when the knowledge database lacks information necessary to answer a question.

A4

N.E.

10. (Unchanged) The method of claim 9, wherein the AI engine uses forward chaining to infer the solution.

11. (Unchanged) The method of claim 9, wherein the AI engine uses backward chaining to infer the solution.

12. (Unchanged) The method of claim 7, wherein the AI engine is a case-based inference engine.

~~12~~ 13. (Amended) The method of claim ~~7~~ 6, further comprising the step of:

applying, by selected ones of the plurality of sensors, the likely solution to the computer system.

A5

~~13~~ 14. (Amended) The method of claim ~~12~~ 13, wherein the applying step comprises the substep of:

requesting that a computer user apply the likely solution.

N.E.

15. (Unchanged) The method of claim 7, wherein the detecting step comprises the substeps of:

periodically activating selected ones of the plurality of sensors to gather information about the computer system; and

analyzing the information to determine whether a problem exists.

16 17. (Amended) The program storage device of claim ~~20~~ 15 [16], wherein the at least one [particular ones of the plurality of] sensor[s] senses information about the computer system by requesting information from a computer user.

17 18. (Amended) The program storage device of claim ~~20~~ 15 [16], wherein the sensing step comprises the substep of:

periodically activating the at least one sensor to gather information about

Please add new claim 20 as follows:

15 20. (New) A program storage device readable by a computer system, the program storage device tangibly embodying a program of instructions executable by the computer system to perform method steps for automatically maintaining the computer system, the program storage device holding instructions for:

sensing information about the computer system by at least one sensor;

determining whether a computer problem exists from the sensed information;

searching a plurality of cases with the sensed information to determine whether a likely solution to the computer problem exists;

when additional information is needed to determine a likely solution to the computer problem, activating the at least one sensor to sense the additional information; and

when a likely solution to the computer problem does not exist, saving the sensed information as a new case of the plurality of cases.

REMARKS

Claims 1-19 are pending and stand rejected. In response, claims 1, 2, 4, 5, 7, 9, 13, 14, 17, and 18 are amended and claims 3, 16, and 19 are canceled. New claim 20 is added. Claims 1, 2, 4-15, and 17-18, and 20 are now pending.

Claim 16 was objected to because of the informality that the claim was "not structured to specifically associate the executable program instructions with the functions being performed, such that there is no doubt that the instructions performing these functions are stored on the computer readable medium."

Although claim 16 is canceled, new claim 20 is very similar to claim 16. In response to the Examiner's objection, Applicant has changed the preamble to:

> A program storage device readable by a computer system, the program storage device tangibly embodying a program of instructions executable by the computer system to perform method steps for automatically maintaining the computer system, **the program storage device holding instructions for**:

Thus, the preamble states that the program storage device embodies a program of instructions for performing the recited method steps. If the Examiner objects to the preamble of claim 20, Applicant respectfully requests that the Examiner suggest appropriate claim language.

Claims 1, 2, 4-15, 17, and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ahamed et al. (U.S. Pat. No. 5,809,493), in view of Graf (U.S. Pat. No. 5,619,656). In response, claims 1, 2, 4, 5, 7, 9, 13, 14, 17, and 18 have been amended and claims 3, 16, and 19 have been canceled. New claim 20 is added. To the extent that the Examiner's rejection applies to the new and amended claims, Applicant respectfully traverses.

As amended, independent claim 1 recites:

> a knowledge database stored in the memory and holding a plurality of cases describing potential computer problems and corresponding likely solutions;...
>
> an AI engine executing on the processor in response to detection of a computer problem and utilizing the plurality of cases to determine a likely solution to the detected computer problem, wherein ...
>
> when the knowledge database does not describe a likely solution to the computer problem, the AI engine saves the gathered data in the knowledge database as a new case.

Thus, claim 1 recites a knowledge database holding cases and an AI engine utilizing the cases. If the knowledge database does not describe a solution to a detected computer problem, the AI engine saves data about the computer in the knowledge database as a new case. An advantage of the claimed behavior is that a human expert can later examine the case and input a likely solution. This limitation was previously recited by claim 3.

Ahamed, in contrast, discloses a knowledge processing system employing confidence levels. Ahamed's system does not store knowledge in a case-based format, but rather uses a knowledge processing system as described in col. 10, lines 38-50. Likewise, Graf does not disclose a knowledge database using cases as claimed. Rather, Graf discloses an expert system using a rule specificity algorithm (see col. 7, lines 54-55). Accordingly, neither Ahamed nor Graf discloses an AI engine utilizing cases as claimed.

Moreover, neither Ahamed nor Graf discloses **saving** gathered data in the knowledge database as claimed. In the rejection of claim 3, the Examiner explicitly admits that Ahamed does not disclose saving data as claimed. Instead, the Examiner asserts that Ahamed discloses the capability of "knowledge opcodes determination by knowledge processing unit." However, knowledge opcodes are merely computer instructions (see col. 8, line 44). In cols. 8-9, Ahamed lists several actions that may be performed by knowledge opcodes but does not disclose or suggest saving computer state information as claimed.

In addition, the Examiner states that "Graf explicitly teaches...actions **setting** states of the problem including file state, process state, etc. [col. 43, table 29 and col. 58, lines 38-54]". However, claim 1 recites **saving**, not **setting**, states. In col. 43, table 29, Graf discloses rules that set the state of a system as part of an initialization sequence. Graf's rules neither disclose, suggest, or even hint at saving the state of the computer program when a likely solution cannot be determined as claimed.

The second portion of Graf identified by the Examiner, col. 58, lines 38-54, also fails to suggest the present invention. Claim 12 of Graf recites "means for analyzing the data to identify a specific computer condition." The portion identified by the Examiner

lists the possible computer conditions that can be identified in claim 12, including the state of file system disk space, the state of process CPU usage, and the state of the operating system. Thus, this portion of Graf only lists conditions that Graf's system can detect; it says nothing about saving the state of the computer when a solution to a computer problem cannot be determined.

Accordingly, one of ordinary skill in the art would not find saving a state as claimed to be obvious in light of Ahamed and Graf. Neither reference discloses or suggests saving the state of the computer system when a likely solution cannot be determined. Independent claims 7 and 20 recite similar limitations. Accordingly, Applicant believes that claims 1, 7, and 20, and the respective dependent claims, are patentable over Ahamed in view of Graf.

Claim 5, as amended, recites that a "particular sensor requests that a computer user carry out the likely solution to the computer problem." As described in the specification at page 9, lines 1-2, the AI engine may determine that the likely solution cannot be performed without human intervention and ask the computer user to perform the solution.

In the rejection of claim 5, the Examiner states that "Ahamed substantially teaches the invention" and then lists the elements recited in claim 1, including a processor, memory, knowledge database, and an AI engine for solving computer problems. However, while Ahamed discloses finding solutions to problems, Ahamed does not consider solutions that require human intervention. Accordingly, Ahamed neither discloses nor suggests asking a computer user to solve the problem.

Moreover, Graf does not disclose or suggest asking a computer user to solve a problem. The portions of Graf cited by the Examiner in his rejection of claim 5, the abstract and col. 56, disclose a system for filtering alert messages that are shown to a computer user. Graf neither discloses nor suggests asking the computer user to perform a specific action as determined from a knowledge database as claimed.

Accordingly, neither Ahamed nor Graf discloses requesting that a computer user carry out the likely solution as recited by claim 5. Claims 14 recites a similar limitation and is believed to be patentable over Ahamed in view of Graf for similar reasons.

In addition to the amendments described above, Applicant has made various small amendments to the claims to more particularly claim the present invention. One amendment of note is that the amended claims recite that the AI engine "determines a likely solution" to the detected computer problem rather than "solving" the computer problem. This amendment was not made in response to the cited references. The amended claims more accurately claim the present invention because the likely solution determined from the database is not guaranteed to solve the computer problem. The other amendments are minor and are not intended to change the scope of the claims.

For the reasons stated above, Applicant submits that claims 1, 2, 4-15, and 17-20 are allowable over the prior art of record and requests that the application be passed to issue. If the Examiner disagrees or believes that for any other reason direct contact with Applicant's attorney would help advance the prosecution of this case, the Examiner is invited to telephone the undersigned at the number given below.

Respectfully submitted,

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Dated: 1/21/99

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This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

NOTICE OF ALLOWABILITY

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

☒ This communication is responsive to the amendment filed on 01/27/99.

☒ The allowed claim(s) is/are 1-2, 4-15, 17, 18, 20 NOW AS 1-17.

☐ The drawings filed on _____ are acceptable.

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE **THREE MONTHS** FROM THE "DATE MAILED" of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.

☒ Applicant MUST submit NEW FORMAL DRAWINGS

☒ because the originally filed drawings were declared by applicant to be informal.

☒ including changes required by the Notice of Draftperson's Patent Drawing Review, PTO-948, attached hereto or to Paper No. 2.

☐ including changes required by the proposed drawing correction filed on _____, which has been approved by the examiner.

☐ including changes required by the attached Examiner's Amendment/Comment.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftperson.

☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any response to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

☐ Interview Summary, PTO-413

☐ Examiner's Amendment/Comment

☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

☐ Examiner's Statement of Reasons for Allowance

DIEU-MINH T. LE
PRIMARY EXAMINER

☆ U.S. GOVERNMENT PRINTING OFFICE: 1997—429-299