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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/132,487	03/20/2012	8140358	12654/42	7812

10999 7590 02/29/2012

Progressive Casualty/BHGL
P.O. Box 10395
Chicago, IL 60610

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 848 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

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Liberty Mutual Exhibit 1002

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/132,487	06/03/2008	Raymond Scott Ling	12654/42	7812

10999 7590 02/21/2012

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P.O. Box 10395
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EXAMINER	
NIQUETTE, ROBERT R	
ART UNIT	PAPER NUMBER
3695	
MAIL DATE	DELIVERY MODE
02/21/2012	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
12/132,487	03 June, 2008	LING ET AL.	12654/42

		EXAMINER	
Progressive Casualty/BHGL P.O. Box 10395 Chicago, IL 60610		ROBERT NIQUETTE	
		ART UNIT	PAPER
		3695	20120209

DATE MAILED:

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Commissioner for Patents

IDS submitted on 3-26-2010 had been considered on 5-14-2011. Attached is a newly-initialed copy, this to correct an erroneously omitted initial. No further action is deemed necessary at this time.

/Robert R Niquette/
Acting Examiner of Art Unit 3695

PTO-90C (Rev.04-03)

FORM PTO-1449		SERIAL NO. 12/132,487	CASE NO. 12654-42
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT		FILING DATE June 3, 2008	GROUP ART UNIT 3693
(use several sheets if necessary)	APPLICANT(S): Raymond Scott Ling et al.		CONFIRMATION NO. 7812

REFERENCE DESIGNATION **U.S. PATENT DOCUMENTS**

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(use several sheets if necessary)	APPLICANT(S): Raymond Scott Ling et al.	

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REFERENCE DESIGNATION U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER Number-Kind Code (if known)	DATE	NAME	CLASS/ SUBCLASS	FILING DATE
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EXAMINER INITIAL		OTHER ART – NON PATENT LITERATURE DOCUMENTS (Include name of author, title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published.
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/R.N./	A152	Vetronix Corporation Press Release article titled "Vetronix Corporation launches the Crash Data Retrieval (CDR) System," March 9, 2000, printed from the internet at <http://www.vetronix.com/company/press/vtx_2000-03-09_cdr.html> on September 8, 2004, 2 pages.
/R.N./	A153	Vetronix Corporation Press Release article titled "Vetronix Corporation to Provide 'AutoConnect' Vehicle Interface Solutions for the Clarion AutoPC," January 8, 1998, 1 page.
/R.N./	A154	WKGM/TV 6, check for payment to Ease Simulation, Inc. of invoice #9813, November 13, 1998, 1 page.

EXAMINER /Robert Niquette/	DATE CONSIDERED 5-14-2011

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Bib Data Sheet

CONFIRMATION NO. 7812

SERIAL NUMBER	FILING OR 371(c) DATE / RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/132,487	06/03/2008	705	3695	12654/42

APPLICANTS

Raymond Scott Ling, Westlake, OH;
Richard Ashton Hutchinson, Chagrin Falls, OH;
Wilbert John Steigerwald III, Kirtland, OH;
William Andrew Say, Macedonia, OH;
Patrick Lawrence O'Malley, Kirtland, OH;
Dane Allen Shrallow, Solon, OH;
William Curtis Everett, Hudson, OH;
Robert John McMillan, Divide, CO;

**** CONTINUING DATA ***************************

This application is a CIP of 10/764,076 01/23/2004 PAT 8090598
which is a CIP of 09/571,650 05/15/2000 PAT 6868386
which is a CIP of 09/135,034 08/17/1998 PAT 6064970
which is a CON of 08/592,958 01/29/1996 PAT 5797134

**** FOREIGN APPLICATIONS *********************

IF REQUIRED, FOREIGN FILING LICENSE GRANTED
** 06/13/2008

Foreign Priority claimed	35 USC 119 (a-d) conditions met	Verified and Acknowledged	STATE OR COUNTRY	SHEETS DRAWING	TOTAL CLAIMS	INDEPENDENT CLAIMS
☐ yes ☐ no	☐ yes ☐ no ☐ Met after Allowance	Examiner's Signature Initials	OH	35	130	13

ADDRESS
10999

TITLE

VEHICLE MONITORING SYSTEM

FILING FEE RECEIVED		
9098	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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10999 7590 01/12/2012
Progressive Casualty/BHGL
P.O. Box 10395
Chicago, IL 60610

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

James A. Collins, Reg. No. 43,557	(Depositor's name)
/James A. Collins/	(Signature)
February 9, 2012	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/132,487	06/03/2008	Raymond Scott Ling	12654/42	7812

TITLE OF INVENTION: VEHICLE MONITORING SYSTEM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1740	$0	$0	$1740	04/12/2012

EXAMINER	ART UNIT	CLASS-SUBCLASS
NIQUETTE, ROBERT R	3695	705-004000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Brinks Hofer Gilson & Lione
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Progressive Casualty Insurance Company
(B) RESIDENCE: (CITY and STATE OR COUNTRY): Mayfield Village, Ohio

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
- ☒ Issue Fee
- ☒ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (**Please first reapply any previously paid issue fee shown above**)
- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 23-1925 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
- ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature /James A. Collins/ Date February 9, 2012

Typed or printed name James A. Collins Registration No. 43,557

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Electronic Patent Application Fee Transmittal

Application Number:	12132487
Filing Date:	03-Jun-2008
Title of Invention:	VEHICLE MONITORING SYSTEM
First Named Inventor/Applicant Name:	Raymond Scott Ling
Filer:	James A. Collins/Lisa Hedl
Attorney Docket Number:	12654/42

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl issue fee	1501	1	1740	1740
Publ. Fee- early, voluntary, or normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**2040**

Electronic Acknowledgement Receipt	
EFS ID:	12041732
Application Number:	12132487
International Application Number:	
Confirmation Number:	7812
Title of Invention:	VEHICLE MONITORING SYSTEM
First Named Inventor/Applicant Name:	Raymond Scott Ling
Customer Number:	10999
Filer:	James A. Collins
Filer Authorized By:	
Attorney Docket Number:	12654/42
Receipt Date:	09-FEB-2012
Filing Date:	03-JUN-2008
Time Stamp:	17:40:11
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$2040
RAM confirmation Number	4833
Deposit Account	231925
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		42Papers.pdf	1865253 6df5270327cf2b3c8bc45b04ad87665f403be762	yes	2

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Transmittal Letter	1	1
Issue Fee Payment (PTO-85B)	2	2

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	31787 368ef89b4e1fbc47c98cefb28eee28c35a50c9fd	no	2

Warnings:

Information:

Total Files Size (in bytes):	1897040

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

CERTIFICATE OF EFS FILING UNDER 37 CFR §1.8

I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office, Commissioner for Patents, via the EFS pursuant to 37 CFR §1.8 on the below date:

Date: February 9, 2012 Name: James A. Collins, Reg. No. 43,557 Signature: /James A. Collins/

BRINKS HOFER GILSON &LIONE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Appln. of:	Ling, et al.		
Appln. No.:	12/132,487	Examiner:	Robert R. Niquette
Filed:	June 3, 2008	Art Unit:	3695
For:	VEHICLE MONITORING SYSTEM	Conf. No.:	7812
Attorney Docket No.:	12654-42		

TRANSMITTAL

Mail Stop Issue Fee
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Attached is/are:

☒ Form PTOL-1449 Part B – Fee(s) Transmittal

Fee calculation:

☐ No additional fee is required.

☐ Small Entity.

☐ An extension fee in an amount of $_____ for a _____-month extension of time under 37 CFR § 1.136(a).

☒ An Issue Fee in an amount of $1,740.00 and a Publication Fee in an amount of $300.00 for the Publication Fee.

☐ An additional filing fee has been calculated as shown below:

						Small Entity			Not a Small Entity	
	Claims Remaining After Amendment		Highest No. Previously Paid For	Present Extra		Rate	Add'l Fee	OR	Rate	Add'l Fee
Total		Minus				x $30=			x $60=	
Indep.		Minus		0		x 125=			x $250=	
First Presentation of Multiple Dep. Claim						+$225=			+ $450=	
						Total	$		Total	$0

Fee payment:

☒ Please charge Deposit Account No. 23-1925 in the amounts of $1,740.00 for the Issue Fee and $300.00 for the Publication Fee.

☐ Payment by credit card in the amount of $_____ (Form PTO-2038 is attached).

☒ The Director is hereby authorized to charge payment of any additional filing fees required under 37 CFR § 1.16 and any patent application processing fees under 37 CFR § 1.17 associated with this paper (including any extension fee required to ensure that this paper is timely filed), or to credit any overpayment, to Deposit Account No. 23-1925.

Respectfully submitted,

February 9, 2012
Date

/James A. Collins/
James A. Collins (Reg. No. 43,557)

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
12/132,487	06/03/2008	3695	9098	12654/42	130	13

CONFIRMATION NO. 7812

10999
Progressive Casualty/BHGL
P.O. Box 10395
Chicago, IL 60610

CORRECTED FILING RECEIPT

OC000000052460530

Date Mailed: 02/07/2012

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

Raymond Scott Ling, Westlake, OH;
Richard Ashton Hutchinson, Chagrin Falls, OH;
Wilbert John Steigerwald III, Kirtland, OH;
William Andrew Say, Macedonia, OH;
Patrick Lawrence O'Malley, Kirtland, OH;
Dane Allen Shrallow, Solon, OH;
William Curtis Everett, Hudson, OH;
Robert John McMillan, Divide, CO;

Assignment For Published Patent Application

Progressive Casualty Insurance Company, Mayfield Village, OH

Power of Attorney: The patent practitioners associated with Customer Number 00757

Domestic Priority data as claimed by applicant

This application is a CIP of 10/764,076 01/23/2004 PAT 8090598
which is a CIP of 09/571,650 05/15/2000 PAT 6868386
which is a CIP of 09/135,034 08/17/1998 PAT 6064970
which is a CON of 08/592,958 01/29/1996 PAT 5797134

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.)

If Required, Foreign Filing License Granted: 06/13/2008

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/132,487**

Projected Publication Date: Request for Non-Publication Acknowledged

Non-Publication Request: Yes

Early Publication Request: No

Title

VEHICLE MONITORING SYSTEM

Preliminary Class

705

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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UNITED STATES DEPARTMENT OF COMMERCE
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Alexandria, Virginia 22313-1450
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NOTICE OF ALLOWANCE AND FEE(S) DUE

10999 7590 01/12/2012

Progressive Casualty/BHGL
P.O. Box 10395
Chicago, IL 60610

EXAMINER	
NIQUETTE, ROBERT R	
ART UNIT	PAPER NUMBER
3695	

DATE MAILED: 01/12/2012

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/132,487	06/03/2008	Raymond Scott Ling	12654/42	7812

TITLE OF INVENTION: VEHICLE MONITORING SYSTEM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1740	$0	$0	$1740	04/12/2012

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

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III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

10999 7590 01/12/2012
Progressive Casualty/BHGL
P.O. Box 10395
Chicago, IL 60610

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/132,487	06/03/2008	Raymond Scott Ling	12654/42	7812

TITLE OF INVENTION: VEHICLE MONITORING SYSTEM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1740	$0	$0	$1740	04/12/2012

EXAMINER	ART UNIT	CLASS-SUBCLASS
NIQUETTE, ROBERT R	3695	705-004000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): (**Please first reapply any previously paid issue fee shown above**)
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ❑ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
- ❑ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/132,487	06/03/2008	Raymond Scott Ling	12654/42	7812

10999 7590 01/12/2012

Progressive Casualty/BHGL
P.O. Box 10395
Chicago, IL 60610

EXAMINER	
NIQUETTE, ROBERT R	

ART UNIT	PAPER NUMBER
3695	

DATE MAILED: 01/12/2012

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 557 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 557 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No.	Applicant(s)	
	12/132,487	LING ET AL.	
	Examiner	Art Unit	
	ROBERT NIQUETTE	3695	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

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 (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *communication received 11-29-2011*.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are *40-57,131 and 132*.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/Robert R Niquette/ Acting Examiner of Art Unit 3695	/CHARLES KYLE/ Supervisory Patent Examiner, Art Unit 3695

Detailed Action

This communication is in response to Applicant's communications filed on 11-29-2011. Claims 1-134 are pending in this application.

Examiner's Amendment/Comment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment must be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in phone conversation with Applicant's representative, Atty. Joseph Hanasz, (Reg. No. 54720) on 12-8-2011.

The application has been amended as follows:

IN THE CLAIMS

Claims 1-39, 58-130, 133 and 134 are cancelled.

Allowable Subject Matter

Claims are 40-57, 131 and 132 are allowed. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record (US5835008, *Colemere, Jr.*) teaches:

a processor that collects vehicle data from a vehicle bus that represents aspects of operating the vehicle;

a memory that stores selected vehicle data related to a level of safety or an insurable risk in operating a vehicle;

a wireless transmitter configured to transfer the selected vehicle data retained within the memory to a distributed network and a server;

a database operatively linked to the server to store the selected vehicle data transmitted by the wireless transmitter, the database comprising a storage system remote from the wireless transmitter and the memory comprising records with operations for searching the records and other functions;

Even though, the prior art of record teaches the above-mentioned features, the prior art of record fails to teach:

where the server is configured to process the selected vehicle data that represents one or more aspects of operating the vehicle with data that reflects how the selected vehicle data affects a premium of an insurance policy, safety or level of risk;

and where the server is further configured to generate a rating factor based on the selected vehicle data stored in the database.

For this reason claim 40 is deemed to be allowable over the prior art of record and claims 41-57, 131 and 132 are allowed by dependency on an allowed claim, the dependent claims being further limiting to the independent claims, definite and fully enabled by the Specification.

It appears that the instant invention is beyond the skill of one of ordinary skill in the art. Accordingly the invention would NOT have been obvious because one of ordinary skill could not have been expected to achieve it, NOR would they have been able to predict the results, and as such, they would have had no capability of expecting success.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Additional prior art made of record and not relied upon that is considered pertinent to applicant's disclosure can be found on the attached PTO-892. Any inquiry concerning this communication or earlier communications from the examiner should be directed to

Robert R. Niquette whose telephone number is 571-270-3613. The examiner can normally be reached on Monday through Thursday, 5:30 AM to 4:00 PM EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Kyle can be reached on 571-272-6746. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, http://portal.uspto.gov/external/portal/pair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert R Niquette/
Examiner, Art Unit 3695
1-11-2012

/CHARLES KYLE/
Supervisory Patent Examiner, Art Unit 3695

Notice of References Cited	Application/Control No. 12/132,487	Applicant(s)/Patent Under Reexamination LING ET AL.	
	Examiner ROBERT NIQUETTE	Art Unit 3695	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-5,835,008 A	11-1998	Colemere, Jr., Dale M.	340/439
*	B	US-6,714,894 B1	03-2004	Tobey et al.	702/188
*	C	US-2004/0153362 A1	08-2004	Bauer et al.	705/010
*	D	US-2006/0122749 A1	06-2006	Phelan et al.	701/035
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N	EP 1176054	09-2001	Europe	Lang et al.	B60R 1/00
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Lesser, et al. The Distributed Vehicle Monitoring Testbed: A Tool for Investigating Distributed Problem Solvinng Networks. The AI Magazine. Fall, 1983.
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12132487	LING ET AL.
	Examiner	Art Unit
	ROBERT NIQUETTE	3695

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	05/17/2011	12/02/2011							
	1	N	-							
	2	N	-							
	3	N	-							
	4	N	-							
	5	N	-							
	6	N	-							
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	34	N	-							
	35	N	-							
	36	N	-							

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
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	ROBERT NIQUETTE	3695

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☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
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	38	N	-							
	39	N	-							
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8	47	✓	=							
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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
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	Examiner	Art Unit
	ROBERT NIQUETTE	3695

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☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
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	108	N	-							

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12132487	LING ET AL.
	Examiner	Art Unit
	ROBERT NIQUETTE	3695

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
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	127	N	-							
	128	N	-							
	129	N	-							
	130	N	-							
19	131	✓	=							
20	132	✓	=							
	133	N	-							
	134	N	-							

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12132487	LING ET AL.
	Examiner	**Art Unit**
	ROBERT NIQUETTE	3695

ORIGINAL		INTERNATIONAL CLASSIFICATION												
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED							
705	4	G	0	6	Q	40 / 00 (2012.01.01)								

CROSS REFERENCE(S)					
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
340	439				
702	188				

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
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	2		21	1	40		59		78		97		116		
	3		22	2	41		60		79		98		117		
	4		23	3	42		61		80		99		118		
	5		24	4	43		62		81		100		119		
	6		25	5	44		63		82		101		120		
	7		26	6	45		64		83		102		121		
	8		27	7	46		65		84		103		122		
	9		28	8	47		66		85		104		123		
	10		29	9	48		67		86		105		124		
	11		30	10	49		68		87		106		125		
	12		31	11	50		69		88		107		126		
	13		32	12	51		70		89		108		127		
	14		33	13	52		71		90		109		128		
	15		34	14	53		72		91		110		129		
	16		35	15	54		73		92		111		130		

/ROBERT NIQUETTE/ Acting Examiner.Art Unit 3695 (Assistant Examiner)	12/02/2011 (Date)	**Total Claims Allowed:** 20	
/CHARLES KYLE/ Supervisory Patent Examiner.Art Unit 3695 (Primary Examiner)	01/11/2012 (Date)	O.G. Print Claim(s) 40	O.G. Print Figure 1

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12132487	LING ET AL.
	Examiner	**Art Unit**
	ROBERT NIQUETTE	3695

☒ **Claims renumbered in the same order as presented by applicant** ☐ **CPA** ☐ **T.D.** ☐ **R.1.47**

	17		36	16	55		74		93		112	19	131		
	18		37	17	56		75		94		113	20	132		
	19		38	18	57		76		95		114		133		

/ROBERT NIQUETTE/ Acting Examiner.Art Unit 3695 (Assistant Examiner)	12/02/2011 (Date)	**Total Claims Allowed:** 20	
/CHARLES KYLE/ Supervisory Patent Examiner.Art Unit 3695 (Primary Examiner)	01/11/2012 (Date)	O.G. Print Claim(s) 40	O.G. Print Figure 1

FORM PTO-1449		SERIAL NO. 12/132,487	CASE NO. 12654-42
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT		FILING DATE June 3, 2008	GROUP ART UNIT 3695
(use several sheets if necessary)	APPLICANT(S): Raymond Scott Ling et al.		CONFIRMATION NO. 7812

REFERENCE DESIGNATION **U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER Number-Kind Code (if known)	DATE	NAME	CLASS/ SUBCLASS	FILING DATE
/R.N./	F1	US 4,710,694	12/01/1987	Sutphin et al.		
/R.N./	F2	US 4,742,290	05/03/1988	Sutphin et al.		
/R.N./	F3	US 6,154,658	11/28/2000	Caci		
/R.N./	F4	US 6,236,933 B1	05/22/2001	Lang		
/R.N./	F5	US 6,330,499 B1	12/11/2001	Chou et al.		
/R.N./	F6	US 6,370,449 B1	04/09/2002	Razavi et al.		
/R.N./	F7	US 2002/095249 A1	07/18/2002	Lang		
/R.N./	F8	US 2002/152115 A1	10/17/2002	Morita et al.		
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/R.N./	F20	US 7,774,217 B1	08/10/2010	Yager et al.		
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/R.N./	F24	WO 2004/040405 A3	05/13/2004	WIPO		

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/R.N./	F25	AutoWatch - It's There When You're Not, "Are you a business or fleet owner who is interested in knowing when and how your vehicle's are being driven?," EASE Diagnostics, 2 pages.
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EXAMINER	DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	SERIAL NO. 12/132,487	CASE NO. 12654-42
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT	FILING DATE June 3, 2008	GROUP ART UNIT 3695
(use several sheets if necessary)	APPLICANT(S): Raymond Scott Ling et al.	

EXAMINER INITIAL	OTHER ART – NON PATENT LITERATURE DOCUMENTS (Include name of author, title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published.	
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/R.N./	F34	Sierra Research Proposal, "Incorporation of Radio Transponders into Vehicular On-Board Diagnostic Systems, Vol. 3 – Cost Proposal," Sierra Research, Inc., February 27, 1996, 18 pages.
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EXAMINER /Robert Niquette/	DATE CONSIDERED 11/30/2011

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APPLICANTS

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**** CONTINUING DATA **************************

This application is a CIP of 10/764,076 01/23/2004
which is a CIP of 09/571,650 05/15/2000 PAT 6,868,386
which is a CIP of 09/135,034 08/17/1998 PAT 6,064,970
which is a CON of 08/592,958 01/29/1996 PAT 5,797,134

**** FOREIGN APPLICATIONS **************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****

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Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /ROBERT R NIQUETTE/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		OH	35	20	1

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Progressive Casualty/BHGL
P.O. Box 10395
Chicago, IL 60610
UNITED STATES

TITLE

VEHICLE MONITORING SYSTEM

FILING FEE RECEIVED		
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Appln. of:	Raymond Scott Ling et al.		
Appln. No.:	12/132,487	Examiner:	Robert R. Niquette
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FIFTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

This application claims priority under 35 USC §120 to the following United States patent applications: 08/592,958; 09/135,034; 09/571,650; and 10/764,076. In accordance with 37 CFR §1.98(d), copies of the references cited herein which were submitted to, or cited by, the office, in compliance with 37 CFR §1.98(a)-(c) in the earlier application may not be provided herewith. The Examiner is directed to those references cited in all Information Disclosure Statements filed in the priority United States patent applications cited above in addition to the references cited herein.

In accordance with the duty of disclosure under 37 CFR §1.56 and §§1.97-1.98, and more particularly in accordance with 37 CFR §1.97(c), Applicants hereby cite the following reference(s):

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/R.N./	US 2006/0111817 A1	05/25/2006	Phelan et al.
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	DOCUMENT NO.	DATE	COUNTRY
/R.N./	WO 2004/040405 A2	05/13/2004	WIPO
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Applicants are enclosing Form PTO-1449 (two sheets), along with a copy of each listed reference for which a copy is required under 37 CFR §1.98(a)(2). As each of the listed references is in English, no further commentary is believed to be necessary, 37 C.F.R §1.98(a)(3). Applicants respectfully request the Examiner's consideration of the above reference(s) and entry thereof into the record of this application.

Applicants also respectfully request the Examiner to review the claims and the prosecution history, including any Office Actions issued by the U.S. Patent and Trademark Office and any responses filed by Applicants, for Serial No. 08/592,958 (now U.S. Pat. No. 5,797,134), Serial No. 09/135,034 (now U.S. Pat. No. 6,064,970), Serial No. 09/571,650 (now U.S. Pat. No. 6,868,386), Serial No. 10/764,076, Serial No. 11/868,827, and reexamination of U.S. Pat. No. 6,064,970 (Serial No. 90/011,252).

U.S. Patent No. 6,064,970 is the subject of litigation in two cases pending in the U.S. District Court for the Northern District of Ohio: (1) *Progressive Casualty Insurance Company v. Safeco Insurance Company of Illinois, et al.,* Case No. 1:10-cv-01370; and (2) *Progressive Casualty Insurance Company v. Allstate Insurance Company et al.*, Case No. 1:11-cv-00082.

By submitting this Statement, Applicants are attempting to fully comply with the duty of candor and good faith mandated by 37 CFR §1.56. As such, this Statement is not intended to constitute an admission that any of the enclosed references, or other information referred to therein, constitutes "prior art" or is otherwise "material to patentability," as that phrase is defined in 37 CFR §1.56(a).

Applicants have calculated a processing fee in the amount of $180.00 to be due under 37 CFR §1.17(p) in connection with the filing of this Information Disclosure Statement. Applicants have enclosed a check covering this fee, or authorized charging the fee to a deposit account or credit card, as indicated in the Transmittal accompanying this Information Disclosure Statement.

Respectfully submitted,

November 29, 2011 /Joseph S. Hanasz/
Date Joseph S. Hanasz (Reg. No. 54,720)

/Robert Niquette/ 12/31/2011

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(54) Überwachungseinrichtung für Kraftfahrzeuge

(57) Es wird ein Rückspiegel für Fahrzeuge bereitgestellt, bei dem eine optische Anzeigeeinrichtung in Form eines Monitors angeordnet ist. Der Monitor ist mit einer Kamera verbunden, die einen Sichtbereich vor, neben und/oder hinter dem Fahrzeug erfaßt.

EP 1 176 054 A2

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Beschreibung

[0001] Die Erfindung betrifft eine Überwachungseinrichtung für Kraftfahrzeuge, insbesondere für Nutzfahrzeuge.

[0002] Bei Flugzeugen ist eine sogenannte Blackbox bekannt, die jeweils die Flugdaten zwischen einem Zeitpunkt in der Vergangenheit und der Gegenwart, z. B. der letzten halben Stunde, aufzeichnet. Zusätzlich sind auch sogenannte Voice-Recorder vorgesehen, mittels denen die Gespräch im Cockpit eines Flugzeuges für eine bestimmte Zeitdauer zwischen einem Zeitpunkt in der Vergangenheit und der Gegenwart aufgezeichnet werden. Damit diese Daten im Falle eines Absturzes ausgewertet werden können, sind sowohl Blackbox als auch Voice-Recorder stoß- und feuerfest in das Flugzeug installiert.

[0003] Es ist Aufgabe der vorliegenden Erfindung eine vergleichbare Überwachungseinrichtung für Kraftfahrzeuge, insbesondere für Nutzfahrzeuge zu schaffen.

[0004] Die Lösung dieser Aufgabe erfolgt durch die Merkmale des Anspruchs 1.

[0005] Durch eine in dem Fahrzeug installierte Kamera aufgenommene Bilder werden in einem Zeitintervall in der Vergangenheit ziwschen einem ersten Zeitpunkt t_1 und einem zweiten Zeitpunkt t_2 auf einer Bild- und Datenspeichereinheit gespeichert. Aufnahmen, die älter als t_1 sind, werden wieder gelöscht bzw. überschrieben. Durch die in einer Bild- und Datenspeichereinrichtung aufgezeichneten und gespeicherten Bilder lassen sich Unfallhergänge einfacher und sicherer rekonstruieren und folglich auch die Schuldfrage bei einem Unfall leichter klären.

[0006] Zusätzlich können auch bestimmte Zeitintervalle in der Vergangenheit zusätzlich zu dem Zeitintervall in der jüngsten Vergangenheit abgespeichert werden. Bei zu geringem Abstand zum Vorderfahrzeug auf Autobahnen kann damit gegebenenfalls nachgewiesen werden, dass das Vorderfahrzeug mit zu geringem Abstand eingeschert ist.

[0007] Gemäß einer bevorzugten Ausführungsform der Erfindung wird automatisch immer eine bestimmte Zeitspanne zwischen Gegenwart und einem Zeitpunkt t_1 in der Vergangenheit aufgezeichnet und gespeichert, während Aufnahmen, die älter als t_1 sind wieder gelöscht bzw. überschrieben werden.

[0008] Gemäß einer weiteren bevorzugten Ausführungsform der Erfindung ist die Kamera in einem der Außenrückblickspiegel untergebracht. Damit kann der seitliche Bereich eines Kraftfahrzeugs mitüberwacht werden.

[0009] Alternativ ist die Kamera auch im Inneren des Kraftfahrzeugs, vorzugsweise im Bereich des Rückblickspiegels nach vorne schauend angeordnet. Durch die Anordnung der Kamera im Fahrzeuginneren ist eine wetterfeste Ausstattung der Kamera nicht notwendig.

[0010] Gemäß einer weiteren bevorzugten Ausführungsform der Erfindung werden in der Bild- und Datenspeichereinrichtung zu den Bildern Daten, wie Fahrzeugeschwindigkeit, Temperatur, Datum, usw. aufgezeichnet. Hierdurch läßt sich ebenfalls im Falle eines Unfalls der Unfallhergang leichter rekonstruieren und die Schuldfrage leichter lösen.

[0011] Gemäß einer weiteren bevorzugten Ausführungsform der Erfindung ist die Bild- und Datenspeichereinrichtung stoß- und feuerfest ausgebildet. Damit wird gewährleistet, dass auch bei schweren Unfällen, bei denen das Fahrzeug Feuer fängt oder bei dem starke Verformungen des Fahrzeugs erfolgen, die gespeicherten Daten für eine spätere Auswertung erhalten bleiben.

[0012] Gemäß einer weiteren bevorzugten Ausführungsform der Erfindung ist ein Monitor vorgesehen, auf dem das von der Kamera aufgenommene Bild wiedergegebe werden kann. Hierdurch läßt sich die Aufnahmequalität und der Blickwinkel der Kamera überwachen. Auch kann der Monitor hilfreich beim Rangieren des Fahrzeugs sein.

[0013] Durch die Anordnung des Monitors im Außensrückblickspiegel im Sichtbereich des Fahres, insbesondere im der Spiegelscheibe, kann beim Rückwärstfahren bzw. Rangieren durch Blick in den Rückblickspiegel gleichzeitig der rückwertige Bereich - im Spiegel - und der Bereich vor dem Fahrzeig - im Monitor - erfaßt werden.

[0014] Gemäß einer weiteren vorteilhaften Ausführungsform der Erfindung ist die Kamera schwenkbar ausgebildet, so daß sich unterschiedliche Bereiche rund um das Fahrzeug mit der Kamera erfassen und in dem Monitor anzeigen lassen. Beim Rückwärstsfahren kann so auch der Bereich hinter dem Fahrzeug im Monitor angezeigt werden, während bei normaler Vorwärtsfahrt der Bereich vor dem Fahrzeug von der Kamera erfaßt werden.

[0015] Gemäß einer weiteren vorteilhaften Ausgestaltung der Erfindung läßt sich die Blickrichtung der Kamera mittels einer im Zugriffsbereich des Fahrers angeordneten Bedienungseinrichtung verändern, so daß der Fahrer unterschiedliche Bereiche rund um das Fahrzeug im Monitor zur Anzeige bringen kann.

[0016] Gemäß einer weiteren vorteilhaften Ausgestaltung der Erfindung ist eine Mehrzahl von Kameras vorgesehen. Hierdurch lassen sich durch Umschalten zwischen den einzelnen Kameras ebenfalls unterschiedliche Bereich rund um das Fahrzeug im Monitor darstellen. Hierdurch erübrigt sich das Schwenken einer Kamera. Die jeweilige Kamera kann in der optimalen Position für den jeweils zu überwachenden Bereich angeordnet werden. Die Kamera für das Rückwärtsfahren ist sinnvollerweise an der Rückseite des Fahrzeugs anzubringen. In der Bild- und Datenspeichereinrichtung können die Bilder der jüngsten Vergangenheit wahlweise von einer oder von der Mehrzahl der Kameras abgespeichert werden.

[0017] Weitere Einzelheiten, Merkmale und Vorteile

der Erfindung ergeben sich aus der nachfolgenden Beschreibung bevorzugter Ausführungsformen anhand der Zeichnung.

[0018] Es zeigt:

Fig. 1 eine schematische Darstellung der Erfindung,

Fig. 2 eine schematische Darstellung einer ersten bevorzugten Ausführungsform der Erfindung,

Fig. 3 eine schematische Darstellung einer zweiten Ausführungsform mit der Kamera im Außenspiegel,

Fig. 4 eine Ansicht des Außenspiegels der zweiten Ausführungsform mit Monitor in der Spiegelscheibe, und

Fig. 5 eine schematische Darstellung einer dritten bevorzugten Ausführungsform mit einer Mehrzahl von Kameras.

[0019] Fig. 1 zeigt schematische den grundsätzlichen Aufbau der Erfindung mit einer Kamera 2, die mit einer Bild- und Datenspeichereinrichtung 4 verbunden ist. Die Bild- und Datenspeichereinrichtung 4 umfaßt eine Steuereinrichtung 6, die die Aufzeichnung der von der Kamera 2 gelieferten Bilddaten steuert. Hierdurch wird in der einfachsten Ausführungsform gewährleistet, dass beispielsweise immer die letzten zehn Minuten aufgezeichnet und gespeichert werden. Mittels einer Schnittstelleneinrichtung 8 kann der Fahrzustand des Fahrzeugs erfaßt werden, so dass die Aufzeichnung bei Fahrzeugstillstand gestoppt wird. Über die Schnittstelleneinrichtung 8 können auch andere Fahrzeugzustandsdaten, wie Geschwindigkeit, Beschleinigung, Betätigung der Bremsen, Temperatur, Fahrbahnzustand, Feuchtigkeit, Datum, Uhrzeit, Helligkeit, usw., die von entsprechenden Sensoren oder von anderen im Fahrzeug vorhandenen Einrichtungen geliefert werden, in der Bild- und Datenspeichereinrichtung 4 zu den erfaßten Bilddaten gespeichert werden.

[0020] Die Kamera 2 kann im Fahrzeuginneren oder außen am Fahrzeug angeordnet sein und einen Blickwinkel in, vor, hinter oder seitlich von dem Fahrzeug erfassen. Die Bild- und Datenspeichereinrichtung 4 mit Steuereinrichtung 6 kann an beliebiger, geschützter Stelle im Fahrzeug angebracht werden. Mittels einer Bedienungseinrichtung 10 lassen sich die Zeitpunkte t_1 und t_2 festlegen zwischen denen die Bildaufzeichnung erfolgt. Mit der Bedienungseinrichtung 10 im Zusammenwirken mit der Steuereinrichtung 6 können auch während der Fahrt zusätzlich zu den immer gespeicherten letzten Minuten auch Zeitintervalle in der Vergangenheit zusätzlich abgespeichert werden. Damit ist z. B. möglich bei einer Autobahnfahrt nachzuweisen, dass ein vorausfahrendes Fahrzeug zu dicht eingeschert ist und dass dadurch ein zu geringer Abstand zum vorausfahrenden Fahrzeug entstanden ist.

[0021] Zusätzlich kann auch ein Monitor 12 mit der Kamera 2 und/oder der Bild- und Datenspeichereinrichtung 4 verbunden sein. Auf dem Monitor 12 kann das durch die Kamera 2 aufgenommene Bild dargestellt werden. Mit der Bedienungseinrichtung 10 kann auch der Blickwinkel der Kamera 2 verändert werden, falls die Kamera 2 verschwenkbar ausgeführt ist. Bei der Kamera 2 handelt es ich vorzugsweise um eine CCD-Kamera und bei dem Monitor 12 kann ein LCD-Schirm verwendet werden.

[0022] Fig. 2 zeigt schematisch eine erste einfache Ausführungsform der Erfindung in einem Personenkraftwagens 14. Die Kamera 2 ist im Inneren des Personenkraftwagens 14 im Bereich eines Innenrückblickspiegels 16 in Fahrtrichtung schauend angeordnet. Die Bild- und Datenspeichereinrichtung 4 mit Steuereinrichtung 6 ist an beliebiger geschützter Stelle im Pkw 14 angeordnet.

[0023] Die Figuren 3 und 4 zeigen die Anordnung der Kamera 2 und des Monitors 12 in einem Außenrückblickspiegel 18 eines nicht näher dargestellten Nutzfahrzeugs. Der Außenrückblickspiegel 18 umfaßt ein Spiegelgehäuse 20 mit einem unteren Hauptspiegel 22 mit Spiegelscheibe 23 und einem oberen Zusatzsspiegel 24 mit Spiegelscheibe 25. Mittels zwei Haltearmen 26 sind die beiden Spiegel 22 und 24 und das Spiegelgehäuse 20 an einem Spiegelfuß 28 befestigt, der wiederum an dem nicht näher dargestellten Nutzfahrzeug montiert ist. Die Kamera 2 ist hinter dem Zusatzspiegel 24 im Inneren des Spiegelgehäuses 20 angeordnet. Durch eine Kameraöffnung 30 im Spiegelgäuse 20 erfaßt die Kamera 2 einen Blickwinkel in Fahrtrichtung des Nutzfahrzeugs. Die Bild- und Datenspeichereinrichtung - nicht dargestellt - ist an geeigneter Stelle im Nutzfahrzeug untergebracht. Der Monitor 12 ist bei dieser Ausführungsform in den unteren Bereich des Hauptspiegels 22 in die Spiegelscheibe 24 integeriert. Durch die Anordnung des Monitors 12 in der Spiegelscheibe 24 kann der Fahrer mit einem Blick der rückwärtigen Bereich - im Haupt- und Zusatzspiegel 22 und 24 - und den Bereich vor dem Nutzfahrzeug - im Monitor 12 - beobachten.

[0024] Fig. 5 zeigt schematisch eine zweite Ausführungsform der Erfindung, bei der in einem Sattelzug 32 eine vordere Kamera 34 schwenkbar auf dem Dach der Zugmaschine angeordnet ist. Eine zweite, rückwärtige Kamera 36 ist im rückwärtigen Bereich des Anhängers entgegen der Fahrtrichtung blickend angeordnet. In einem linken, seitlichen Außenrückblickspiegel 38 ist der Monitor 12 angeordnet, der sich mittels der im Zugriffsbereich des Fahrers angeordneten Bedienungseinrichtung 10 wahlweise mit der vorderen schwenkbaren Kamera 34 oder mit der rückwärtigen Kamera 36 verbinden läßt. Die schwenkbare Kamera 34 läßt sich über die Bedienungseinrichtung 10 schwenken, wodurch sich der Blickwinkel der vorderen Kamera 34 und der erfaßte Bereich ändern läßt.

[0025] Beim Rückwärtsfahren läßt sich durch entsprechendes Umschalten mittels der Bedieneinrichtung 10 das Bild der rückwärtigen Kamera 36 auf den Monitor 12 schalten, so daß im linken Außenrücksblickpiegel 38 das Blickfeld der rückwärtigen Kamera 36 dargestellt ist. Bei Bedarf kann der Fahrer dann über die Bedienungseinrichtung 10 das Blickfeld der vorderen Kamera 34 auf den Monitor 12 schalten.

[0026] Die Bild- und Datenspeichereinrichtung 4 mit Steuereinrichtung 6 ist wiederum an geeigneter Stelle im Sattelzug 32 angeordnet. Hierbei wird durch die Steuereinrichtung 6 die Aufzeichnung und Speicherung der jeweils jüngsten Vergangenheit so gesteuert, dass sowohl die Bilder der vorderen Kamera 34 als auch das Bild der rückwärtigen Kamera 36 gespeichtert werden.

[0027] Die Anordnung der Kameras 2, 34, 36 und Monitor 12 im Außenrückblickspiegel 18 bzw. 34 ist Gegenstand der bereits hinterlegten deutschen Patentanmeldung 10036875.1. Insofern wird auf die Patentanmeldung 10036875.1 vollinhaltlich bezug genommen.

Bezugszeichenliste:

[0028]

2	Kamera
4	Bild- und Datenspeichereinrichtung
6	Steuereinrichtung
8	Schnittstelleneinrichtung
10	Bedienungseinrichtung
12	Monitor
14	Personenkraftwagen
16	Innenrückblickspiegel
18	Außenrückblickspiegel
20	Spiegelgehäuse
22	Hauptspiegel
23	Spiegelscheibe von 22
24	Zusatzspiegel
25	Spiegelscheibe von 24
26	Haltearme
28	Spiegelfuß
30	Kameraöffnung in 20
32	Sattelzug
34	vordere, schwenkbare Kamera
36	rückwärtige Kamera
38	linker Außenrückblickspiegel

Patentansprüche

1. Überwachungseinrichtung für Kraftfahrzeuge (14; 32), insbesondere Nutzfahrzeuge (32), mit

   einer Kamera (2; 34, 36) zum Aufnehmen von Einzel- und/oder Laufbildern, wobei die Kamera (2) einen Sichtbereich in, vor, seitlich und/oder hinter dem Fahrzeug (14, 32) erfaßt, und mit einer Bild- und Datenspeichereinrichtung (4), die mit der Kamera (2; 34, 36) verbunden ist, zum Aufzeichnen und Speichern von der Kamera (2; 34, 36) aufgenommenen Bildern, wenigstens für ein Zeitintervall zwischen einem ersten Zeitpunkt t_1 in der Vergangenheit und einem zweiten Zeitpunkt t_2, der zwischen dem ersten Zeitpunkt t_1 und der Gegenwart liegt.

2. Überwachungseinrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** der zweite Zeitpunkt t_2 die Gegenwart ist.

3. Überwachungseinrichtung nach einem der vorhergehenden, **dadurch gekennzeichnet, dass** die Kamera (2) in einem Außenspiegel (18) angeordnet ist.

4. Überwachungseinrichtung nach einem der vorhergehenden, **dadurch gekennzeichnet, dass** die Kamera (2) im Innern des Kraftfahrzeugs (14), vorzugsweise im Bereich des Innenrückblickspiegels (16) angeordnet ist.

5. Überwachungseinrichtung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** in der Bild- und Datenspeichereinrichtung (4) zu den Bildern Daten, wie Fahrzeugeschwindigkeit, Temperatur, Datum, usw. aufgezeichnet werden.

6. Überwachungseinrichtung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Bild- und Datenspeichereinrichtung (4) stoß- und feuerfest ausgebildet ist.

7. Überwachungseinrichtung nach einem der vorhergehenden Ansprüche, **gekennzeichnet durch** einen Monitor (12) zur Darstellung der **durch** die Kamera (2; 34, 36) aufgenommenen Bilder.

8. Überwachungseinrichtung nach Anspruch 7, **dadurch gekennzeichnet, dass** der Monitor (12) in einem Außenspiegel (18; 38) mit Spiegelscheibe (23, 25) im Sichtbereich des Fahrers angeordnet ist.

9. Überwachungseinrichtung nach Anspruch 8, **dadurch gekennzeichnet, dass** der Monitor (12) im Bereich der Spiegelscheibe (23, 25), insbesondere im Randbereich der Spiegelscheibe (23, 25) angeordnet ist.

10. Überwachungseinrichtung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Kamera (36) schwenkbar ist.

11. Überwachungseinrichtung nach einem der vorhergehenden Ansprüche, **gekennzeichnet durch** eine Bedienungseinrichtung (10) im Bereich des Fah-

Page 000046

rers zum Schwenken und Verändern der Blickrichtung der Kamera (2; 36, 34).

12. Überwachungseinrichtung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** eine Mehrzahl von Kameras (34, 36) vorgesehen ist.

13. Überwachungseinrichtung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** eine Mehrzahl von Monitoren (12) vorgesehen ist.

14. Überwachungseinrichtung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** in dem wenigstens einen Monitor (12) gleichzeitig unterschiedliche Bilder darstellbar sind.

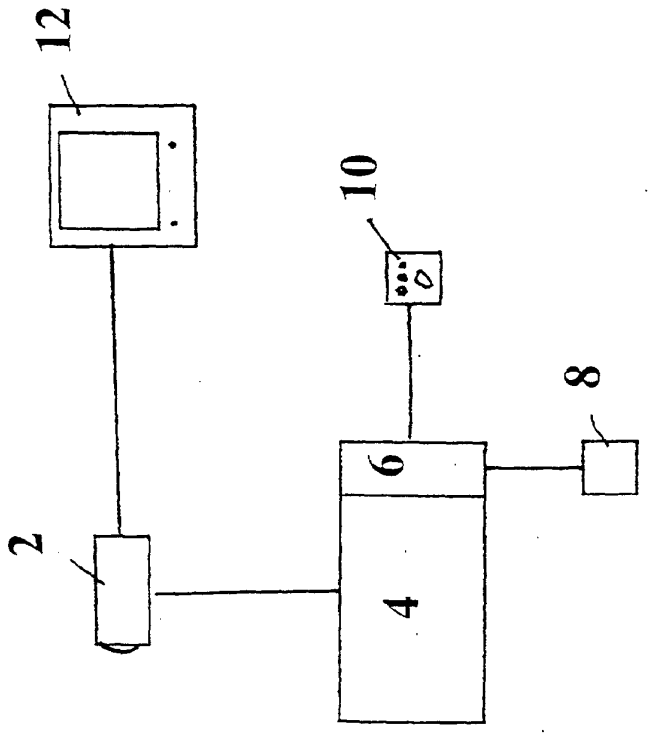


FIG. 1

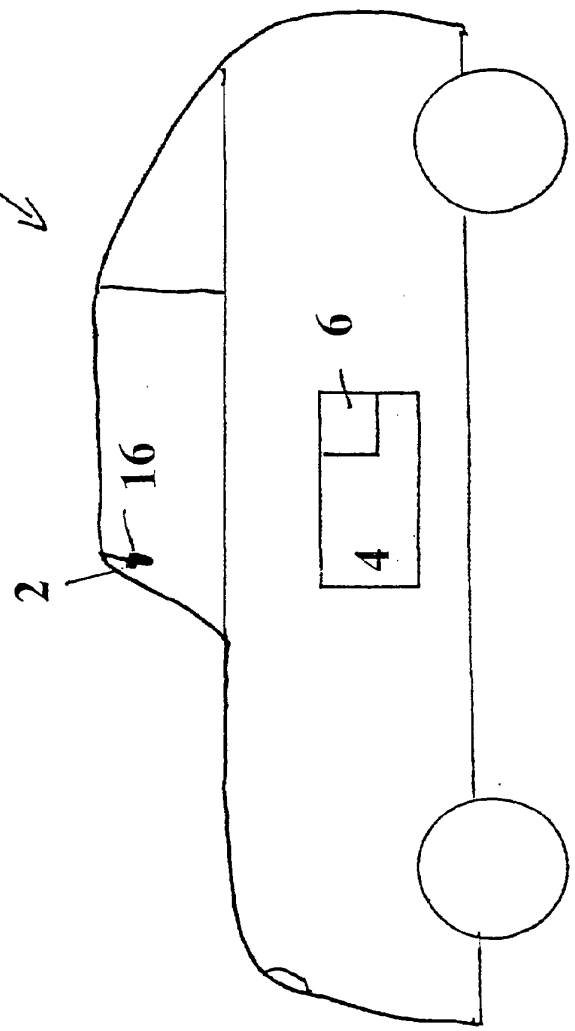


FIG. 2

FIG. 3

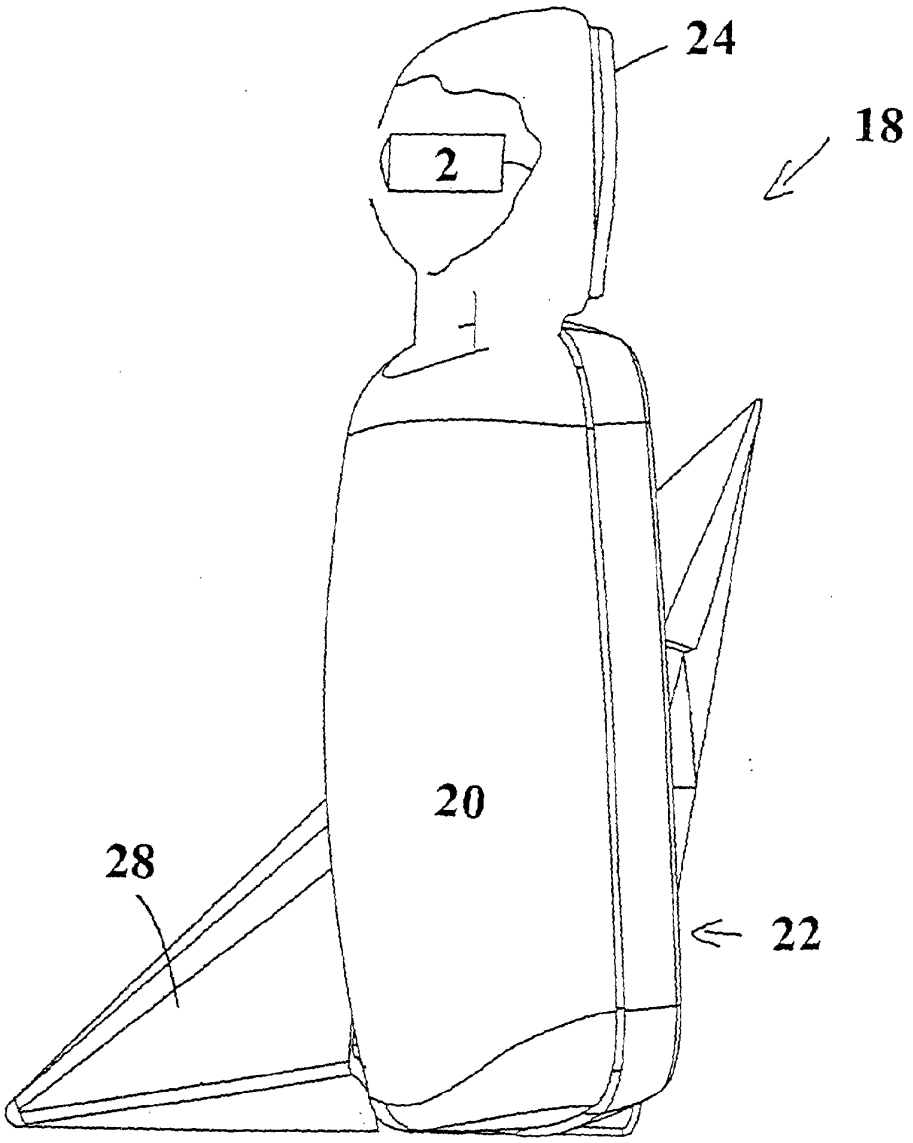
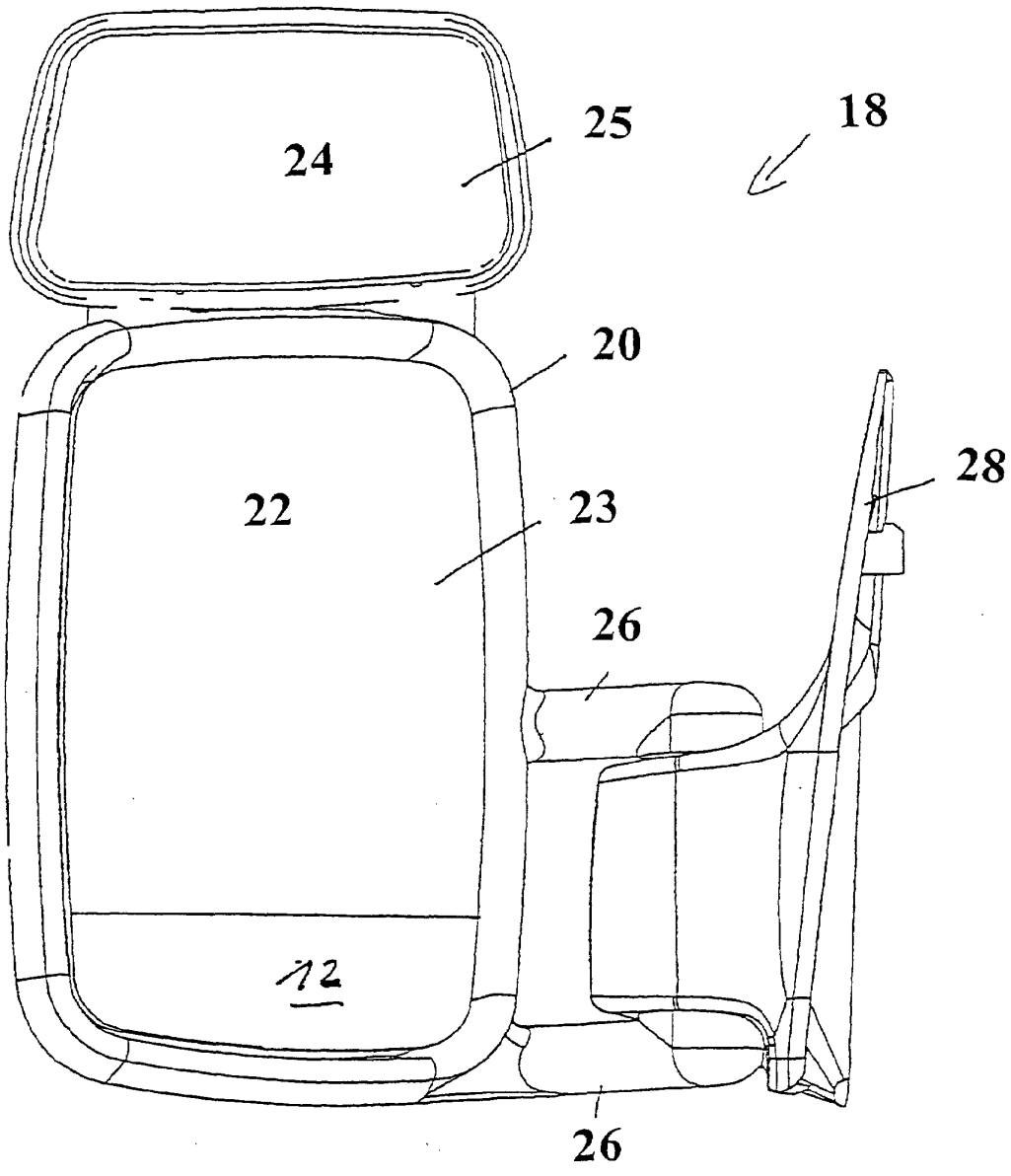


FIG. 4



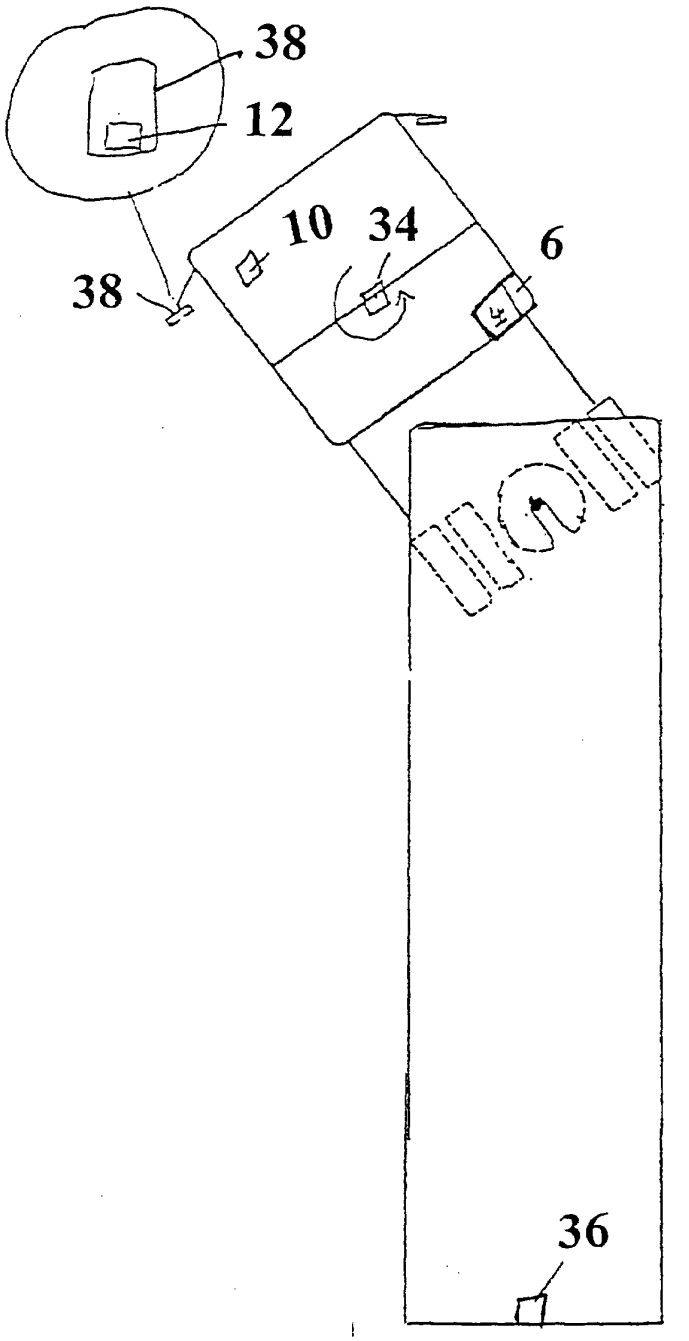


FIG. 5

?

? show files

```
File  16:Gale Group PROMT(R) 1990-2011/Dec 13
         (c) 2011 Gale/Cengage
File 148:Gale Group Trade & Industry DB 1976-2011/Dec 14
         (c) 2011 Gale/Cengage
File 160:Gale Group PROMT(R) 1972-1989
         (c) 1999 The Gale Group
File 275:Gale Group Computer DB(TM) 1983-2011/Dec 16
         (c) 2011 Gale/Cengage
File 621:Gale Group New Prod.Annou.(R) 1985-2011/Dec 16
         (c) 2011 Gale/Cengage
```

? ds

```
Set     Items   Description
S1    7097022   RECORD? ? OR RECORDING OR TRACKING OR TRACK? ? OR MONITOR?
S2    1521930   BEHAVIO? OR HABITS OR PATTERN? OR DRIVING()(TECHNIQUE? OR -
             SKILL? OR STYLE?)
S3    1989568   VECHICLE? OR CAR OR CARS OR AUTOMOBLE? OR SUV OR TRUCK OR -
            TRUCKS
S4    2182385   SPEED OR SPEEDING OR HOW()FAST
S5     152204   BRAKING OR BRAKE?
S6     110160   INSURANCE(3N)(RATE OR RATES OR PREMIUMS)
S7   22000865   DATA OR INFORMATION OR METRICS
S8    1775778   DRIVER OR DRIVING OR DRIVERS
S9      79901   S1(15N)S8
S10     86774   S1(15N)S2
S11     86258   S1(15N)S3
S12      9196   S11(10N)S8
S13       975   S12(15N)(S2 OR S4 OR S5)
S14        47   S13 AND S6
S15        23   RD  (unique items)
S16        16   S15/1996:2011
S17         7   S15 NOT S16
S18      3090   S9(15N)S4
S19       238   S18(15N)S5
S20        49   S19 AND INSURANCE
S21        47   S20/1996:2011
S22         2   S20 NOT S21
S23         2   RD  (unique items)
S24         2   S23 NOT S17
```

?

17/3,K/1 (Item 1 from file: 148)
DIALOG(R)File 148: Gale Group Trade & Industry DB
(c) 2011 Gale/Cengage. All rights reserved.

07498383 **Supplier Number:** 15664977 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Illinois group cites Kemper for redlining. (Kemper Corp.)

Mulcahy, Colleen
National Underwriter Property & Casualty-Risk & Benefits Management , n31 , p3(2)
August 1 , 1994
ISSN: 1042-6841
Language: ENGLISH
Record Type: FULLTEXT; ABSTRACT
Word Count: 651 **Line Count:** 00052

Abstract: The Illinois Public Action Council has accused Kemper Corp of discrimination in automobile insurance rates . The company is charged with placing higher rates on various neighborhoods in Chicago over nearby ...
Abstract:
...the Chicago-based organization which conducted the study.
"Rates should be based on relevant risks-- driving patterns , safety record , personal claims history, car model--not on your skin color, your accent or your zip code," Mr. McNary said...

17/3,K/2 (Item 2 from file: 148)
DIALOG(R)File 148: Gale Group Trade & Industry DB
(c) 2011 Gale/Cengage. All rights reserved.

06774656 **Supplier Number:** 14793449 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Foreclosing on fraud. (fraud prevention) (Investigation Techniques)

Hutchison, Ty
Security Management , v37 , n11 , p31(4)
Nov , 1993
ISSN: 0145-9406
Language: ENGLISH
Record Type: FULLTEXT; ABSTRACT
Word Count: 2223 **Line Count:** 00175

Text:
...health care costs. Some of this tab, which is picked up by businesses through higher insurance premiums , comes from fraudulent workers' compensation claims and staged accidents involving commercial vehicles. Factor in the...

...a tidy profit.
Besides defrauding insurance companies and businesses that must pay sky-high vehicle insurance premiums , the scheme can turn deadly. Last year, the capper of a Southern California staged accident...

...potential swoop-and-squat accident. If an automobile crammed with passengers is slowing down and speeding up in an attempt to cut in front of the track , the truck driver should immediately pull over to the side of the road and stop or turn off...

...enough of these clinics are forced to shut down, fraudulent claims will

17/3,K/3 (Item 3 from file: 148)
DIALOG(R)File 148: Gale Group Trade & Industry DB
(c) 2011 Gale/Cengage. All rights reserved.

04920449 **Supplier Number:** 09042178 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Fleet operations. (special advertising section)

Hubbard, J. Paul
Financial World , v159 , n22 , p44(8)
Oct 30 , 1990
ISSN: 0015-2064
Language: ENGLISH
Record Type: FULLTEXT
Word Count: 5861 **Line Count:** 00469
...year costs the U.S. $100 billion, not only because of repair costs, but increased insurance premiums , loss of employee productivity, lawsuits and vehicle-replacement costs. Of these accidents, the Automobile Association...

...proven to reduce fleet vulnerability to accidents. First, is a procedure that simply checks employees' driving records prior to issuing them a company car . Since most careless drivers have developed a history of poor driving habits , a simple query into an employee's history may reveal some relevant information. According to...one that has. After implementing such safety programs, companies have enjoyed, among other things, reduced insurance rates , unnecessary vehicle wear and less administration hours devoted to repairs.
Intelligent Vehicles
IN THE EARLY...

17/3,K/4 (Item 4 from file: 148)
DIALOG(R)File 148: Gale Group Trade & Industry DB
(c) 2011 Gale/Cengage. All rights reserved.

04146329 **Supplier Number:** 08123243 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Auto safety's new horizons; now that 'safety sells,' there is renewed optimism that key objectives will finally reach production lines.

Anderson, Kim
Insurance Review , v50 , n11 , p30(4)
Nov , 1989
ISSN: 0749-8667
Language: ENGLISH
Record Type: FULLTEXT
Word Count: 2339 **Line Count:** 00182
...not only save their lives, but could also take a hefty chunk out of their insurance premiums .
SIX MILLION AIR BAGS
A prime objective of safety advocates in recent years has been... specially-equipped Grand Prix and Cutlass Supremes. The display, which evolved from fighter aircraft, "floats" speed , gas and other driver information above the hood of the car . The display is actually projected from the windshield, but it allows drivers to monitor the information without taking their eyes off the road.
Better safety standards and features cost...The cost of buying a car with safety features is now often offset by reduced insurance rates .

Insurance companies typically give premium discounts of 20 percent or 30 percent on medical or PIP...

17/3,K/5 (Item 5 from file: 148)
DIALOG(R)File 148: Gale Group Trade & Industry DB
(c) 2011 Gale/Cengage. All rights reserved.

03523168 **Supplier Number:** 06751879 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Wrong turns in auto insurance. (complete revision of auto insurance practices is needed for industry to become profitable)

MacKenzie, Warren L.
Best's Review - Property-Casualty Insurance Edition , v89 , n2 , p26(4)
June , 1988
ISSN: 0161-7745
Language: ENGLISH
Record Type: FULLTEXT
Word Count: 2648 **Line Count:** 00213
...driver dependence on insurance is beginning to erode in the large metropolitan areas, where auto insurance rates are so high that thousands of drivers no longer can afford auto insurance and now...

...come from those drivers who do carry insurance. Loss of any large amount of auto insurance premiums will disturb a company's rate level, causing an increase in rates for the insured...
...a loss.
Failure to consider the traffic hazard thus causes an imbalance in the auto insurance rate structure. When insurers fail to charge for road hazards in the auto rate structure, they...

...risk. The crowded highways (with their poor auto accident experience) have probably distorted the auto insurance rates of all state territories, causing the territories in which these highways are located to be...

...s loss experience was on the car models that it was insuring.
Today's auto insurance rate plans give no consideration to loss experience from cars involved in third-party accidents for...

...consideration of any injuries to the driver or passengers in them. All of the auto insurance coverage rates (whether first or third party) should be adjusted accordingly for the car model's experience...

...a good program until one studies these rate surcharges.
For example, let's consider the driving record . Naturally, every insurance company wants to insure only car owners who have good driving records . However, the number of drivers who possess clean driving records is diminishing because of the congested highways. Many drivers are actually afraid to drive at the posted speed limits for fear of being involved in an accident. As a result, these drivers will...

...of speeding tickets, car owners will not be eligible for any company's best auto insurance rate . And for those drivers with serious moving violations on their records, there is only ...networks have made all state auto insurance rating territories and mileage rating classifications obsolete. Auto insurance rates will not stabilize until each governing locality is charged with its own automobile accidents.
Another...

...the under-age-25 drivers as possible. Companies usually do this by

increasing the auto insurance premiums of these drivers, and by making them virtually unacceptable for auto insurance until they reach...

...younger drivers can cause great harm to any insurance company because it means that auto insurance rates will usually have to be increased for drivers age 25 and over. A company's competitiveness is then diminished in the auto insurance market when its rates go up.

CUSTOMERS OF TOMORROW

Insurance companies should remember that the young people are the...

...in which many insurance companies are competing to attract eligible drivers is that of preferred- rate auto insurance programs. Generally, the age limits for these preferred auto insurance programs fall into the 30 ...

...have a lesser likelihood of having an auto accident. However, even some of these lower- rate auto insurance programs are becoming unprofitable. The main reason is that the programs do not have loss prevention features and therefore the rates keep going up.

Another reason why the lower- rate auto insurance programs are not always profitable is that there is not enough premium volume out there...

...a slow destruction of the agency system. If this process continues, most of the auto insurance premiums will be handled in the future by a small group of very large agency companies...

...programs are completely revised and auto insurance becomes profitable again.

In the past, raising auto insurance rates did improve some of the insurance companies' results temporarily. However, in the last few years, the more that the auto insurance rates increased, the higher rose the number of auto accident claims. Changing to a new statistical auto insurance rating system will stabilize auto insurance premiums . Profitable auto insurance companies in the future will be better able to withstand any recession in the economy...computer to figure out an auto insurance premium. A car owner would be able to rate his own insurance policy. New territory divisions would be based on the governing localities, with territory rate charges...

...insurance rating factors of age and sex would be replaced by injury and damageability auto insurance premium rate factors. In the simplest of terms, there would be one rate for each auto insurance coverage. Each auto insurance coverage rate would be modified by a governing locality percentage rating factor, a car construction safety percentage...

17/3,K/6 (Item 6 from file: 148)
DIALOG(R)File 148: Gale Group Trade & Industry DB
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02970700 **Supplier Number:** 04398075 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Underwriting update: know your truckers. (underwriting, losses & loss control)

Rodda, William H.
Best's Review - Property-Casualty Insurance Edition , v87 , p63(2)
Aug , 1986
ISSN: 0161-7745
Language: ENGLISH
Record Type: FULLTEXT
Word Count: 779 **Line Count:** 00062
...or listing (perhaps computerized) should be feasible. It also would be

useful to have the record of the driver who, for example, passed another car at high speed and smashed head-on into a loaded school bus.
A regional underwriter or trucker might...

...The high number of automobile thefts in the southeastern part of Pennsylvania has caused auto insurance theft premiums to climb steadily,' and added, "All of us must get involved to help stem auto...

17/3,K/7 (Item 7 from file: 148)
DIALOG(R)File 148: Gale Group Trade & Industry DB
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02162509 **Supplier Number:** 03334481 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Reinsurers toughen their stance.

Findlay, Gordon S.
Best's Review - Property-Casualty Insurance Edition , v85 , p74(1)
July , 1984
ISSN: 0161-7745
Language: ENGLISH
Record Type: FULLTEXT
Word Count: 1600 **Line Count:** 00127
...broadscale movement toward higher premiums. A number of senior industry spokesmen have suggested that automobile insurance premiums probably will increase by up to 7% later this year. ICBC Unit To Be Sold...

...will not be disadvantaged by the sale and will have the same access to general insurance at comparable rates ."
ICBC's general insurance division presently writes about 7% of the total general insurance sold in British Columbia. In...Usually the driver is carrying passengers, does not have a seat belt on, and is speeding . In 80% of the cases studied, the vehicle driven by the driver was a car , and 25% of the drivers had a previous record of drinking and driving .
The following statistics emerged regarding when the drunken driver is likely to be encountered:
* Between...

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? **t 17/7/3**

17/7/3 (Item 3 from file: 148)
DIALOG(R)File 148: Gale Group Trade & Industry DB
(c) 2011 Gale/Cengage. All rights reserved.

04920449 **Supplier Number:** 09042178 (THIS IS THE FULL TEXT)
Fleet operations. (special advertising section)

Hubbard, J. Paul
Financial World , v159 , n22 , p44(8)
Oct 30 , 1990

Text:
THERE ARE MANY CHALLENGES FACING TODAY'S FLEET manager: staying alive in the ever-shrinking corporate environment; alternate (or clean-burning)

Records show that, when properly managed, maintenance charges can be reduced by 5% to 20%. Using preapproved repair guidelines and company-approved repair centers will save your company time and money.

Third, while it is impossible to control the cost of gas, especially given the current volatility in the Gulf, fuel purchases can be managed and made more efficient.

The use of the fuel card is quickly becoming an invaluable source of accurate and detailed management information. Purchases can be controlled more closely thereby eliminating additional purchases of, say, cigarettes, sandwiches and in some cases, even lawn furniture. Fleet operators can request specific information to be highlighted such as purchases made during the weekend, or restrict card usage to a single driver or plate number. The obvious advantages include valuable information on car mileage performance, time of purchase and streamlined billing that eliminates padded expenses and gives fleet managers a more accurate read on operating costs.

Another cost-cutting option might be to restrict users to self-servicing stations where savings in New York and Los Angeles average 19.5 [cents] and 31.3 [cents] per gallon, respectively.

Finally, if you run a large enough fleet, use your petrol purchasing influence to arrange an exclusive credit-card deal with a convenient fuel company. A fleet may provide all of its fleet drivers with a credit card guaranteeing the fuel company all of its business. For this privilege, the fleet operator might arrange discounted purchases for the company. Almost 15% of fleets in the U.K. and 8% in West Germany and France have arrangements with specific fuel stations.

Buying and maintaining fleets in a cost-effective manner is a complex business, even for the most savvy fleet professional. The keys to reducing expenditures are to establish effective fleet planning, to conduct ongoing analyses of costs and to maximize fleet vehicle purchasing influence. A full-time commitment, bringing down unit cost through effective fleet management will bring profitable returns.

Going Global

IN 1981, THE U.S. AND JAPAN AGREED TO a voluntary restraining order limiting Japanese imports to 2.3 million units. And until recently, American fleet administrators have been doing their part to restrict the use of imports in their fleets with 70% still subscribing to an unofficial "Buy American" policy.

Proving more difficult to penetrate than the traditional retail markets where imports represent 35%, imports only have a mere 1% of all U.S. fleets. As Aaron Ashcraft, Nissan's national fleet and leasing manager puts it: "Fleets represent the last bastion of dominance by domestic manufacturers." But just as tenacity has proven the corporate tag line, the imports are putting increased pressure on the old order. The Japanese have developed a reputation for producing quality products at competitive prices, and fleet managers are beginning to realize the lifecycle benefits imports and implants offer, especially at a time when the definition of an American car is becoming increasingly blurred.

The problem of defining what is meant by a domestic car is particularly difficult in the U.S. What was once assumed to be an import has been replaced by transplants and joint-venture products. Many consumers are unaware that a large percentage of what they think were imports are actually manufactured in America and vice versa: A Toyota Camry from Kentucky is just as American as a Chevrolet Storm (from Japan). According to Dick Dennis, director of fleet operations at Mazda, "Acceptance is growing for imports as domestic manufacturers are sourcing more and more components outside the U.S." This has meant that the Lincoln Crown Victoria was recently classified as an import because so many of its components are manufactured abroad.

Joint ventures and equity stakes are becoming infectious. Soon it will become almost impossible to identify a car with a single nationality. One example of this latest twist in the import market will be seen in the 1991 model year when Honda will ship Accord Wagons, designed in Japan but

Businesses are realizing the importance of fleet safety and are clearly taking measures to implement corporate safety programs and communicate fleet safety to employees. According to the 1989-1990 Runzheimer survey of business car policies and costs, 57% of companies have adopted a written safety policy for their fleets compared with only 37% in 1987. Furthermore, the study indicates that company-owned fleets, versus their leased counterparts, were much more prominent in supporting safety programs.

Among those programs offered by companies, two have been proven to reduce fleet vulnerability to accidents. First, is a procedure that simply checks employees' driving records prior to issuing them a company car. Since most careless drivers have developed a history of poor driving habits, a simple query into an employee's history may reveal some relevant information. According to Runzheimer, 58% of companies surveyed now checked driving history. These employees, if essential car users, can be put on probation and compelled to participate in a driving program.

The second is the effective use of safety programs. Johnson & Johnson has instituted a safety program both new employees and spouses are required to participate in prior to obtaining a company car. This program is intended to change driver attitude and improve handling skills to better anticipate and deal with potential accident situations.

Intelligent Vehicles

?

20/3,k

20/3,K/1 (Item 1 from file: 16)
DIALOG(R)File 16: Gale Group PROMT(R)
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0018210124 **Supplier Number:** 264438102 **(USE FORMAT 7 FOR FULLTEXT)**

DRIVERS BOXING CLEVER; Technology drives down insurance.(Business)
The Mirror (London, England) , p 36
August 17, 2011 Bad Date
Language: English **Record Type:** Fulltext
Document Type: Newspaper ; General
Word Count: 1130

DRIVERS BOXING CLEVER; Technology drives down insurance .(Business)
-

CAR insurance premiums for young drivers have shot up a staggering 80% in the past two years...

...level of individuals.

Around 50,000 smart young drivers are saving about 50% on their insurance by using this technology. The insurance industry hopes to encourage many more to take this up.

The AA, currently lobbying the...

...operative, which entered the market in March this year, and Young Marmalade, which runs an insurance and car purchase scheme.

Ian Crowder, from the AA, says: "The big advantage of black...

...young people die on the roads each year and then bring in the extortionate car insurance costs for young people, surely something that encourages safer driving and brings down costs is...

...644 0206 /www.young marmalade.co.uk. Offers a combined car purchase and black box insurance scheme for young drivers. Insurance costs can be around 50% lower. A typical 18-yearold pays pounds 250 a month for a car

and insurance for the first year.
Co-operative Young Driver Insurance : www.co-operative insurance .co.uk. Co-op says more than half of its young drivers save up to pounds 500 with its black box technology insurance product. The Co-op is now offering cash-back as a reward to young drivers...

...SAVE pounds 50
Paula Soares is delighted. She has managed to slash her monthly car insurance costs from pounds 170 a month to pounds 120 in just four months.
"I can...

...so much in such a short space of time. I took out a young driver insurance policy with the Co-operative in March this year after I passed my test. Since...
...22, had a black box fitted to the dashboard of her Peugeot 206 car.
It records information about her driving , watching that she keeps within speed limits, avoids harsh braking and acceleration and takes corners with care.
In return, she got a lower than average starter insurance rate and has the ongoing benefit of cheaper rates in the future as she proves...

all

24/3,K/1 (Item 1 from file: 148)
DIALOG(R)File 148: Gale Group Trade & Industry DB
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06483889 **Supplier Number:** 13952942 (USE FORMAT 7 OR 9 FOR FULL TEXT)
It didn't start with Dateline NBC. (fraudulent investigative TV documentaries about automobile safety) (Special Section: The Decline of American Journalism)

Olson, Walter
National Review , v45 , n12 , p41(5)
June 21 , 1993
ISSN: 0028-0038
Language: ENGLISH
Record Type: FULLTEXT; ABSTRACT
Word Count: 3910 **Line Count:** 00287

*****24/3,K/2 (Item 2 from file: 148)
DIALOG(R)File 148: Gale Group Trade & Industry DB
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05421120 **Supplier Number:** 11127766 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Allstate invests in collision avoidance system. (California & The Western States)

Haggerty, Alfred G.
National Underwriter Property & Casualty-Risk & Benefits Management , n31 , pC12(1)
August 5 , 1991
ISSN: 1042-6841
Language: ENGLISH
Record Type: FULLTEXT
Word Count: 966 **Line Count:** 00074
...feet and processes information 50 times a second to provide nearly instantaneous warnings to the driver .
The VORAD system now being tested also reconstructs accidents by recording steering, braking and speed data on a removable card or electronic box similar to flight data recorders in airplanes...

...is one of the test sites and Donald Hansen, its vice president of safety and insurance , said if the testing is successful, the trucker will equip its 834 tractors with VORAD.

"With insurance costs continuing to escalate, the trucking industry and Landstar need solutions such as VORAD which...

...has to be mature to assess the impact on the affordability and availability of auto insurance . He said they have to see how it works in the real world before discussing possible insurance discounts.

Mr. Bouchard said he has had some informal discussions with a couple of truck insurance carriers, both major players, and they are encouraging the introduction of VORAD. He said the...

? show files

```
File  35:Dissertation Abs Online 1861-2011/Nov
         (c) 2011 ProQuest Info&Learning
File  99:Wilson Appl. Sci & Tech Abs 1983-2011/Nov
         (c) 2011 The HW Wilson Co.
File   2:INSPEC 1898-2011/Dec W1
         (c) 2011 The IET
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         (c) 2011 American Economic Association
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         (c) 1999 NILS Publishing Co.
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? ds

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S2    2522551   BEHAVIO? OR HABITS OR PATTERN? OR DRIVING()(TECHNIQUE? OR -
               SKILL? OR STYLE?)
S3     285746   VECHICLE? OR CAR OR CARS OR AUTOMOBLE? OR SUV OR TRUCK OR -
               TRUCKS
S4     681590   SPEED OR SPEEDING OR HOW()FAST
S5      54597   BRAKING OR BRAKE?
S6      14228   INSURANCE(3N)(RATE OR RATES OR PREMIUMS)
S7    6213915   DATA OR INFORMATION OR METRICS
S8     248246   DRIVER OR DRIVING OR DRIVERS
S9       7485   S1(15N)S8
S10     49405   S1(15N)S2
S11      8448   S1(15N)S3
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S15         1   RD  (unique items)
S16         1   S15/1996:2011
S17         0   S15 NOT S16
S18       467   S9(15N)S4
S19        28   S18(15N)S5
S20         1   S19 AND INSURANCE
S21         1   S20/1996:2011
S22         0   S20 NOT S21
S23         0   RD  (unique items)
S24         0   S23 NOT S17
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16/3,k/1-4

16/3,K/1 (Item 1 from file: 9)
DIALOG(R)File 9: Business & Industry(R)
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04881591 Supplier Number: 251001300 **(USE FORMAT 7 OR 9 FOR FULLTEXT)**
Driving monitor: Data from telematics systems in company vehicles can identify dangerous behavior, helping reduce accidents and insurance costs.
(TOOLS&TECHNOLOGY)

Treasury & Risk , p 14
March 2011
Document Type: Journal
Language: English **Record Type:** Fulltext
Word Count: 402 **(USE FORMAT 7 OR 9 FOR FULLTEXT)**

TEXT:
IF AN IPHONE can make people healthier by tracking how many steps they take, why can't something similar make cars and trucks safer by monitoring drivers ' behavior ? Telematics equipment--black boxes--has been available for years, helping companies track the locations of...

...it to track driver behavior related to safety, with the goal of reducing accidents and insurance premiums.^

...bad drivers are, prior to its leading to an accident."

And that leads to lower insurance rates . "If a company is able to reduce its losses, it will be able to reduce...

16/3,K/2 (Item 2 from file: 9)
DIALOG(R)File 9: Business & Industry(R)
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04783685 Supplier Number: 230393282 **(USE FORMAT 7 OR 9 FOR FULLTEXT)**
Liberties taken with product: Progressive.
(NEWS)

Business Insurance , v 44 , n 26 , p 26
June 28, 2010
Document Type: Journal **ISSN:** 0007-6864 (United States)
Language: English **Record Type:** Fulltext
Word Count: 208 **(USE FORMAT 7 OR 9 FOR FULLTEXT)**

TEXT:
...bit offended by Liberty Mutual Group's in-car monitoring system to help determine auto insurance rates based on the mileage driven in the vehicle.

The Mayfield Village, Ohio-based company has...

Progressive introduced the first in- car monitoring system in 1999. The

program offers drivers a wireless monitoring device that charts distance, how quickly the driver accelerates, brake usage, and time of day they travel.

The driver's insurance rate for the month is determined based on the information gathered by the vehicle's on...

16/3,K/3 (Item 3 from file: 9)
DIALOG(R)File 9: Business & Industry(R)
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03500975 Supplier Number: 124857590 **(USE FORMAT 7 OR 9 FOR FULLTEXT)**
Big Brother is riding shotgun: Part 2 of 2; 20 years after 1984, Orwell's novel is reality with our cars acting as spies.
(News)

Automotive News , v 79 , n 6121 , p 56
November 15, 2004 Bad Date
Document Type: Journal **ISSN:** 0005-1551 (United States)
Language: English **Record Type:** Fulltext
Word Count: 1545 **(USE FORMAT 7 OR 9 FOR FULLTEXT)**

TEXT:
...from every jurisdiction it enters, ending any hope of surveillance.

California at the forefront

Rental car companies also have come under fire for using global positioning satellite data to track driving habits , and once again, California is on the forefront of rule making. In August, Gov. Arnold...

...Insurance Co. is forging ahead with a plan to give customers a discount on car insurance premiums by taking advantage of the black boxes. Progressive's TripSense test program in Minnesota, which is likely headed for a nationwide introduction in a year, allows customers to install monitors on their cars that record speed , miles traveled and time of day that the driving occurred. Those who drive less, at lower speeds, and at safer times of day, can save as much as 15 percent on their car insurance premiums

Some already see uses such as Progressive's as the first step to constant monitoring...

16/3,K/4 (Item 4 from file: 9)
DIALOG(R)File 9: Business & Industry(R)
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01538533 Supplier Number: 24238748 **(USE FORMAT 7 OR 9 FOR FULLTEXT)**
Liberty Mutual offers discounts for Volvo owners
(Liberty Mutual Group and Volvo Cars of North America form alliance to provide discounted insurance rates to the 1.4 mil Volvo owners in the US)

Automotive News , n 5763 , p 26
April 27, 1998
Document Type: Journal **ISSN:** 0005-1551 (United States)
Language: English **Record Type:** Fulltext
Word Count: 229 **(USE FORMAT 7 OR 9 FOR FULLTEXT)**

(Liberty Mutual Group and Volvo Cars of North America form alliance to provide discounted insurance rates to the 1.4 mil Volvo owners in the US)

TEXT:
...of North America Inc. and Liberty Mutual Group have formed an alliance to offer discounted insurance rates to the 1.4 million Volvo owners in the United States.

Besides lower rates for...

...to as much as 35 percent off regular rates if they insure more than one car ; if they have a safe driving record ; or if their cars have passive restraints and antilock brakes or antitheft devices.

The program, which rolls out nationwide this month, also offers coverage for...

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File   9:Business & Industry(R) Jul/1994-2011/Dec 16
         (c) 2011 Gale/Cengage
File  20:Dialog Global Reporter 1997-2011/Dec 19
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File 610:Business Wire 1999-2011/Dec 19
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File 634:San Jose Mercury  Jun 1985-2011/Dec 15
         (c) 2011 San Jose Mercury News
File 636:Gale Group Newsletter DB(TM) 1987-2011/Dec 14
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File 810:Business Wire 1986-1999/Feb 28
         (c) 1999 Business Wire
File 813:PR Newswire 1987-1999/Apr 30
         (c) 1999 PR Newswire Association Inc
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Set     Items    Description
S1   17113401    RECORD? ? OR RECORDING OR TRACKING OR TRACK? ? OR MONITOR?
S2    2948012    BEHAVIO? OR HABITS OR PATTERN? OR DRIVING()(TECHNIQUE? OR -
             SKILL? OR STYLE?)
S3    6160124    VECHICLE? OR CAR OR CARS OR AUTOMOBLE? OR SUV OR TRUCK OR -
            TRUCKS
S4    3114761    SPEED OR SPEEDING OR HOW()FAST
S5     337428    BRAKING OR BRAKE?
S6     167362    INSURANCE(3N)(RATE OR RATES OR PREMIUMS)
S7   30760647    DATA OR INFORMATION OR METRICS
S8    4379707    DRIVER OR DRIVING OR DRIVERS
S9     158216    S1(15N)S8
S10    120971    S1(15N)S2
S11    194078    S1(15N)S3
S12     20649    S11(10N)S8
S13      2211    S12(15N)(S2 OR S4 OR S5)
S14       120    S13 AND S6
S15        92    RD  (unique items)
S16        92    S15/1996:2011
S17         0    S15 NOT S16
S18      7994    S9(15N)S4
S19       424    S18(15N)S5
S20        89    S19 AND INSURANCE
S21        89    S20/1996:2011
S22         0    S20 NOT S21
S23         0    RD  (unique items)
S24         0    S23 NOT S17
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File   9:Business & Industry(R) Jul/1994-2011/Dec 16
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File 810:Business Wire 1986-1999/Feb 28
         (c) 1999 Business Wire
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         (c) 1999 PR Newswire Association Inc
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? ds

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Set     Items    Description
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S2    2948012    BEHAVIO? OR HABITS OR PATTERN? OR DRIVING()(TECHNIQUE? OR -
              SKILL? OR STYLE?)
S3    6160124    VECHICLE? OR CAR OR CARS OR AUTOMOBLE? OR SUV OR TRUCK OR -
              TRUCKS
S4    3114761    SPEED OR SPEEDING OR HOW()FAST
S5     337428    BRAKING OR BRAKE?
S6     167362    INSURANCE(3N)(RATE OR RATES OR PREMIUMS)
S7   30760647    DATA OR INFORMATION OR METRICS
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S10    120971    S1(15N)S2
S11    194078    S1(15N)S3
S12     20649    S11(10N)S8
S13      2211    S12(15N)(S2 OR S4 OR S5)
S14       120    S13 AND S6
S15        92    RD  (unique items)
S16        92    S15/1996:2011
S17         0    S15 NOT S16
S18      7994    S9(15N)S4
S19       424    S18(15N)S5
S20        89    S19 AND INSURANCE
S21        89    S20/1996:2011
S22         0    S20 NOT S21
S23         0    RD  (unique items)
S24         0    S23 NOT S17
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16/5/1 (Item 1 from file: 169)
DIALOG(R)File 169: Insurance Periodicals
(c) 1999 NILS Publishing Co. All rights reserved.

00195730
Undaunted by wrath of consumers: IBC prairie vp continues public push for photo radar insurance penalties.

Thompsons World Insurance News , Jan 26 1998, p5
Document Type: Journal Article
Journal Code: TWIN
Abstract: Insurance Bureau of Canada Prairie regional vice president Al Wood has suggested that those who get photo radar tickets should face increased automobile insurance premiums. Presently, Alberta does not record the tickets against a vehicle owner's driving record, on the grounds that someone else might have been driving the car and the ticket does not equate to a conviction for speeding. (Author/BIG)
Country: FOREIGN
Descriptors: Alberta; Automobiles; Insurance Bureau Of Canada; Safety Measures And Devices

22/3,k/all

22/3,K/1 (Item 1 from file: 637)
DIALOG(R)File 637: Journal of Commerce
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TRADE BILL CONFRONTS CONGRESS

JOURNAL OF COMMERCE (JC) - TUESDAY September 8, 1987
By: A STAFF REPORT
Edition: FIVE STAR **Section:** FRONT **Page:** 1A
Word Count: 1,412

...a rule-making within nine months on the merits of requiring in-truck computers to record driving time and speed .
A similar study would be conducted for anti-lock truck brakes .
The bill would not automatically require the new safety devices but would push the department in that direction.
Truckers oppose quick installation of black boxes and anti-lock brakes, but insurance groups are backing the proposals.

The same legislation also would make truckers operating in big...

Caption:

22/3,K/2 (Item 2 from file: 637)
DIALOG(R)File 637: Journal of Commerce
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TRUCK SAFETY EFFORTS FUEL DEBATE ON COSTS

JOURNAL OF COMMERCE (JC) - THURSDAY April 9, 1987
By: MICHAEL S. LELYVELD Journal of Commerce Staff
Edition: FIVE STAR **Section:** TRANSPORTATION **Page:** 12A
Word Count: 858

Text:
Truckers may need a scorecard this year to keep track of all the safety and regulatory initiatives that Washington is aiming at the industry.

Driver licensing, drug testing, speed limits, commercial zones, data recorders, anti-lock brakes , annual truck inspections and roadside checks will all be considered, debated or pursued with greater...

?

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File 625:American Banker Publications 1981-2008/Jun 26
         (c) 2008 American Banker
File 637:Journal of Commerce 1986-2011/Dec 17
         (c) 2011 UBM Global Trade
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? ds

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Set     Items    Description
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              SKILL? OR STYLE?)
S3      78676    VECHICLE? OR CAR OR CARS OR AUTOMOBLE? OR SUV OR TRUCK OR -
              TRUCKS
S4      23487    SPEED OR SPEEDING OR HOW()FAST
S5       3752    BRAKING OR BRAKE?
S6       8658    INSURANCE(3N)(RATE OR RATES OR PREMIUMS)
S7     151038    DATA OR INFORMATION OR METRICS
S8      30742    DRIVER OR DRIVING OR DRIVERS
S9       1781    S1(15N)S8
S10       697    S1(15N)S2
S11      3888    S1(15N)S3
S12       381    S11(10N)S8
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S18        55    S9(15N)S4
S19         4    S18(15N)S5
S20         2    S19 AND INSURANCE
S21         0    S20/1996:2011
S22         2    S20 NOT S21
S23         2    RD  (unique items)
S24         2    S23 NOT S17
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monitor* or track* or record* in Select a Field (optional) Search

AND driver* in Select a Field (optional) Clear

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Date Published from January Year: 1950 to January Year: 1996

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Publication

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- Reduce the number of terms included in your search.
- Broaden your search by selecting other databases, removing limits, or searching "Citations and document text" (if available).
- Use "AND" to connect two words that don't need to be searched as a phrase.
- Connect similar terms with the "OR" operator (e.g. military OR pentagon). See Search Tips for more hints.

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Databases selected: Multiple databases...

Rewards for a lack of drive In-car devices that enable insurers to monitor vehicle usage can reduce drivers' premiums but the price to pay is privacy, writes John Reed; [LONDON 1ST EDITION]

JOHN REED. **Financial Times**. London (UK): Aug 2, 2007. pg. 10

Indexing (document details)

Companies:	Norwich Union (**NAICS:** 524210) , Royal & SunAlliance
Author(s):	JOHN REED
Section:	*BUSINESS LIFE*
Publication title:	Financial Times. London (UK): Aug 2, 2007. pg. 10
Source type:	Newspaper
ISSN:	03071766
ProQuest document ID:	1314105931
Text Word Count	1114
Document URL:	http://proquest.umi.com/pqdweb?did=1314105931&sid=3&Fmt=1&clientId=19649&RQT=309&VName=PQD

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Databases selected: Multiple databases...

Now it's much easier to track the trucks: This satellite-based system can boost efficiency for companies and benefit drivers, says John Griffiths; [Surveys edition]

Griffiths, John. **Financial Times**. London (UK): Feb 23, 1998. pg. 09

Indexing (document details)

Subjects:	Electronic & Electrical Equipment, Electronic Equipment, Engineering, Vehicles, Company news, Distribution, Technological developments
Locations:	United Kingdom, EC
Companies:	Logiq, Minorplanet, Prudential Corporation plc, Safeway plc, Securicor plc, Tracker group, Trakbak
Author(s):	Griffiths, John
Document types:	Surveys
Section:	*Survey - FT Automobile*
Publication title:	Financial Times. London (UK): Feb 23, 1998. pg. 09
Source type:	Newspaper
ISSN:	03071766
ProQuest document ID:	26602139
Text Word Count	587
Document URL:	http://proquest.umi.com/pqdweb?did=26602139&sid=3&Fmt=1&clientId=19649&RQT=309&VName=PQD

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Databases selected: Multiple databases...

OnStar explores insurance links; [London edition]

Tait, Nikki. **Financial Times**. London (UK): Jan 10, 2001. pg. 29

Indexing (document details)

Subjects:	Company News, Service & Product Use, Automobiles, Auto Parts
Locations:	United Kingdom, European Union, Europe, Western Europe
Author(s):	Tait, Nikki
Document types:	Stories
Section:	*COMPANIES & FINANCE MOTOR INDUSTRY*
Publication title:	Financial Times. London (UK): Jan 10, 2001. pg. 29
Source type:	Newspaper
ISSN:	03071766
ProQuest document ID:	66385279
Text Word Count	318
Document URL:	http://proquest.umi.com/pqdweb?did=66385279&sid=4&Fmt=1&clientId=19649&RQT=309&VName=PQD

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Service: Terms and Connectors Search
Print Request: Selected Document(s): 1,9,50
Source: News, Beyond Two Years (English, Full Text)
Search Terms: (track! or monitor! or record!) w/10 (driver or driving) w/10 (pattern! or habit! or behav!) w/30 (insurance) and date bef 1/29/1996

Send to: LEHMAN, KAREN
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9 of 62 DOCUMENTS

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Southwest Newswire

JANUARY 14, 1994, FRIDAY

DISTRIBUTION: TO BUSINESS/TRANSPORTATION DESKS

LENGTH: 746 words

HEADLINE: NTS AND SAFEST1 OFFER 1-800 SAFE DRIVING SERVICE TO NORTH AMERICAN TRUCKING INDUSTRY

DATELINE: FORT WORTH, Texas, January 14, 1994

BODY:

NTS, Inc. of Fort Worth, Texas, a leading fuel and cost management services firm, and SAFEST1, a Dallas- based driver safety monitoring company, have formed a strategic alliance to offer SAFEST1's "1-800 How am I driving?" service to North American trucking firms.

NTS, which pioneered the fuel management industry in 1963, serves about 8,000 motor carriers in North America through a network of more than 3,000 NTS-affiliated truck stops, the world's largest. The firm annually funds the purchase of more than $1 billion in diesel fuel and related products purchased by 210,000 NTS cardholders.

SAFEST1, whose customers include Coca-Cola USA, TCI Cable, Sysco Food Services, Pizza Inn and DHL Worldwide Express, is the fastest growing provider of accident prevention and commercial vehicle monitoring services in the nation. The firm, founded in 1991, has established a reputation for technical innovation and superior customer service.

"The partnership between our firms provides motor carriers with a carefully conceived and proven program for maximizing fleet safety, reducing the number and severity of accidents and lowering the carriers' insurance premiums and claims," said Tommy L. Andrews, senior vice president and general manager of NTS.

The program solicits motorists' feedback -- positive and negative -- on driver road safety by using highly visible decals on the trucks to display the phrase, "How am I driving? Call 1-800-SAFEST-1" and a unique identification number which immediately identifies the vehicle being reported.

Detailed information is solicited by trained operators at SAFEST1 and recorded as an Incident Report. Information is verified to ensure legitimacy and completeness, entered into the firm's database, and immediately faxed or mailed to the carrier's safety director, fleet supervisor or general manager who can promptly address the situation. The reports include a feedback section for driver response to reinforce the program's fairness.

The National Safety Council ("Accident Facts, 1993") estimated the average cost per fatality due to motor vehicle accidents rose from $290,000 in 1989 to $880,000 in 1992, an average annual increase of 32 percent. The estimated average costs per nonfatal injury climbed from $14,100 to $29,500, up 20.2 percent per year for the four-year period. Estimated average costs per property damage due to motor vehicle accidents increased 21.3 percent a year, from $3,000 in 1988 to $6,500 in 1992.

"Those are significant numbers, particularly in the trucking industry whose operating ratio was more than 95.4 percent in 1993," Andrews emphasized. "Add to those thin margins the 4.3 cents per gallon fuel tax increase and sky-

rocketing insurance costs, and SAFEST1 makes a lot of sense to corporations determined to safeguard and increase profitability."

Chris Richey, president of SAFEST1, said the program monitors driver safety 24 hours a day and holds drivers accountable for their driving habits.

"Such programs are the quickest way to improve a company's safety record, not just for motor carriers, but for all types of commercial fleets," Richey said. "SAFEST1 will help carriers take advantage of lower rates resulting from safer driving habits. Our company relationship with some of the largest insurance firms in the nation can be leveraged in the client's favor."

The cost-effective safety program reduces the administrative burden of an in-house safety program. It features a low, annual per unit fee and reduces accident costs and fuel expenditures while improving the image of participating companies. Management gets information within minutes of a report, particularly with SAFEST1's Emergency Contact Network(TM). The Network assures immediate notification in the event of an emergency, since motorists often call the 1-800 number to report disabled vehicles.

NTS, which has about 300 employees, primarily in Fort Worth, is a subsidiary of PHH Corporation (NYSE: PHH), a $4 billion transnational company which provides a broad range of management services, information products and expense management programs to clients in North America, the United Kingdom and Europe.

CONTACT: Cody R. Aufricht, marketing communications manager, NTS, Inc., 1-800-433-2502, Ext. 7818, Julie M. Groschen, director of corporate communications, SafetyNet, 214/871-7574 or Preston F. Kirk, APR, Graphic Concepts Group, Inc., Dallas Office: 214/690-8446. 01-14-94---12:48:07p

LOAD-DATE: January 14, 1994

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Business Dateline;
Business First-Louisville

May 4, 1987

SECTION: Vol 3; No 39; Sec 1; pg 7

LENGTH: 758 words

HEADLINE: New Auto Policy Awards Responsible Drivers

BYLINE: Kevin Rayburn

DATELINE: Louisville; KY; US

BODY:

Nearly half the car accidents in the United States are caused by drunken drivers, but non-drinkers have had to pay rising automobile insurance premiums along with everyone else.

According to one insurer, non-drinkers and those who "drink and drive responsibly" are a segment of the insurance market that is ready to buy discount coverage that rewards them for good road behavior.

That insurer, Sentry Insurance Co. of Stevens Point, Wis., claims that the sober driver with a good track record has been neglected on actuarial tables. On April 16, Sentry began selling a unique sobriety policy in Kentucky that is apparently the first of its kind.

"It's a new approach to auto insurance; I don't think I've ever seen one quite like this," said William Coleman, director of the property and casualty division in the Kentucky Department of Insurance.

Company representatives said they hope the policy will steer many consumers away from competing coverage and toward Sentry.

The "Payback Policy," first offered in Wisconsin a year ago, costs 20 percent less, in many cases, than a regular policy, said Glenn Fine, a Sentry agent in Louisville. And, drivers who make no claims on the policy for five years get one-half of their first year's premium back. If they don't have a claim for six years, they get one-half of their second year's premium back, ad infinitum, Fine said.

But there are catches, designed to test the driver's sobriety. If a holder of the payback insurance has an accident while intoxicated, Sentry will not pay for damages to the car. It will pay for both drivers' medical costs and for damages to the other driver's car, however, Fine said.

The policy also won't pay if the driver refuses a sobriety test.

To qualify for the insurance, the driver must have a clean record -- with no accidents or moving violations of any kind -- for three years prior to applying, Fine said.

"It just works on the simple principle that safe drivers cost less to the insurer," Fine said.

Applicants are asked to describe their traffic record on the policy's application, but Sentry checks police motor-vehicle records to ensure that its applicants have clean slates, said Mary Bogda, Sentry's director of corporate communications.

"We're just trying to say to the responsible driver who maybe has driven without a claim for 20 years that we know they've been safe drivers and they haven't cost us money," Fine said. "So here's something we can offer them."

The Sentry automobile policy follows a recent trend in the insurance industry of rewarding good risks with lower premiums and refunds. Many health insurers, for example, are lowering premiums for individuals who don't smoke or drink and for employees that participate in wellness programs.

The Sentry car plan, now available in eight states, is being sold by 13 agents throughout Kentucky, Fine said. Bogda said the policy will be sold in 20 states by year's end. Though she said the policy has been "successful," Bodga declined, for proprietary reasons, to give sales statistics.

Some of the nation's leading insurers, including State Farm Mutual Automobile Insurance Co. of Bloomington, Ill., said they don't have plans similar to Sentry's payback policy and aren't planning to market any.

Fine claims the competitors are "sitting back to see how ours does" before developing similar plans.

Robert Sesser, public relations superintendent for State Farm, said he doubts that Sentry's plan, with its rebate provisions, can be profitable unless it, and other Sentry policies, are actually more expensive than regular policies. "We've determined that you'd have to load the premium 20 percent up front to make any money on it," Sasser said.

Sasser said State Farm won't develop a similar policy because its premiums are already competitive. "We're very selective about who we insure," he said. "We wouldn't insure someone with a drinking problem in the first place."

Bogda and Fine said the payback plan isn't "loaded," as Sasser suggested. "This is absolutely the lowest rate we offer," Fine said. "It's not a high premium in the beginning just so we can afford to pay the refund."

The average car policy costs more than $ 500 a year, but Fine said the payback policy is 20 percent less for good drivers ages 25 to 55.

Although the policy penalizes the drunken driver who has a wreck, Fine said the policy isn't intended to stop people from drinking. "This isn't for the teetotaller," Fine said. "It's for people who drink and drive responsibly."

UMI-ACC-NO: 8708840

LOAD-DATE: October 12, 1995

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SEARCH Core Databases	
ADD Full-Text Health & Wellness Database, Gale Group	149
ADD Full-Text New England Journal of Medicine	444
ADD Non Full-Text BIOSIS Previews	5
ADD Non Full-Text EMBASE	73
ADD Non Full-Text MEDLINE	155
ADD Non Full-text SciSearch	34, 434
2 Health Care Management Databases for Pharmaceuticals	**File Number**
ADD Full-Text Pharmaceutical and Healthcare Industry News Database	129,130
ADD Full-Text Prous Science Drug News (formerly Drug News & Perspectives)	455
ADD Non Full-Text International Pharmaceutical Abstracts (bib)	74
ADD Non Full-Text Pharmaceutical News Index (PNI)	42
4 Insurance Databases	**File Number**
SEARCH Core Databases (especially ABI/Inform and Business & Industry)	
ADD Full-Text American Banker Financial Publications	625
ADD Full-Text The Journal of Commerce	637
ADD Non Full-Text Insurance Periodicals Index (1984 - 1999)	169
5 Reservation, Check-in, & Ticketing Systems Databases	**File Number**

Page 000084

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7 Operations Research Databases	**File Number**
SEARCH Core Databases	
ADD Inventory Monitoring Databases	
13 Transportation Facility Access Databases	**File Number**
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ADD Full-Text Marketing & Advertising Reference Service, Gale Group	570
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ADD Full-Text PAPERSEU (Group of British and Irish newspapers full text)	
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ADD IRS Private Letter Rulings (FEDTAX;PLR) (LEXIS-NEXIS File)	
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SEARCH Core Databases	
ADD Banking/Finance/Investments/Stock-Bond Trading Databases	
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SEARCH Core Databases	
ADD Banking/Finance/Investments/Stock-Bond Trading Databases	
39 Including Funds Transfer or Credit Transaction Databases	**File Number**
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Last modified 11/29/2011 12:51:04

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18/PN,TI,3,K/1 (Item 1 from file: 347)
DIALOG(R)File 347: JAPIO
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01916565 **SPEED CHANGE CONTROL METHOD FOR AUTOMATIC SPEED CHANGE GEAR FOR CAR**

Pub. No.: 61-130665 [JP 61130665 A]
Published: June 18, 1986 (19860618)
Inventor: TOMOHIRO TADASHI
IWATSUKI KUNIHIRO
Applicant: TOYOTA MOTOR CORP [000320] (A Japanese Company or Corporation), JP (Japan)
Application No.: 59-253527 [JP 84253527]
Filed: November 30, 1984 (19841130)
Journal: Section: M, Section No. 531, Vol. 10, No. 323, Pg. 156, November 05, 1986 (19861105)
Image available
SPEED CHANGE CONTROL METHOD FOR AUTOMATIC SPEED CHANGE GEAR FOR CAR

ABSTRACT
...CONSTITUTION: Propriety information on release timing of a lock-up clutch related to speed change from some is stored and a timer is changed according to the information . That is, a change pattern of increase/decrease in rotating speed of an engine is monitored , and the timing of releasing the lock-up clutch is changed and altered according to the pattern , whereby in consideration of variation in various conditions, a user's driving manner and so on, the optimum timing of releasing the lock-up clutch can be... Di01

18/PN,TI,3,K/3 (Item 2 from file: 350)
DIALOG(R)File 350: Derwent WPIX
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0021172071
WPI Acc no: 2010-P15119/
Controlling system for mobile device e.g. laptop, in vehicle such as bus, has software application disabling functions of mobile device based on policy if vehicle speed exceeds minimum threshold speed level based on indication
Original Titles:
Systems, Methods, And Devices For Policy-Based Control and Monitoring of Use of Mobile Devices By Vehicle Operators
SYSTEMS, METHODS, AND DEVICES FOR POLICY-BASED CONTROL AND MONITORING OF USE OF MOBILE DEVICES BY VEHICLE OPERATORS
SYSTEMES, PROCEDES ET DISPOSITIFS POUR LE CONTROLE PAR POLITIQUE ET LA SURVEILLANCE DE L'UTILISATION DE DISPOSITIFS MOBILES PAR DES OPERATEURS DE VEHICULE
Patent Assignee: OBDEDGE LLC (OBDE-N)
Inventor: BROWN S; GUBA R W; POWERS D L
Patent Family: 2 patents, 113 countries

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2010129939	A1	20101111	WO 2010US34151	A	20100508	201076	B
US 20110009107	A1	20110113	US 2009176640	P	20090508	201105	E

			US 2009247334	P	20090930	18/PN,TI,3, K/4 (Item 3 from file: 350) DIALOG(R)
			US 2010301902	P	20100205	
			US 2010776379	A	20100508	

File 350: Derwent WPIX
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0019509976
WPI Acc no: 2009-N79473/
Related WPI Acc No: 2009-N57169
Testing system for bogie car by using bogie car testing apparatus, has drive unit for circulating wheel and bogie car testing apparatus, which has sensor, where data processing block is provided for analysis of bogie materials
Original Titles:
The balance running test system using the balance test track value.
Patent Assignee: KRRI (KRRI)
Inventor: JUN HYEOK P; KIM B T; NAM PO K; SEOK WON K
Patent Family: 1 patents, 1 countries

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
KR 2009094201	A	20090904	KR 200966560	A	20090721	200963	B
			KR 200491942	A	20041111		

Patent Number	Kind	Date	Update	Type
KR 2009094201	A	20090904	200963	B

Priority Applications (no., kind, date): KR 200491942 A 20041111; KR 200966560 A 20090721

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
KR 2009094201	A	KO	18	13	Division of application	KR 200491942

Basic Derwent Week: 200963

Testing system for bogie car by using bogie car testing apparatus, has drive unit for circulating wheel and bogie car testing apparatus, which has sensor, where data processing block is provided for analysis of bogie ... Alerting Abstract ...NOVELTY - The testing system has a drive unit for circulating wheel and a bogie car testing apparatus, which has a sensor. A data processing block is provided for analysis of... USE - Testing system for bogie car by using bogie car testing apparatus ... ...ADVANTAGE - The testing system has a drive unit for circulating wheel and a bogie car testing apparatus, which has a sensor. A data processing block is provided for analysis of... ...wheel speed unit, and thus ensures testing system with improved and reliable testing of bogie car . ...

18/PN,TI,3,K/5 (Item 4 from file: 350)
DIALOG(R)File 350: Derwent WPIX
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0019193170
WPI Acc no: 2009-K32094/
Tire pressure monitoring system assisted instruction method for vehicle i.e. car, involves registering width of speed of acceleration information in tire pressure monitoring system sensor and speed of signal of vehicle speed sensor

Original Titles:
Auto Learning Method of TPMS using Velocity Pattern
AUTO LEARNING METHOD OF TPMS USING A VELOCITY PATTERN, CAPABLE OF MINIMIZING ERROR LEARNING POSSIBILITY OF A SENSOR MOUNTED ON THE OTHER VEHICLES
Patent Assignee: HYUNDAI MOTOR CO LTD (HYMR)
Inventor: YOUNG SEOP L
Patent Family: 2 patents, 1 countries

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
KR 2009055749	A	20090603	KR 2007122545	A	20071129	200943	B
KR 920907	B1	20091012	KR 2007122545	A	20071129	200970	E

Patent Number	Kind	Date	Update	Type
KR 2009055749	A	20090603	200943	B
KR 920907	B1	20091012	200970	E

Priority Applications (no., kind, date): KR 2007122545 A 20071129

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
KR 2009055749	A	KO	9	7		
KR 920907	B1	KO			Previously issued patent	KR 2009055749

Basic Derwent Week: 200943

Tire pressure monitoring system assisted instruction method for vehicle i.e. car , involves registering width of speed of acceleration information in tire pressure monitoring system sensor and... Alerting Abstract USE - Tire pressure monitoring system assisted instruction method for a vehicle i.e. car . **Title Terms** .../Index Terms/Additional Words: CAR ; **Class Codes** Original Publication Data by AuthorityArgentina**Publication No. Original Abstracts:** The invention relates to the TPM S (TPMS) assisted instruction method using the running speed pattern , more specifically, to the assisted instruction method which classifies by using whether the change of the speed using the acceleration information of the vehicle speed from the monitored vehicle speed sensor and TPMS sensor for the predetermined time is similar or not whether... ... The invention relates to the TPM S (TPMS) assisted instruction method using the running speed pattern , more specifically, to the assisted instruction method which classifies by using whether the change of the speed using the acceleration information of the vehicle speed from the monitored vehicle speed sensor and TPMS sensor for the predetermined time is similar or not whether... ...**Claims:**pressure; and the vehicles enters into the assisted instruction mode in case the vehicles starts driving and the acceleration measured in the TPMS sensor is on the increase over the revolution... ...amount of change (△Vvehicl) of the vehicle speed being saved and confirming through the car speed information of the next seat sensor whether it is △ V sen X &#x25B3...pressure; and the vehicles enters into the assisted instruction mode in case the vehicles starts driving and the acceleration measured in the TPMS sensor is on the increase over the revolution... ...amount of change (△Vvehicl) of the vehicle speed being saved and confirming through the car speed information of the next seat sensor whether it is △ V sen X &#x25B3...

18/PN,TI,3,K/6 (Item 5 from file: 350)
DIALOG(R)File 350: Derwent WPIX
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0017807526
WPI Acc no: 2008-G27982/
Intelligent testing system for abnormal driving, has data collecting module for collecting

various data, and data recording module for recording various data, and intelligent analyzing module for analyzing data intelligent analysis
Original Titles:
An intelligent testing system for abnormal driving and its testing method
Patent Assignee: UNIV ELECTRONIC SCI & TECHNOLOGY (UYEL-N)
Inventor: BAI Z; CAI H; CHEN L; CUI J; LU G; MIN F
Patent Family: 1 patents, 1 countries

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
CN 101169873	A	20080430	CN 200710050617	A	20071126	200840	B

Patent Number	Kind	Date	Update	Type
CN 101169873	A	20080430	200840	B

Priority Applications (no., kind, date): CN 200710050617 A 20071126

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
CN 101169873	A	ZH	14	3	

Basic Derwent Week: 200840

...CLAIM 4] The testing method for intelligent testing system for abnormal driving according to claim 2 or 3, wherein when the said intelligent analyzing module makes sure that there is no abnormal driving condition in the previous time in terms of the analysed results, it informs the data

18/PN,TI,3,K/7 (Item 6 from file: 350)
DIALOG(R)File 350: Derwent WPIX
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0017616853
WPI Acc no: 2008-E37298/
XRPX Acc No: N2008-343052
Automatic braking control apparatus for use in e.g. truck, has electronic control unit which prohibits stepwise braking control, when side slipping of vehicle is suppressed
Original Titles:
AUTOMATIC BRAKING CONTROL DEVICE
Automatic-braking control apparatus
Patent Assignee: HINO MOTORS LTD (HINM)
Inventor: EZOE T; ICHINOSE T; NARATA S; OKAMOTO K; OKUYAMA H
Patent Family: 2 patents, 1 countries

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
JP 2007313943	A	20071206	JP 2006143078	A	20060523	200830	B
JP 4790491	B2	20111012	JP 2006143078	A	20060523	201167	E

Patent Number	Kind	Date	Update	Type
JP 2007313943	A	20071206	200830	B
JP 4790491	B2	20111012	201167	E

Priority Applications (no., kind, date): JP 2006143078 A 20060523

Patent Details

ECU4 are displayed on display part (illustration omitted) of a driver 's seat by meter ECU6.Since the control system relevant to the steering of those... ... The millimeter-wave radar 1 and steering angle to measure.Even if there is no driving -operation based on sensor outputs, such as the vehicle speed sensor 13 for detecting the...damping|braking."In addition, when strong damping|braking operation beyond the braking force which the driver |operator showed above is performed, a more powerful braking force has priority and it is made to work|function.However, a driver |operator's damping|braking operation acts as a brake instruction|indication with respect to Electronic... ...ECU10,When a driver |operator performs excess damping|braking operation and the own vehicle

18/PN,TI,3,K/10 (Item 9 from file: 350)
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18/PN,TI,3,K/11 (Item 10 from file: 350)
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0012926076
WPI Acc no: 2003-002582/
XRPX Acc No: N2003-001935
Traffic density measuring apparatus for highway, processes electrical sensing signals indicating behavior of vehicle received from sensors for determining driver satisfaction, which is function of relative speed of successive vehicles
Patent Assignee: GOLDEN RIVER TRAFFIC LTD (GOLD-N)
Inventor: DALGLEISH M J
Patent Family: 1 patents, 1 countries

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
GB 2373619	A	20020925	GB 20017300	A	20010323	200301	B

Patent Number	Kind	Date	Update	Type
GB 2373619	A	20020925	200301	B

Priority Applications (no., kind, date): GB 20017300 A 20010323

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
GB 2373619	A	EN	22	4	

Basic Derwent Week: 200301

...**for highway, processes electrical sensing signals indicating behavior of vehicle received from sensors for determining driver satisfaction, which is function of relative speed of successive vehicles Alerting Abstract** ...NOVELTY - Multiple sensors (122,123) are installed on or near a road for monitoring behavior of the vehicles such as speed . A data processor processes the electrical sensing signals received from the sensors for determining driver satisfaction which is a function of the relative speed of successive vehicles. ... USE - For measuring traffic density of vehicle such as car , truck , and bus in highway, car parks, airport terminal , seaport and drive-through facilities such as wild life park and zoo, for measuring probability of occurrence of accident... ... at or adjacent a predetermined location on a road system is predicted using the determined driver 's satisfaction. As a result the actions required to reduce the traffic congestion are performed...

18/PN,TI,3,K/12 (Item 11 from file: 350)
DIALOG(R)File 350: Derwent WPIX
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0012668738
WPI Acc no: 2002-518780/
XRPX Acc No: N2002-410663
Supervisor system for training drivers, sends data about driving behavior to supervisor at remote place automatically, when driver does not stop vehicle at crossroads
Original Titles:
MANAGING APPARATUS FOR MEASURING DRIVING BEHAVIOR
Assistant system for safe driving by informative supervision and training
Patent Assignee: MATSUNAGA K (MATS-I)
Inventor: GOSHI K; MATSUKI Y; MATSUNAGA K; SHIDOUJI K
Patent Family: 2 patents, 2 countries

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20020063639	A1	20020530	US 2001864530	A	20010522	200255	B
JP 2002163750	A	20020607	JP 2000403626	A	20001129	200255	E

Patent Number	Kind	Date	Update	Type
US 20020063639	A1	20020530	200255	B
JP 2002163750	A	20020607	200255	E

Priority Applications (no., kind, date): JP 2000403626 A 20001129

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 20020063639	A1	EN	4	1	
JP 2002163750	A	JA	4		

Basic Derwent Week: 200255

Supervisor system for training drivers , sends data about driving behavior to supervisor at remote place automatically, when driver does not stop vehicle at crossroads Original Titles:MANAGING APPARATUS FOR MEASURING DRIVING BEHAVIOR... ...Assistant system for safe driving by informative supervision and training **Alerting Abstract** ...NOVELTY - A computer records the position and speed data of a vehicle, and sends recorded data about driving behavior to a supervisor at a remote place automatically, when a driver does not stop the vehicle at a crossroad where the vehicle is to be stopped. USE - For supervisor and train drivers to drive safely for avoiding traffic accidents of buses, trucks and taxis... ...and estimated stopping distance and to acquire actual road situation necessary for management of safe driving . Enables to effectively educate drivers and to give individual advice for safe driving in real time... Original Publication Data by AuthorityArgentina**Publication No.** ...**Original Abstracts:**have been a very serious topic. Until now, no one could understand or supervise a driver 's driving behavior, unless a supervisor was with him in the same vehicle. By the use of recent computer and communication technologies, we invented a system based on our safe driving theory, for a supervisor from a remote place to supervise and train drivers to drive safely. A computer in a vehicle obtains information concerning the driver 's driving behavior by sensors in the vehicle and sends it to a supervisor outside of the vehicle. The supervisor can recognize unsafe behavior and train the driver in safe driving. **Claims:** What is claimed is; **1**. In order to maintain safe driving , a system that measures and records the position and speed of a vehicle and sends data about driving behavior to a supervisor at a remote place automatically if a driver does not stop at a crossroad where he/ she should stop.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L3	0	(black box same (airplane or aircraft)).ab. and "S22"	USPAT	ADJ	ON	2011/12/02 08:15
L4	1	("5835008").pn. and (wireless same transmit$3)	USPAT	ADJ	ON	2011/12/02 08:15
L7	40	("3171917" | "4170723" | "4901055" | "5387898" | "5465079" | "5521580" | "5532671").PN. OR ("5835008").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/12/02 08:16
L10	8	("20010039002" | "5835008" | "6064970" | "6253129").PN. OR ("6714894").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/12/02 08:16
S6	3	((RAYMOND) near2 (LING)).INV.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/05/14 09:06
S7	60	((RICHARD) near2 (HUTCHINSON)).INV.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/05/14 09:06
S8	0	((WILBERT) near2 (STEIGERWALD)).INV.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/05/14 09:07
S9	15	((WILLIAM) near2 (SAY)).INV.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/05/14 09:09
S10	7	((PATRICK) near2 (O''MALLEY)).INV.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/05/14 09:09
S11	0	((DANE) near2 (SHRALLOW)).INV.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/05/14 09:10
S12	113	((WILLIAM) near2 (EVERETT)).INV.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/05/14 09:10
S13	2	(6714894|20020111725).pn.	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/14 09:30
S14	8	("20010039002" | "5835008" | "6064970" | "6253129").PN. OR ("6714894").URPN.	US-PGPUB; USPAT;	ADJ	ON	2011/05/15 06:32

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S15	21	(US-1265442-$.DID. OR US-3781824-$.DID. OR US-3870894-$.DID. OR US-4212195-$.DID. OR US-4387587-$.DID. OR US-4581708-$.DID. OR US-4593357-$.DID. OR US-4638289-$.DID. OR US-4706083-$.DID. OR US-4836024-$.DID. OR US-4845630-$.DID. OR US-4944401-$.DID. OR US-4945759-$.DID. OR US-5017916-$.DID. OR US-5074144-$.DID. OR US-5355855-$.DID. OR US-5394136-$.DID. OR US-5400018-$.DID. OR US-5412570-$.DID. OR US-5445347-$.DID. OR US-5446659-$.DID. OR US-5459660-$.DID. OR US-5465079-$.DID. OR US-5471193-$.DID. OR US-5485161-$.DID. OR US-5497329-$.DID. OR US-5581464-$.DID. OR US-5608629-$.DID. OR US-5654501-$.DID. OR US-5680140-$.DID. OR US-5693876-$.DID. OR US-5726893-$.DID. OR US-5790427-$.DID. OR US-5799249-$.DID. OR US-5811884-$.DID. OR US-5815093-$.DID. OR US-5832394-$.DID. OR US-5844473-$.DID. OR US-5862500-$.DID. OR US-5877707-$.DID. OR US-5928291-$.DID. OR US-5974356-$.DID. OR US-6009363-$.DID. OR US-6076026-$.DID. OR US-6185490-$.DID. OR US-6246933-$.DID. OR US-6608554-$.DID. OR US-6744352-$.DID. OR US-20040139034-$.DID. OR US-7015800-$.DID. OR US-7449993-$.DID. OR US-2151458-$.DID. OR US-2164608-$.DID. OR US-2229238-$.DID. OR EP-0383593-$.DID. OR EP-0444738-$.DID. OR EP-0700009-$.DID. OR EP-0895173-$.DID. OR EP-1128265-$.DID. OR EP-1160707-$.DID. OR EP-1241599-$.DID. OR EP-1746537-$.DID. OR DE-19522940-$.DID. OR DE-19728872-$.DID. OR WO-8403359-$.DID. OR WO-8809023-$.DID. OR WO-9310510-$.DID. OR WO-9404975-$.DID. OR WO-9418645-$.DID. OR WO-9428434-$.DID. OR WO-9615636-$.DID. OR WO-9733382-$.DID. OR WO-9847109-$.DID. OR WO-0017721-$.DID. OR WO-0017800-$.DID. OR WO-0118491-$.DID.) and (vehicle with monitor$3) and ((@ad|@rlad)<"19960129"	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/15 06:39
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S21	1650	black box and (airplane or aircraft)	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/16 08:53
S22	5126059	(@rlad|@ad<"19960129")	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/16 08:54
S23	962	black box and (airplane or aircraft) and S22	US-PGPUB;	ADJ	ON	2011/05/16 08:54

			USPAT; USOCR; EPO			
S24	208	(black box same (airplane or aircraft)).detd. and S22	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/16 08:54
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S26	19	(black box same (airplane or aircraft)).ab. and S22	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/16 08:54
S27	1	("5835008").pn. and collect$3 near2 data	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/16 09:01
S28	1	("5835008").pn. and (wireless same transmit$3)	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/16 09:18
S29	0	("5835008").pn. and search$3	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/16 09:21
S30	5126059	(@rlad|@ad<"19960129")	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/16 10:40
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			EPO				

12/2/2011 8:18:28 AM
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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12132487	LING ET AL.
	Examiner	Art Unit
	ROBERT NIQUETTE	3695

SEARCHED			
Class	Subclass	Date	Examiner
705		12-2-2011	RRN

SEARCH NOTES		
Search Notes	Date	Examiner
Updated EAST search	12-2-2011	RRN
Consultation with examiner Theresa Woods	6-16-2011	RRN
NPL search	1-10-2012	EIC Staff

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
705		12-2-2011	RRN

/ROBERT NIQUETTE/ Acting Examiner.Art Unit 3695	

CERTIFICATE OF EFS FILING UNDER 37 CFR §1.8

I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office, Commissioner for Patents, via the EFS pursuant to 37 CFR §1.8 on the below date:

Date: January 11, 2012 Name: James A. Collins Signature: /James A. Collins/

BRINKS HOFER GILSON &LIONE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Appln. of:	Raymond S. Ling et al.		
Appln. No.:	12/132,487	Examiner:	Robert R. Niquette
Filed:	June 3, 2008	Art Unit:	3695
For:	VEHICLE MONITORING SYSTEM	Conf. No.:	7812
Attorney Docket No.:	12654/42		

TRANSMITTAL

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Attached is/are:

☒ Transmittal; Request to Correct of Inventorship Under 37 C.F.R. § 1.48; Statement Under 35 U.S.C. § 116 and 37 C.F.R. 1.48(a); Declaration for Patent Application; Statement Under 37 CFR 3.73(b); and Assignment .

Fee calculation:

☐ No additional fee is required.

☐ Small Entity.

☐ An extension fee in an amount of $_____ for a ____- month extension of time under 37 CFR § 1.136(a).

☒ A petition or processing fee in an amount of $130.00 under 37 CFR § 1.17(i).

☐ An additional filing fee has been calculated as shown below:

						Small Entity			Not a Small Entity	
	Claims Remaining After Amendment		Highest No. Previously Paid For	Present Extra		Rate	Add'l Fee	OR	Rate	Add'l Fee
Total		Minus				x $26=			x $52=	
Indep.		Minus				x 110=			x $220=	
First Presentation of Multiple Dep. Claim						+$195=			+ $390=	
						Total	$		Total	$

Fee payment:

☒ Please charge Deposit Account No. 23-1925 in the amount of $130.00 for Request to Correct of Inventorship.

☐ Payment by credit card in the amount of $_____ (Form PTO-2038 is attached).

☒ The Director is hereby authorized to charge payment of any additional filing fees required under 37 CFR § 1.16 and any patent application processing fees under 37 CFR § 1.17 associated with this paper (including any extension fee required to ensure that this paper is timely filed), or to credit any overpayment, to Deposit Account No. 23-1925.

Respectfully submitted,

January 11, 2012
Date

/James A. Collins/
James A. Collins (Reg. No. 43,557)

-I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office, Commissioner for Patents, via the EFS pursuant to 37 CFR § 1.8.

/James A. Collins/
James A. Collins, Reg. No. 43,557

January 11, 2012
Date of Signature & Date of Transmission

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Appln. of:	Ling et al.		
Appln. No.:	12/132,487	Examiner:	Robert R. Niquette
Filed:	June 3, 2008	Art Unit:	3695
For:	Vehicle Monitoring System	Conf. No.:	7812
Attorney Docket No:	12654-42		

REQUEST TO CORRECT OF INVENTORSHIP UNDER 37 C.F.R. § 1.48

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Progressive Casualty Insurance Company (hereinafter "Progressive") by and through the undersigned counsel, hereby submits this request to correct inventorship for the above referenced application under 37 C.F.R. § 1.48. The requirements of section 37 C.F.R. § 1.48 are set forth below.

(1) It is requested that Robert John McMillan be added as an inventor to the above referenced application.

(2) A statement from Robert John McMillan stating that the error in inventorship occurred without deceptive intent on his part and his executed oath is submitted herewith.

(3) Re-executed oaths from actual inventors Raymond Scott Ling, Richard Ashton Hutchinson, Wilbert John Steigerwald, William Andrew Say, Patrick Lawrence O'Malley, Dane Allen Shrallow, and William Curtis Everett are submitted herewith.

(4) The Director is hereby authorized to charge payment of the processing fee set forth in § 1.17(i) associated with this request (including any extension fee required to ensure that this paper is timely filed), or to credit any overpayment to Deposit Account No. 23-1925.

(5) On August 8, 2008, assignments from Raymond Scott Ling, Richard Ashton Hutchinson, Wilbert John Steigerwald, William Andrew Say, Patrick Lawrence O'Malley, Dane Allen Shrallow, and William Curtis Everett were recorded in the United States Patent and Trademark Office at reel 021360 and frame 0881. On January 10, 2012, an assignment from Robert John McMillan was submitted to the United States Patent and Trademark Office (a copy is attached to this submission with the 37 C.F.R. § 3.73(b) assignee statement).

(6) The assignee, Progressive, hereby consents to the addition of Robert John McMillan, as an inventor to the above reference application by submitting a Statement Under 37 C.F.R. § 3.73(b), attached to this request.

Respectfully submitted,

/James A. Collins/

James A. Collins
Registration No. 43,557
Attorney for Applicant

BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, ILLINOIS 60610
(312) 321-4200

I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office, Commissioner for Patents, via the EFS pursuant to 37 CFR § 1.8.

/James A. Collins/
James A. Collins, Reg. No. 43,557

Date of Signature & Date of Transmission

Attorney Docket No. 12654/42

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

In re Application of: Raymond S. Ling et al.	)	Examiner: Robert Niquette
Serial Number: 12/132,487	)	Group Art Unit: 3695
Title: Vehicle Monitoring System	)	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

STATEMENT UNDER 35 U.S.C. § 116 AND 37 C.F.R. 1.48(a)

I, Robert John McMillan, hereby declare that I am an inventor of the above mentioned patent application. The inventorship error occurred without deceptive intention on my part.

I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001,

and that such willful false statements may jeopardize the validity of the above mentioned patent application or any patent issuing thereon.

12-30-2011
Date

Signature

DECLARATION FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled, **VEHICLE MONITORING SYSTEM**, the specification of which:

☐ is attached hereto.

☒ was filed on June 3, 2008 as Application Serial No. 12/132,487.

☐ and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability as defined in Title 37, Code of Federal Regulations, § 1.56(a).

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
(Number)	(Country)	(Day/Month/Year Filed)	☐ Yes	☐ No

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

(Application Serial No.)	(Filing Date)

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

(Application Serial No.)	(Filing Date)	(Status-patented, pending, abandoned)
10/764,076	January 23, 2004	pending
09/571,650	May 15, 2000	patented
09/135,034	August 17, 1998	patented
08/592,958	January 29, 1996	patented

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Inventor's Signature _____ Date: 12/22/2011
Full name Raymond Scott Ling
Residence (city, state) Westlake, OH
Citizenship USA
Post Office Address 28205 Edgepark Blvd.

Inventor's Signature _____ Date: _____
Full name Richard Ashton Hutchinson
Residence (city, state)
Citizenship USA
Post Office Address

Inventor's Signature _____ Date: _____
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Case No. 12654/42

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PTO/SB/96 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
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STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Ling et al.

Application No./Patent No.: 12/132,487 Filed/Issue Date: June 3, 2008

Titled: Vehicle Monitoring System

Progressive Casualty Insurance Company, a Corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.

states that it is:

1. [X] the assignee of the entire right, title, and interest in;

2. [ ] an assignee of less than the entire right, title, and interest in (The extent (by percentage) of its ownership interest is ____. ___ %); or

3. [ ] the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)

the patent application/patent identified above, by virtue of either:

A. [ ] An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy therefore is attached.

OR

B. [X] A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Ling, Hutchinson, Steigerwald, Say, O'Malley, To: Progressive Casualty Insurance Company

The document was recorded in the United States Patent and Trademark Office at
Reel 021360, Frame 0881, or for which a copy thereof is attached.

2. From: Shrallow, Everett To: Progressive Casualty Insurance Company

The document was recorded in the United States Patent and Trademark Office at
Reel 021360, Frame 0881, or for which a copy thereof is attached.

3. From: McMillan To: Progressive Casualty Insurance Company

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

[ ] Additional documents in the chain of title are listed on a supplemental sheet(s).

[X] As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (*i.e.*, a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Dane A. Shrallow — Signature
January 11, 2012 — Date
Dane A. Shrallow — Printed or Typed Name
Secretary — Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

ASSIGNMENT

WHEREAS, Robert John McMillan hereinafter called the "Assignor", has made the invention described in the United States patent application entitled **VEHICLE MONITORING SYSTEM**, for a full description of which reference is here made to an application for Letters Patent of the United States filed on June 3, 2008 and assigned Application Serial No. 12/132,487

WHEREAS, Progressive Casualty Insurance Company, a corporation organized and existing under the laws of the State of Ohio, having a place of business at 6300 Wilson Mills Road, N72, Mayfield Village, OH 44143, hereinafter called the "Assignee", desires to acquire the entire right, title and interest in and to the invention and the patent application identified above, and all patents which may be obtained for said invention, as set forth below;

NOW, THEREFORE, in consideration of the sum of One Dollar ($1.00), and other valuable and legally sufficient consideration, the receipt of which by the Assignor from the Assignee is hereby acknowledged, the Assignor has sold, assigned and transferred, and by these presents does sell, assign and transfer to the Assignee, the entire right, title and interest for the United States in and to the invention and the patent application identified above, and any patents that may issue for said invention in the United States; together with the entire right, title and interest in and to said invention and all patent applications and patents therefor in all countries foreign to the United States, including the full right to claim for any such application all benefits and priority rights under any applicable convention; together with the entire right, title and interest in and to all continuations, divisions, renewals and extensions of any of the patent applications and patents defined above; together with the right to recover all damages, including, but not limited to, a reasonable royalty, by reason of past, present, or future infringement or any other violation of patent or patent application rights; to have and to hold for the sole and exclusive use and benefit of the Assignee, its successors and assigns, to the full end of the term or terms for all such patents.

The Assignor hereby covenants and agrees, for both the Assignor and the Assignor's legal representatives, that the Assignor will assist the Assignee in the prosecution of the patent application identified above; in the making and prosecution of any other patent applications that the Assignee may elect to make covering the invention identified above; in vesting in the

Assignee like exclusive title in and to all such other patent applications and patents; and in the prosecution of any interference which may arise involving said invention, or any such patent application or patent; and that the Assignor will execute and deliver to the Assignee any and all additional papers which may be requested by the Assignee to carry out the terms of this Assignment.

The Commissioner of Patents and Trademarks is hereby authorized and requested to issue patents to the Assignee in accordance with the terms of this Assignment.

IN TESTIMONY WHEREOF, the Assignor has executed this agreement.

DATED: 12-30-2011

Robert John McMillan

Electronic Patent Application Fee Transmittal

Application Number:	12132487
Filing Date:	03-Jun-2008
Title of Invention:	VEHICLE MONITORING SYSTEM
First Named Inventor/Applicant Name:	Raymond Scott Ling
Filer:	James A. Collins/Tina Sieczkowski
Attorney Docket Number:	12654/42

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Late filing fee for oath or declaration	1051	1	130	130
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
		Total in USD ($)		**130**

Electronic Acknowledgement Receipt	
EFS ID:	11813786
Application Number:	12132487
International Application Number:	
Confirmation Number:	7812
Title of Invention:	VEHICLE MONITORING SYSTEM
First Named Inventor/Applicant Name:	Raymond Scott Ling
Customer Number:	10999
Filer:	James A. Collins/Jesus Rodriguez
Filer Authorized By:	James A. Collins
Attorney Docket Number:	12654/42
Receipt Date:	11-JAN-2012
Filing Date:	03-JUN-2008
Time Stamp:	17:28:23
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$130
RAM confirmation Number	4721
Deposit Account	231925
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees) Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees) Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	transforreqtocorinvent.PDF	45377 e52028033f74506ee66d4e3453466f8c42ec49a1	no	1
Warnings:					
Information:					
2	Request under Rule 48 correcting inventorship	reqtocorinvent.PDF	73492 5098ae6683ff6237035b12fd0cc35873d79caa8f	no	2
Warnings:					
Information:					
3	Request under Rule 48 correcting inventorship	statementunder35usc116.PDF	44201 a9e3ea4bcbb919d4376a70bcc8577f4a317b7dbc	no	2
Warnings:					
Information:					
4	Oath or Declaration filed	declaration.PDF	216389 0b8caa8ca387d443fa151a75484d0509e5acdd5b	no	7
Warnings:					
Information:					
5	Assignee showing of ownership per 37 CFR 3.73(b).	statement37cfr.PDF	142001 f5eb52128c433d5c2db9f2ab120108557dc025d7	no	3
Warnings:					
Information:					
6	Fee Worksheet (SB06)	fee-info.pdf	30049 7f81090ec49514b5b29ea339a2064a5603fbc53b	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	551509		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

CERTIFICATE OF ELECTRONIC TRANSMISSION

I hereby certify that this correspondence is being electronically deposited with the United States Patent and Trademark Office through the Electronic Filing System on: Date: November 29, 2011 Name: Joseph S. Hanasz (Reg. No. 54,720)

Signature: /Joseph S. Hanasz/

Our Case No: 12654/42

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

In re Application of:	)	
	)	
Ling, et al.	)	Examiner: Robert R. Niquette
	)	
Serial No.: 12/132,487	)	Group Art Unit: 3695
	)	
Filing Date: June 3, 2008	)	Confirmation No.: 7812
	)	
For: Vehicle Monitoring System	)	
	)	
	)	

RESPONSE TO OFFICE ACTION

Mail Stop Amendment
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Non-final Office Action mailed June 29, 2011, please consider the following claims and remarks.

Claims begin on page 2 of this paper.

Remarks begin on page 28 of this paper.

CLAIMS

1. (Withdrawn) A risk management device comprising:

an automotive device that provides an interface that filters data that is sent and received across an in-vehicle bus by selectively acquiring vehicle data related to a level of insurable risk or safety of operation, the interface acquires the selected vehicle data from one or more in-vehicle sensors;

a memory that stores the selected vehicle data with relationship data within the vehicle that establishes a connection between the selected vehicle data and one or more risk factors, safety standards, or operating characteristics, together with a unique identifier and a user account; and

a wireless service provider interface that provides access to the selected vehicle data and relationship data retained in the memory, where the wireless service provider interface is responsive to a request to transfer the selected vehicle data and selected relationship data retained in the memory to a remote server.

2. (Withdrawn) The risk management device of claim 1 where the wireless service provider interface is compliant with a wireless transaction facilitator that throttles the transmission rates across the wireless network based on an available bandwidth of the wireless network.

3. (Withdrawn) The risk management device of claim 1 further comprising a dynamic memory allocation processor that allocates a portion of the memory to retain a copy of a legacy version of firmware that comprises input/output instructions when an updated firmware is received through the wireless network and written to the memory, the dynamic memory allocation processor de-allocates the portion of the memory when an error-free version of the updated firmware is stored or installed in the risk management device.

4. (Withdrawn) The risk management device of claim 1 where the wireless network comprises a mobile broadband wireless network that provides full data exchange mobility to two or more vehicles.

5. (Withdrawn) The risk management device of claim 1 where the interface, the memory, and the wireless service provider interface are linked within a portable device.

6. (Withdrawn) The risk management device of claim 1 where the wireless service provider interface comprises a single-chip cellular baseband processor.

7. (Withdrawn) The risk management device of claim 6 where the single-chip cellular baseband processor is Global System for Mobile Communication compliant, Code Division Multiple Access compliant, or General Packet Radio Service compliant.

8. (Withdrawn) The risk management device of claim 6 where the single-chip cellular baseband processor is Global System for Mobile Communication compliant and General Packet Radio Service compliant.

9. (Withdrawn) The risk management device of claim 6 where the single-chip cellular baseband processor comprises integrated interface drivers that enable auxiliary components comprising loudspeakers, display, and memory modules to connect directly to the single-chip.

10. (Withdrawn) The risk management device of claim 1 where the wireless service provider interface comprises an embedded antenna element positioned adjacent to the interface and the memory.

11. (Withdrawn) The risk management device of claim 10 where the embedded antenna element comprises a circuit board element.

12. (Withdrawn) The risk management device of claim 1 where the wireless service provider interface is further responsive to a trigger event by transmitting an alert to a third party when a driving incident occurs.

13. (Withdrawn) The risk management device of claim 12 where the driving incident comprises exceeding a speed threshold, traveling outside of a designated area, or a lock out condition.

14. (Withdrawn) The risk management device of claim 13 where the wireless service provider interface is further responsive to receive a communication from a third party and the alert comprises a text or an aural message.

15. (Withdrawn) The risk management device of claim 3 where the wireless service provider interface is compliant with two or more multiple packet architectures that are automatically detected and one or more multiple packet architectures that are automatically selected through two or more handshakes.

16. (Withdrawn) The risk management device of claim 15 where the automatic detection and automatic selection includes Internet Protocol roaming that maintains connectivity as the vehicle moves from a first coverage area of a selected network to a second coverage area of a second selected network.

17. (Withdrawn) The risk management device of claim 15 where the wireless service provider interface is responsive to a monitored event-driven request to transfer the selected vehicle data and selected relationship data retained in the memory to a remote server when the wireless service provider indicates the capacity to transfer data across the wireless network.

18. (Withdrawn) The risk management device of claim 15 where a unique identifier comprises a unique identifier to the risk management device.

19. (Withdrawn) The risk management device of claim 15 where a unique identifier comprises a unique vehicle identifier.

20. (Withdrawn) The risk management device of claim 15 further comprising a transceiver tuned to receive continuously transmitted trilateral encoded signals through a bandwidth that is separate from the wireless network.

21. (Withdrawn) A system that monitors data transferred among components within a vehicle that is used to determine one or more levels of risk or is used to determine a cost of insurance comprising:

a vehicle bus that sends and receives data between two or more in-vehicle controllers;

an in-vehicle monitor that filters the data that is sent and received across the vehicle bus by selectively polling one or more of the in-vehicle controllers to transmit vehicle data related to a level of risk in operating the vehicle, the selected vehicle data is acquired at a predetermined interval or upon an event;

a processor programmed to store the selected vehicle data in an in-vehicle memory inaccessible to the two or more in-vehicle controllers, the memory retains relationship data that links the selected vehicle data to a vehicle identifier and a wireless network;

a wireless transceiver configured to encrypt and encode the relationship data and the selectively acquired vehicle data and transmit the encoded data through a mobile communication network that provides access to a distributed network.

22. (Withdrawn) The system that monitors data transferred among components within a vehicle of claim 21 where the wireless transceiver is configured to transmit the encoded data through a pulse position protocol without varying the power level or phase of a transmitting signal.

23. (Withdrawn) The system that monitors data transferred among components within a vehicle of claim 21 where the wireless transceiver is compliant with a wireless transaction facilitator that throttles the transmission rates across the mobile communication network based on an available bandwidth of the mobile communication network.

24. (Withdrawn) The system that monitors data transferred among components within a vehicle of claim 21 further comprising a dynamic memory allocation processor that allocates a portion of the memory to retain a copy of a legacy version of firmware that comprises input/output instructions when an updated firmware is transferred to the in-vehicle memory through the mobile communication network, the dynamic memory allocation processor de-allocates the portion of the in-vehicle memory when an error-free version of the updated firmware is stored or installed in the risk management system or when a copy of the legacy version of the software is restored.

25. (Withdrawn) The system that monitors data transferred among components within a vehicle of claim 21 where the mobile communication network comprises a mobile broadband communication network that provides full data exchange mobility to one, two or more vehicles in motion.

26. (Withdrawn) The system that monitors data transferred among components within a vehicle of claim 21 where the wireless service provider interface is compliant with two or more multiple packet architectures that are automatically detected and one or more multiple packet architectures that are automatically selected when a series of signals acknowledge that a communication or transfer of information may occur are received by the wireless transceiver.

27. (Withdrawn) The system that monitors data transferred among components within a vehicle of claim 21 where the wireless transceiver is responsive to an internal event-driven request to transfer the selected vehicle data and the selected relationship data retained in the in-vehicle memory to a remote server when the wireless service provider indicates an available channel capacity to transfer the selected vehicle data and the selected relationship data across the mobile communication network within a predetermined time period.

28. (Withdrawn) The system that monitors data transferred among components within a vehicle of claim 21 further comprising a location processor that processes external navigation signals that are stored in the in-vehicle memory and are transmitted through the mobile communication network.

29. (Withdrawn) The system that monitors data transferred among components within a vehicle of claim 21 further comprising a receiver tuned to receive continuously transmitted trilateral encoded signals through a bandwidth that is separate from the mobile communication network.

30. (Withdrawn) The risk management system of claim 21 where the in-vehicle monitor, the processor, and the wireless transceiver are linked within a portable device.

31. (Withdrawn) The risk management system of claim 21 where the wireless transceiver comprises a single-chip cellular baseband processor.

32. (Withdrawn) The risk management system of claim 31 where the single-chip cellular baseband processor is Global System for Mobile Communication compliant, Code Division Multiple Access compliant, or General Packet Radio Service compliant.

33. (Withdrawn) The risk management system of claim 31 where the single-chip cellular baseband processor is Global System for Mobile Communication compliant and General Packet Radio Service compliant.

34. (Withdrawn) The risk management system of claim 31 where the single-chip cellular baseband processor comprises integrated interface drivers that enable auxiliary components comprising loudspeakers, display, and memory modules to connect directly to the single-chip.

35. (Withdrawn) The risk management system of claim 21 where the wireless transceiver comprises an embedded antenna element positioned adjacent to the in-vehicle monitor, the processor, and the memory.

36. (Withdrawn) The risk management system of claim 35 where the embedded antenna element comprises a circuit board element.

37. (Withdrawn) The risk management system of claim 21 where the wireless transceiver is further configured to respond to a trigger event by transmitting an alert to a third party when a driving incident occurs.

38. (Withdrawn) The risk management system of claim 37 where the driving incident comprises exceeding a speed threshold, traveling outside of a designated area, or a lock out condition.

39. (Withdrawn) The risk management system of claim 38 where the wireless transceiver is further configured to receive a communication from a third party and the alert comprises a text or an aural message.

40. (Previously Presented) A system that monitors and facilitates a review of data collected from a vehicle that is used to determine a level of safety or cost of insurance comprising:

a processor that collects vehicle data from a vehicle bus that represents aspects of operating the vehicle;

a memory that stores selected vehicle data related to a level of safety or an insurable risk in operating a vehicle;

a wireless transmitter configured to transfer the selected vehicle data retained within the memory to a distributed network and a server;

a database operatively linked to the server to store the selected vehicle data transmitted by the wireless transmitter, the database comprising a storage system remote from the wireless transmitter and the memory comprising records with operations for searching the records and other functions;

where the server is configured to process selected vehicle data that represents one or more aspects of operating the vehicle with data that reflects how the selected vehicle data affects a premium of an insurance policy, safety or level of risk; and

where the server is further configured to generate a rating factor based on the selected vehicle data stored in the database.

41. (Previously Presented) The system that monitors and facilitates a review of data collected from a vehicle of claim 40 where the wireless transmitter is configured to transfer the selected vehicle data retained within the memory through a pulse position protocol without varying the power level or phase of a transmitting signal.

42. (Original) The system that monitors and facilitates a review of data collected from a vehicle of claim 40 where the wireless transmitter is compliant with a wireless transaction facilitator that throttles the transmission rates across the wireless network based on an available bandwidth of the wireless network.

43. (Original) The system that monitors and facilitates a review of data collected from a vehicle of claim 40 further comprising a dynamic memory allocation processor that allocates a portion of the memory to retain a copy of a legacy version of firmware that comprises input/output instructions when an updated firmware is transferred to the memory through the wireless network, the dynamic memory allocation processor de-allocates the portion of the memory when an error-free version of the updated firmware is stored or installed in the system or when a copy of the legacy version of the software is restored to control the processor of the system.

44. (Original) The system that monitors and facilitates a review of data collected from a vehicle of claim 40 where the wireless network comprises a mobile broadband communication network that provides full data exchange mobility up to vehicle speeds of about 100 miles per hour.

45. (Original) The system that monitors and facilitates a review of data collected from a vehicle of claim 40 where the wireless transmitter is compliant with two or more multiple packet architectures that are automatically detected and one or more multiple packet architectures that are automatically selected when a series of signals acknowledge that a communication or transfer of information or data may occur.

46. (Original) The system that monitors and facilitates a review of data collected from a vehicle of claim 40 where the wireless transmitter is responsive to an in-vehicle event-driven request to transfer the selected vehicle data retained in the memory to a remote server when the wireless network indicates an available channel capacity to transfer the selected vehicle data across the wireless network.

47. (Original) The system that monitors and facilitates a review of data collected from a vehicle of claim 40 further comprising a receiver tuned to receive continuously transmitted trilateral encoded signals through a bandwidth that is separate from the wireless network.

48. (Original) The risk management system of claim 40 where the processor, the memory, and the wireless transmitter are in communication within a portable device.

49. (Original) The risk management system of claim 40 where the wireless transmitter comprises a single-chip cellular baseband processor.

50. (Original) The risk management system of claim 49 where the single-chip cellular baseband processor is Global System for Mobile Communication compliant, Code Division Multiple Access compliant, or General Packet Radio Service compliant.

51. (Original) The risk management system of claim 49 where the single-chip cellular baseband processor is Global System for Mobile Communication compliant and General Packet Radio Service compliant.

52. (Original) The risk management system of claim 49 where the single-chip cellular baseband processor comprises integrated interface drivers that enable auxiliary components comprising loudspeakers, display, and memory modules to connect directly to the single-chip.

53. (Original) The risk management system of claim 40 where the wireless transmitter comprises an embedded antenna element adjacent to the processor and the memory.

54. (Original) The risk management system of claim 53 where the embedded antenna element comprises a circuit board element.

55. (Original) The risk management system of claim 40 where the wireless transmitter is further configured to respond to a trigger event by transmitting an alert to a third party when a driving incident occurs.

56. (Original) The risk management system of claim 55 where the driving incident comprises exceeding a speed threshold, traveling outside of a designation, or a lock out condition.

57. (Original) The risk management system of claim 56 where the wireless transmitter comprises a transceiver configured to receive a communication from a third party and the alert comprises a text or an aural message.

58. (Withdrawn) A system that monitors data collected from a vehicle bus that is used to determine a cost of insurance comprising:

a data monitor that monitors a vehicle bus that transfers data among electronic components within a vehicle;

a storage device that receives vehicle data from the vehicle bus to a first memory within the vehicle;

a second memory within the storage device that receives metadata that is logically linked to the vehicle data written to the storage device within the vehicle each time the vehicle data is written to the storage device;

a processor in communication with the storage device through a network of computers associated with an identifying number on a distributed network;

a database operatively linked to the storage device to store the vehicle data and the metadata written to the storage device, the database comprising a storage system comprising records with operations for searching and other functions; and

where the vehicle data is accessible through software retained in a computer readable storage medium that allows a user to access insurance files related to an existing insurance policy or a renewal of an insurance policy;

where the processor is programmed to generate a rating factor based on the vehicle data and metadata written to the database.

59. (Withdrawn) The system of claim 58 where the second processor is further programmed to generate a display in which a vehicle operator may review the vehicle data stored in the database related to the operator's vehicle accelerations, decelerations, seat belt usage, vehicle speed, time of day, date, location, identity, vehicle identity, tire pressure, telephone usage, entertainment status, vehicle mileage, or turn signal usage.

60. (Withdrawn) The system of claim 58 where the second processor is further programmed to compare a category of the vehicle data to a similar category of data monitored in other vehicles.

61. (Withdrawn) The system of claim 58 where the second processor and the database reside at a Web site operatively linked to the first processor through the Internet, the Web site being programmed to deliver customized insurance data related to a usage based insurance and an operator of the vehicle.

62. (Withdrawn) The system of claim 58 where the second processor is programmed to determine a cost of renewing insurance based on the vehicle data and metadata written to the database.

63. (Withdrawn) The system of claim 58 where the second processor is programmed to determine a prospective cost of insurance based on receiving the vehicle data and meta data written to the storage device at a Web site.

64. (Withdrawn) The system of claim 58 further comprising a third processor in communication with the data monitor, the third processor integrated within an electronic management system within the vehicle.

65. (Withdrawn) The system of claim 58 where the data monitor is compliant with an OBD protocol or an SAE J-1962 protocol.

66. (Withdrawn) The system of claim 58 where the second processor is programmed to access the database of vehicle data and metadata and process at least a portion of the vehicle data to generate a cost of insurance.

67. (Withdrawn) The system of claim 58 where the second processor is programmed to access the database of vehicle data and metadata and process at least a portion of the vehicle data to generate a prospective cost of insurance.

68. (Withdrawn) The system of claim 67 where the cost of insurance comprises a cost of renewing an existing insurance policy.

69. (Withdrawn) The system of claim 67 where the vehicle data is generated by one or more devices that monitor, measure, and control the operation of the vehicle.

70. (Withdrawn) A data logging device that tracks the operation of a vehicle, comprising:

a storage device comprising a first memory portion that may be read from and is written to in a vehicle and a second memory portion that may be read from and is written to in the vehicle, the second memory portion retains attributes of datum or data logically associated with the data stored in the first memory portion;

a processor that reads data from an in-vehicle automotive bus that transfers data from vehicle sensors to other automotive components, the processor writes data that reflect a level of safety to the first memory portion and the second memory portion; and

a communication device that links the storage device to a network of computers associated with a publicly accessible distributed network, the communication device is accessible through software retained on a computer readable storage medium that allows a user to access insurance files related to an insurance policy and allows the user to access other software related to the insurance files,

where the first memory portion and the second memory portion retain data when an external power source is not coupled to the first memory portion and the second memory portion, respectively, and are inaccessible to an in-vehicle OEM system or an automotive scan tool.

71. (Withdrawn) A data logging device that tracks the operation of a vehicle, comprising:

a first storage device comprising a first memory portion that may be read from and is written to in a vehicle;

a second storage device comprising a second memory portion that may be read from and is written to in the vehicle that retains attributes of data logically associated with one or more data elements stored in the first storage device;

a central processing unit that reads data from an automotive bus that transfers data from vehicle sensors to other automotive components and writes data to the first memory portion;

a circuit that generates a steady stream of pulses that synchronizes the transfer of data from the automotive bus to the first memory portion; and

a communication device that links the storage device to a network of computers associated with an identifying number on a publicly accessible distributed network and is accessible through software that allows a user to access insurance files related to an existing insurance policy or a renewal of an insurance policy and allows the user to access other software related to the insurance files,

where the first memory portion and the second memory portion retain data when an external power source is not coupled to the first memory portion and the second memory portion, respectively.

72. (Withdrawn) The data logging device of claim 71 where the circuit that generates the steady stream of pulses is remote from the vehicle.

73. (Withdrawn) The data logging device of claim 72 where the circuit that generates the steady stream of pulses generates the attributes of data associated with one or more data items stored in the first storage device.

74. (Withdrawn) A data logging device that tracks the operation of a vehicle, comprising:

a storage device comprising a first memory portion that is read from and is written to in a vehicle and a second memory portion that is read from and is written to in the vehicle that retains attributes of data logically associated with one or more data items stored in the first storage device;

a central processing unit that reads data from an automotive bus that transfers data from vehicle sensors to other automotive components and writes data to the first memory portion; and

a wireless communication device that links the storage device to a network of computers associated with an identifying number on a publicly accessible distributed network and is accessible through software retained on a computer readable storage medium that allows a user to access insurance files related to an existing insurance policy or a renewal of an insurance policy and allows the user to access other software related to the insurance files,

where the first memory portion and the second memory portion retain data when an external power source is not coupled to the first memory portion and the second memory portion, respectively; and

where the software is configured to allow a party to change some or all of the data written to the storage device and where a second software retained on a computer readable storage medium remote from the vehicle is configured to allow the party to transmit the unchanged data and transmit the changed data to a Web server at the party's discretion.

75. (Withdrawn) A device that monitors the operation of a vehicle, comprising:

a vehicle bus that transfers data from vehicle sensors within a vehicle;

a first processor in communication with the vehicle bus and operative to track one or more of vehicle speed data, position data, and aggressive driving behavior data from the vehicle bus;

a global positioning receiver in communication with the first processor that processes position data, time data, and velocity data;

an on board vehicle diagnostic connector interfaced to the vehicle bus and the first processor; and

a data logger interfaced to the on board diagnostic connector and operative to receive the one or more of vehicle speed data, position data, and aggressive driving behavior data in a memory in the data logger,

where the data logger is operative to upload the one or more of vehicle speed data, position data, and aggressive driving behavior data from the memory to a second processor remote from the first processor,

where the second processor is programmed to generate Internet documents based on the uploaded data and an assigned level of risk.

76. (Withdrawn) The device of claim 75 where the aggressive driving behavior data comprises data that exceeds a first predetermined threshold or does not exceed a second predetermined threshold.

77. (Withdrawn) The device of claim 75 where the data logger comprises a machine interface operative to communicate with the first processor and the second processor and a virtual interface operative to interface a computer.

78. (Withdrawn) The device of claim 75 where the data logger is operative to store metadata in a second memory of the data logger each time any of the vehicle speed data, the position data, or aggressive driving behavior data is written to the memory.

79. (Withdrawn) The device of claim 75 where the data logger uploads vehicle speed data or position data to an Internet site.

80. (Withdrawn) The device of claim 75 where the data logger uploads vehicle speed data, aggressive driving behavior data, and/or position data to an Internet site.

81. (Withdrawn) The device of claim 75 where the data logger comprises a removable storage device and a non-removable storage device.

82. (Withdrawn) A system that determines a cost of insurance comprising:

a device that writes and records one or more characteristics related to a level of risk of operating a vehicle through an automotive communication link;

means for a party associated with the vehicle to review the recorded characteristics and review how the recorded characteristics affect a vehicle safety, a level of risk, or a cost of insurance;

means to enable the transmission of the recorded characteristics to an insurer through a wireless network;

means to transmit the recorded characteristics to the insurer automatically through a distributed network from the vehicle;

means for assigning a level of risk to the operation of the vehicle based on the recorded characteristics; and

means for determining a cost of an insurance policy based on the assigned level of risk.

83. (Withdrawn) The system of claim 82 where the means for assigning the level of risk to the operation of the vehicle based on the recorded characteristics and the means for the party associated with the vehicle to review the recorded characteristics and review how the recorded characteristics affect a cost of insurance reside on a computer remote from the publicly accessible distributed network and remote from a Web server.

84. (Withdrawn) The system of claim 82 further comprising software retained on a computer readable storage medium that compares at least one of the recorded characteristics to at least one characteristic of one or more parties.

85. (Withdrawn) The system of claim 82 further comprising software retained on a computer readable storage medium that compares at least one of the recorded characteristics to an averaged characteristic of a plurality of parties.

86. (Withdrawn) The system of claim 82 further comprising a wireless interface configured to link the device that writes and records characteristics related to the level of risk of operating the vehicle to the means for the party associated with the vehicle to review the recorded characteristics and review how the recorded characteristics affect the cost of insurance.

87. (Withdrawn) The system of claim 82 further comprising a graphical user interface in communication with the means for the party associated with the vehicle to review the recorded characteristics and review how the recorded characteristics affect a cost of insurance.

88. (Withdrawn) The system of claim 82 where the device that writes and records characteristics related to the level of risk of operating the vehicle through the automotive communication link comprises a portable plug-in module that does not lose its content when the portable plug-in module is not connected to an external power source and the portable plug-in module comprises a storage medium that may only be erased in blocks.

89. (Withdrawn) The system of claim 82 further comprising an application that translates data received from the device that writes and records characteristics related to the level of risk of operating the vehicle from a first format to a second format and transmits the translated data to an insurer's Web site that is remote from the application by specifying a protocol to transmit the translated data and by identifying a server that serves the insurer's Web site.

90. (Withdrawn) The system of claim 89 where the application comprises software retained on a computer readable storage medium executed by a processor that generates user-centric screens that summarize a user's driving behavior by processing one or more types of coded data received through a second separate wireless communication link, where the software is configured to allow the party to change a portion of the data or change all of the data transmitted to the insurer's Web site.

91. (Withdrawn) The system of claim 82 where the means for determining the cost of the insurance policy based on the assigned level of risk comprises means for determining a prospective cost adjustment for an existing insurance policy or a renewal of an insurance policy based on the assigned level of risk.

92. (Withdrawn) A method of monitoring, communicating, and reviewing data collected from a vehicle that is used to determine a cost of insurance comprising:

monitoring one or more devices that monitor, measure, or control the operation of the vehicle;

writing data from one or more selected devices within a vehicle to an in-vehicle storage device, the data being related to the level of risk of operating the vehicle;

transmitting a portion of the data written to the storage device through a wireless link to a server that is remote from the vehicle by specifying a communication protocol to transmit the portion of data and by identifying a destination; and

calculating a premium of an insurance policy based on the portion of data transmitted through the wireless link.

93. (Withdrawn) The method of claim 92 further comprising transmitting, to a party associated with the vehicle, data associated with a premium of the insurance policy, a surcharge to the premium of the insurance policy or a discount to the premium of the insurance policy.

94. (Withdrawn) The method of claim 93 further comprising developing an operational profile of an insured party that comprises comparing data about the insured party with data from one or more other vehicle operators based on a selected characteristic of some of the one or more other vehicle operators.

95. (Withdrawn) The method of claim 94 further comprising classifying groups of vehicle operators based on one or more characteristics of the operators.

96. (Withdrawn) The method of claim 95 where the premium for the insurance policy comprises a premium for renewing the insurance policy.

97. (Withdrawn) The method of claim 95 where the premium for the insurance policy comprises a current or prospective premium for an existing insurance policy.

98. (Withdrawn) The method of claim 93 further comprising writing metadata about each of the data written to the storage device and transmitting the metadata written to the storage device through the publicly accessible distributed network to the server that is remote from the vehicle.

99. (Withdrawn) The method of claim 92 further comprising calculating a current or a prospective cost of insurance based on a portion of data written to the storage device.

100. (Withdrawn) The method of claim 92 further comprising transmitting a portion of the data written to the storage device to a publicly accessible distributed network through the wireless network that provides substantial mobility up to vehicle speeds of about 55 miles per hour.

101. (Withdrawn) The method of claim 92 further comprising developing an operational profile of an insured party comprising characteristics related to a level of risk of operating a vehicle.

102. (Withdrawn) The method of claim 101 where the operational profile further comprises characteristics associated with a driver of the vehicle.

103. (Withdrawn) The method of claim 92 where the storage device is operative to interface an on-board diagnostic port coupled to a vehicle bus that is coupled to a first processor local to the vehicle and is further operative to interface a second processor remote from the vehicle.

104. (Withdrawn) A method of monitoring and reviewing data collected from a vehicle bus that is used to determine a cost of insurance comprising:

monitoring a vehicle bus that transfers data among electronic components within a vehicle;

writing data received from the vehicle bus to a device that retains content when not connected to an external power source at a rate the data is received;

executing a first program that enables the wireless transmission of a portion of the data written to the device through a publicly accessible network to a server that is remote from the vehicle by specifying a communication protocol to transmit the portion of data;

executing a second program that calculates a premium of an insurance policy based on the portion of data; and

executing a third program that generates a document summarizing the premium of the insurance policy;

where the first program, the second program, and the third program are stored on a distributed computer readable storage medium.

105. (Withdrawn) The method of claim 104 where writing data comprises logging data in a plug-in module configured to interface a processor coupled to an on board diagnostic port in the vehicle, where the plug-in module is operative to store a number of miles traveled in a predetermined time period.

106. (Withdrawn) The method of claim 104 where writing data comprises writing vehicle speed data, vehicle acceleration data, vehicle deceleration data, turn signal usage data, seat belt usage data, time of day data, date data, location data, operator identity data, vehicle identity data, tire pressure data, telephone usage data, entertainment status data, revolutions per minute data, trip start data, trip end data, relative speed data, or vehicle mileage data in the device.

107. (Withdrawn) The method of claim 106 where writing data further comprises writing data that indicates a level of willingness of a party to monitor an aspect of the vehicle operation.

108. (Withdrawn) The method of claim 106 where writing data further comprises writing data that records a connection event of the device or a disconnection event of the device.

109. (Withdrawn) The method of claim 104 where the second program comprises software that enables the user to observe a vehicle's position determined by processing two kinds of coded signals received from a source external to the vehicle.

110. (Withdrawn) The method of claim 104 where the calculation of the premium of the insurance policy, or a surcharge or a discount to the premium of the insurance policy, is determined only when requested by a party associated with the vehicle or a party associated with the insurance policy.

111. (Withdrawn) The method of claim 104 further comprising processing the data received from the vehicle bus and displaying a cost of insurance based on the data written to the device.

112. (Withdrawn) The method of claim 104 further comprising modifying the data received from the vehicle bus and processing the modified data to determine a cost of insurance based on the modified data when requested by a party associated with the vehicle or a party associated with the insurance policy, where the data comprises vehicle speed data, vehicle acceleration data, vehicle deceleration data, turn signal usage data, seat belt usage data, time of day data, date data, location data, operator identity data, vehicle identity data, tire pressure data, telephone usage data, entertainment status data, revolutions per minute data, trip start data, trip end data, relative speed data, or vehicle mileage data.

113. (Withdrawn) The method of claim 104 further comprising receiving a continuously transmitted code from a communication link remote from the vehicle bus and remote from the publicly accessible network and writing a portion of the continuously transmitted code in the device.

114. (Withdrawn) The method of claim 113 further comprising receiving a portion of the data written to the device at an insurer's Web site, and transmitting second data based on the received data to a client application that generates a Web document that comprises variable content.

115. (Withdrawn) The method of claim 104 further comprising receiving software updates to the device through a Web site and the wireless network.

116. (Withdrawn) A method of monitoring and reviewing data collected from a vehicle that is used to determine a cost of insurance comprising:

collecting vehicle data from a vehicle bus that represents aspects of operating the vehicle;

writing the collected vehicle data to a storage device inaccessible to original equipment manufacturer's systems;

transferring the collected vehicle data written to the storage device to a processor that is remote from the vehicle; and

displaying the collected vehicle data that represents the aspect of operating the vehicle with data that reflects how the collected vehicle data affects a safety score, rating factor or a premium or an adjustment to a premium of an insurance policy.

117. (Withdrawn) The method of claim 116 further comprising entering additional vehicle data that reflects a different aspect of operating the vehicle and displaying how the additional vehicle data would affect the safety of operating a vehicle or the premium of the insurance policy.

118. (Withdrawn) The method of claim 116 where collecting vehicle data comprises reading powertrain sensor data from a vehicle bus that transfers data from electronic components of the vehicle.

119. (Withdrawn) The method of claim 116 where collecting data further comprises reading sensor data through an on board diagnostic connector of the vehicle.

120. (Withdrawn) The method of claim 116 further comprising determining a rating factor based on an analysis of the collected vehicle data.

121. (Withdrawn) The method of claim 116 further comprising analyzing the collected vehicle data and determining a safety score based on the analysis of the collected vehicle data.

122. (Withdrawn) The method of claim 116 further comprising receiving the collected vehicle data, determining an insurance risk rating, and analyzing the collected vehicle data to determine the premium of the insurance policy or adjust the premium of the insurance policy, where the collected vehicle data comprises mileage data and the pricing is based, in whole or in part, on miles driven.

123. (Withdrawn) The method of claim 117 where entering additional vehicle data further comprises manually entering data or manually modifying data through a graphical user interface.

124. (Withdrawn) The method of claim 116 where the act of displaying the cost data comprises generating a document that summarizes the premium of the insurance policy or generating a document that summarizes a surcharge or discount to the premium of the insurance policy.

125. (Withdrawn) The method of claim 116 further comprising executing software that is operative to receive the collected vehicle data that represents aspects of operating the vehicle at a Web server; generating a Web page that comprises a risk rating and portions of the collected vehicle data at the Web server; and transmitting the Web page to a computer remote from the Web server and the vehicle by specifying a protocol to transmit the data and by identifying the computer.

126. (Withdrawn) The method of claim 125 further comprising executing software at the computer remote from the vehicle and the Web server that allows the operator to change data related to the operation of the vehicle; transmitting the changed data to the Web server by specifying a protocol to transmit the changed data and by identifying the Web server; generating a second Web page that comprises updated insurance cost data based on the changed data; and transmitting the second Web page to the computer remote from the Web server and the vehicle by specifying a protocol to transmit the updated insurance cost data and by specifying an address of the computer.

127. (Withdrawn) The method of claim 126 where the second Web page comprises a second risk rating.

128. (Withdrawn) A method of providing a cost, or an adjustment to the cost, of an insurance policy comprising:

monitoring a vehicle bus that transfers data among electronic components within a vehicle;

writing mileage data from the vehicle bus to a device that retains content when not connected to an external power source at a predetermined interval or at a same rate the mileage data is received;

executing a first program retained on a computer readable storage medium that enables a user to wirelessly transmit the mileage data written to the device from the vehicle through a publicly accessible network to a server that is remote from the vehicle and the device; and

determining a cost of insurance based on the mileage data transmitted to a second program resident to the server.

129. (Withdrawn) The method of claim 128 where the cost of insurance is further based on one or more additional sets of data selected from the group consisting of: vehicle speed data, brake data, turn signal data, seat belt usage data, clock data, vehicle user data, and vehicle identification data.

130. (Withdrawn) The method of claim 129 where the cost of insurance is further based on any one or more of vehicle acceleration data, vehicle deceleration data, location data, environmental conditions data, relative speed data, or relative distance data.

131. (Previously Presented) The system that monitors and facilitates a review of data collected from a vehicle of claim 40 where the server is further configured to calculate an insured's premium under the insured's insurance policy based on the rating factor, or a surcharge or a discount to the insured's premium, based on the rating factor.

132. (Previously Presented) The system that monitors and facilitates a review of data collected from a vehicle of claim 40 where the server is further configured to process selected vehicle data that represents one or more aspects of operating the vehicle with data that reflects how the selected vehicle data affects an insured's premium under an insured's insurance policy.

133. (Withdrawn) The system of claim 58 where the processor is further programmed to calculate a premium of an insurance policy, or a surcharge or a discount to the premium of the insurance policy, based on the vehicle data and the metadata stored in the database.

134. (Withdrawn) The system of claim 58 where the processor comprises a plurality of processors.

REMARKS

I. Priority Date

The present application claims priority back to U.S. Pat. App. No. 08/592,958, filed January 29, 1996 (Now U.S. Pat. No. 5,797,134). The Office Action relies on Colemere (U.S. Pat. No. 5,835,008) to reject all the pending claims. The Colemere patent issued from a non-provisional application filed November 27, 1996, which is almost 10 months after the filing date of the earliest priority application in the priority chain of the present application. The Colemere patent does claim priority to a provisional application filed November 28, 1995 (60/007,650). A copy of this provisional application is provided in the Fifth Supplemental Information Disclosure Statement filed herewith. However, the content of the Colemere patent is not available as "prior art" against any claims of the present application that find support in the original priority application filed January 29, 1996 unless the relevant content of the Colemere patent was also included in the November 28, 1995 provisional application.

Some content of the Colemere patent is not included in the Colemere provisional application. As one example, the Colemere patent states: "Insurance companies can use the data provided by the information system to better assess liability and adjust the payout of money accordingly, especially for situations where there was no other evidence or where fraud may occur." The Office Action relies on this passage for several claimed features. However, after review, this passage was not located in the Colemere provisional application. Therefore, the proper priority date of this disclosure for anticipation purposes is the filing date of the non-provisional application, which is after the filing date of the earliest priority application in the priority chain of the present application. To the extent the Office Action is relying on this passage of the Colemere patent for any rejection, the Colemere patent is not proper prior art against any claim of the present application that finds support in the original priority application filed January 29, 1996. Furthermore, for any other claims of the present application, the Colemere reference does not anticipate the claims for the additional reasons discussed below.

II. 35 U.S.C. § 102 Claim Rejection: Claims 40-57, 131, and 132

Claim 40 is directed to a system that monitors and facilitates a review of data collected from a vehicle that is used to determine a level of safety or cost of insurance. The system includes a processor that collects vehicle data, a memory that stores selected vehicle data, a

wireless transmitter configured to transfer the selected vehicle data to a server, and a database. The database is a storage system remote from the wireless transmitter and the memory. The database comprises records with operations for searching the records and other functions. The server is configured to generate a rating factor based on the selected vehicle data stored in the database.

Colemere discloses a system that monitors the position and motions of a driver's feet to provide information that can be used by the driver, other drivers, vehicle systems, and traffic management authorities. *See* Abstract. Insurance companies may also use the data to better assess liability and adjust the payout of money accordingly. *See* column 12, lines 20-24. The system includes sensors 500, a processor 501, and a recorder 505. The sensors 500 provide the position of the driver's feet. *See* column 15, lines 2-3. The processor 501 keeps track of the position of the feet, provides calculations, determines which information is sent to which driver presentation or vehicle system, and decides when to transfer information to remote systems. *See* column 15, lines 11-15. The recorder 505 stores the system data. *See* column 15, lines 18-21.

For Colemere to anticipate claim 40 under 35 U.S.C. § 102, Colemere must disclose every element of the claim. *See* MPEP 2131. However, Colemere does not disclose every element of claim 40. For example, Colemere does not disclose at least (1) a database operatively linked to the server to store the selected vehicle data transmitted by the wireless transmitter, the database comprising a storage system remote from the wireless transmitter and the memory comprising records with operations for searching the records and other functions; and (2) where the server is further configured to generate a rating factor based on the selected vehicle data stored in the database.

First, Colemere does not disclose the claimed database features. As one example, Colemere does not disclose the database comprising a storage system remote from the wireless transmitter and the memory. The Office Action relies on at least some of the same features of Colemere for both the claimed memory and the claimed database. Specifically, the Office Action appears to rely on the recorder 505 of Colemere (by common citations to column 15, lines 18-21 and claim 16 of Colemere) for both these claimed features. However, claim 40 recites that the database is remote from the memory, thus the recorder 505 of Colemere cannot be used for both the claimed memory and the claimed database. The Office Action's additional citations to Colemere for the claimed database (e.g., column 7, line 51 to column 8, line 14)

relate to the wireless transmission of data to remote locations. However, these passages do not provide any details that could show the claimed database at these remote locations. For example, the cited passages of Colemere are completely silent regarding a database comprising records with operations for searching the records and other functions.

Second, Colemere does not disclose the claimed rating factor generation feature. The Office Action relies on column 12, lines 19-23 of Colemere for anticipating this feature. This passage discloses that insurance companies can use the data from the foot position tracking system to better assess liability and adjust the payout of money accordingly. However, assessing liability or adjusting the payout of money is only relevant to determining fault and settling an insurance claim after an accident occurs, not for establishing a rating factor based on the risk presented by the driver. The Office Action does not explain how assessing liability or adjusting a payout of money by the insurance company would disclose generating a "rating factor" for an insured driver based on the selected vehicle data. At best, this reference in Colemere merely suggests using the data to identify who is liable for an accident (e.g., the identification of "Bob Smith" as the liable party), or whether the money to be paid out can be adjusted based on the liability determination (e.g., deciding to pay out nothing because "Bob Smith," who is insured by a different company, was deemed liable). The identification of "Bob Smith" as the liable driver or deciding not to pay his claim does not disclose generating a "rating factor" upon which to determine a cost of insurance.

In contrast, the description of the present application shows examples of "rating factors" generated from the monitored data, such as, among other examples, the safety score 856 in Figure 8 or the daytime mileage adjustment 1026, the nighttime mileage adjustment 1028, and the high risk mileage adjustment 1030 in Figure 10. *See* paragraphs 114 and 118 of the present application. In short, Colemere does not disclose a server that is configured to generate a rating factor based on the selected vehicle data stored in the database.

For at least the reasons discussed above, Applicants respectfully request the withdrawal of this rejection of claim 40. Claims 41-57, 131, and 132 are dependent claims and include all of the features of independent claim 40. Therefore, these claims are allowable for at least the same reasons as claim 40 and thus Applicants request the withdrawal of this rejection of claims 41-57, 131, and 132.

Furthermore, the pending dependent claims are allowable over Colemere for at least the following additional reasons:

A. Claim 41

Claim 41 recites that the wireless transmitter is configured to transfer the selected vehicle data retained within the memory through a pulse position protocol without varying the power level or phase of a transmitting signal. The Office Action cites various passages of Colemere for this claim, but these passages describe nothing about a "pulse position protocol" or whether Colemere's system transmits the data "without varying the power level or phase of a transmitting signal." The Office Action does not address this lack of disclosure in Colemere or even make clear that the missing description is necessarily present. Therefore, because Colemere does not disclose every feature of claim 41, Colemere cannot anticipate claim 41. If the Office maintains this rejection of claim 41 in view of Colemere, Applicants respectfully request a detailed explanation of how the cited passages disclose the use of a "pulse position protocol" or transmission of data "without varying the power level or phase of a transmitting signal."

B. Claim 42

Claim 42 recites that the wireless transmitter is compliant with a wireless transaction facilitator that throttles the transmission rates across the wireless network based on an available bandwidth of the wireless network. The Office Action cites various passages of Colemere for this claim, but these passages are completely silent regarding data transmission rates, throttling transmission rates, or throttling transmission rates based on an available bandwidth of a wireless network. The Office Action does not address or overcome this lack of disclosure in Colemere. Therefore, because Colemere does not disclose every feature of claim 42, Colemere cannot anticipate claim 42. If the Office maintains this rejection of claim 42 in view of Colemere, Applicants respectfully request a detailed explanation of how the cited passages disclose the use of a "wireless transaction facilitator" or any other component that throttles the transmission rate across the wireless network based on an available bandwidth of the wireless network.

C. Claim 43

Claim 43 includes a dynamic memory allocation processor that allocates a portion of the memory to retain a copy of a legacy version of firmware that comprises input/output instructions when an updated firmware is transferred to the memory through the wireless network. Claim 43 also recites that the dynamic memory allocation processor de-allocates the portion of the

memory when an error-free version of the updated firmware is stored or installed in the system or when a copy of the legacy version of the software is restored to control the processor of the system. The Office Action cites various passages of Colemere for this claim, but these passages are completely silent regarding firmware, the handling of legacy versions of firmware, updated firmware, or the allocation and de-allocation of memory for firmware. The Office Action does not address or overcome this lack of disclosure in Colemere. Therefore, because Colemere does not disclose every feature of claim 43, Colemere cannot anticipate claim 43. If the Office maintains this rejection of claim 43 in view of Colemere, Applicants respectfully request a detailed explanation of how the cited passages disclose allocating a portion of memory to retain a copy of a legacy version of firmware when an updated firmware is transferred to the memory, and de-allocating the allocated memory when an error-free version of the updated firmware is stored or installed in the system or when a copy of the legacy version of the software is restored to control the processor of the system.

D. Claim 44

Claim 44 recites that the wireless network comprises a mobile broadband communication network that provides full data exchange mobility up to vehicle speeds of about 100 miles per hour. The Office Action cites various passages of Colemere for this claim, but these passages are completely silent regarding "data exchange mobility" and whether Colemere's system provides full data exchange mobility up to vehicle speeds of about 100 miles per hour. The Office Action does not address or overcome this lack of disclosure in Colemere. Therefore, because Colemere does not disclose every feature of claim 44, Colemere cannot anticipate claim 44. If the Office maintains this rejection of claim 44 in view of Colemere, Applicants respectfully request a detailed explanation of how the cited passages disclose the use of a mobile broadband communication network that provides full data exchange mobility up to vehicle speeds of about 100 miles per hour.

E. Claim 45

Claim 45 recites that the wireless transmitter is compliant with two or more multiple packet architectures that are automatically detected and one or more multiple packet architectures that are automatically selected when a series of signals acknowledge that a communication or transfer of information or data may occur. The Office Action cites various passages of Colemere for this claim, but these passages are completely silent regarding whether

Colemere's system includes a transmitter that is compliant with two or more multiple packet architectures, whether any automatic architecture detection occurs, whether any automatic selection occurs, or whether any series of signals acknowledge that a communication or transfer may occur. The Office Action does not address or overcome this lack of disclosure in Colemere. Therefore, because Colemere does not disclose every feature of claim 45, Colemere cannot anticipate claim 45. If the Office maintains this rejection of claim 45 in view of Colemere, Applicants respectfully request a detailed explanation of how the cited passages disclose compliance with two or more multiple packet architectures, automatic detection of the architectures, and automatic selection of an architecture when a series of signals acknowledge that a communication or transfer of information or data may occur.

F. Claim 46

Claim 46 recites that the wireless transmitter is responsive to an in-vehicle event-driven request to transfer the selected vehicle data retained in the memory to a remote server when the wireless network indicates an available channel capacity to transfer the selected vehicle data across the wireless network. The Office Action cites various passages of Colemere for this claim, but these passages are completely silent regarding any indication of an available channel capacity to transfer selected vehicle data across a wireless network. The Office Action does not address or overcome this lack of disclosure in Colemere. Therefore, because Colemere does not disclose every feature of claim 46, Colemere cannot anticipate claim 46. If the Office maintains this rejection of claim 46 in view of Colemere, Applicants respectfully request a detailed explanation of how the cited passages disclose a wireless transmitter that is responsive to an in-vehicle event-driven request to transfer the selected vehicle data retained in the memory to a remote server when the wireless network indicates an available channel capacity to transfer the selected vehicle data across the wireless network.

G. Claim 47

Claim 47 includes a receiver tuned to receive continuously transmitted trilateral encoded signals through a bandwidth that is separate from the wireless network. The Office Action cites various passages of Colemere for this claim, but these passages are completely silent regarding "trilateral encoded signals" or transmitting signals through a bandwidth that is separate from the wireless network. The Office Action does not address or overcome this lack of disclosure in Colemere. Therefore, because Colemere does not disclose every feature of claim 47, Colemere

cannot anticipate claim 47. If the Office maintains this rejection of claim 47 in view of Colemere, Applicants respectfully request a detailed explanation of how the cited passages disclose receiving trilateral encoded signals transmitted through a bandwidth that is separate from the wireless network.

H. Claim 50

Claim 50 recites that the single-chip cellular baseband processor is Global System for Mobile Communication compliant, Code Division Multiple Access compliant, or General Packet Radio Service compliant. The Office Action does not provide any citation to Colemere for this claim. Rather, the Office Action merely asserts that the claimed feature is a "matter of design choice." Whether or not a claim may be properly rejected under the "matter of design choice" rationale is a question of obviousness under 35 U.S.C. § 103[1] and is not appropriate for an anticipation rejection under 35 U.S.C. § 102. *See, e.g.,* MPEP 2144.04. By not relying on any feature of Colemere for this claim, the Office Action essentially admits that Colemere does not disclose the claimed feature. Therefore, because Colemere does not disclose every feature of claim 50, Colemere cannot anticipate claim 50.

I. Claim 51

Claim 51 recites that the single-chip cellular baseband processor is Global System for Mobile Communication compliant and General Packet Radio Service compliant. The Office Action does not provide any citation to Colemere for this claim. Rather, the Office Action merely asserts that the claimed feature is a "matter of design choice." Whether or not a claim may be properly rejected under the "matter of design choice" rationale is a question of obviousness under 35 U.S.C. § 103[2] and is not appropriate for an anticipation rejection under 35

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[1]Even in an obviousness analysis under 35 U.S.C. § 103, the Office Action must present a "convincing line of reasoning" as to why one of ordinary skill in the art would have found the claimed feature to be obvious as a matter of design choice. *Ex parte Gunasekar*, Appeal 2009-008345 (BPAI Aug. 31, 2011). The Office Action here provides only a bare conclusory statement that the claimed feature is a matter of design choice, without providing any line of reasoning in support of this statement. The statement in the Office Action that "[t]he instant invention can function regardless of what standard of compliance is employed" is irrelevant to the question of whether the claimed feature would be anticipated as the Office Action asserts or in the alternative obvious to one of ordinary skill in the art.

[2] Furthermore, factual findings made by Office personnel are necessary underpinnings to establish obviousness. MPEP 2141.

U.S.C. § 102. *See, e.g.,* MPEP 2144.04. By not relying on any feature of Colemere for this claim, the Office Action essentially admits that Colemere does not disclose the claimed feature. Therefore, because Colemere does not disclose every feature of claim 51, Colemere cannot anticipate claim 51.

J. Claim 56

Claim 56 recites transmitting an alert to a third party when a driving incident occurs, where the driving incident comprises exceeding a speed threshold, traveling outside of a designation, or a lock out condition. The Office Action relies on column 2, lines 53-65 of Colemere for this claim. This passage discloses that other drivers will be informed of possible maneuvers of the driver based on monitored foot motions of the driver and other data that would normally indicate that a change in vehicle speed or direction may be about to take place. However, Colemere does not disclose alerting a third party based on occurrence of a speed threshold being exceeded, occurrence of travel outside of a designation, or occurrence of a lock out condition. Colemere's system notifies other drivers based on the foot position of the monitored driver. For example, if a foot is hovering over the brake pedal, then the system may assume the vehicle is about to decrease speed. However, Colemere's foot position assumptions do not indicate that the vehicle is exceeding a speed threshold, the vehicle is traveling outside of a designation, or the vehicle is in a lock out condition. Therefore, because Colemere does not disclose every feature of claim 56, Colemere cannot anticipate claim 56.

K. Claim 131

Claim 131 recites that the server is further configured to calculate an insured's premium under the insured's insurance policy based on the rating factor, or a surcharge or a discount to the insured's premium, based on the rating factor. The Office Action relies on column 12, lines 19-23 of Colemere for this claim. This passage discloses that insurance companies can use the data from the foot position tracking system to better assess liability and adjust the payout of money. For example, in the event of an accident, the insurance company could use the foot position information to help determine who may have been at fault for the accident. The determination of fault may control how much, if anything, the insurance company has to pay out. Colemere does not disclose anything about the calculation of an insured's premium under an insured's insurance policy. An insurance premium is money that is flowing into the insurance company, not money that is being paid out by the insurance company. Therefore, Colemere does not disclose

calculating an insured's premium under the insured's insurance policy based on the rating factor, or a surcharge or a discount to the insured's premium, based on the rating factor.

L. Claim 132

Claim 132 recites that the server is further configured to process selected vehicle data that represents one or more aspects of operating the vehicle with data that reflects how the selected vehicle data affects an insured's premium under an insured's insurance policy. The Office Action relies on column 12, lines 19-23 of Colemere for this claim. As discussed above in connection with claim 131, Colemere does not disclose anything regarding insurance premiums. Therefore, Colemere does not disclose processing selected vehicle data that represents one or more aspects of operating the vehicle with data that reflects how the selected vehicle data affects an insured's premium under an insured's insurance policy.

III. Related Applications/Patents

Applicants respectfully request the Examiner to review the claims and the prosecution history, including any Office Actions issued by the U.S. Patent and Trademark Office and any responses filed by Applicants, for Serial No. 08/592,958 (now U.S. Pat. No. 5,797,134); Serial No. 09/135,034 (now U.S. Pat. No. 6,064,970); Serial No. 09/571,650 (now U.S. Pat. No. 6,868,386); Serial No. 10/764,076 (a Notice of Allowance was mailed November 10, 2011); Serial No. 11/868,827; and the reexamination of U.S. Pat. No. 6,064,970 (Serial No. 90/011,252).

IV. Interview Request

If the current rejections are not withdrawn in view of the remarks above, Applicants respectfully request a telephone interview with Examiner Niquette and Primary Examiner Kyle prior to issuance of the next Office Action.

CONCLUSION

Applicants respectfully submit that the claims are in condition for allowance. If any issues remain, Applicants request that the Examiner call the undersigned attorney to expedite the prosecution of this application.

Respectfully submitted,

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I hereby certify that this correspondence is being Electronically Transmitted on the date noted below to:
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
November 29, 2011
Date of Deposit
Joseph S. Hanasz
Name of applicant, assignee or Registered Representative
/Joseph S. Hanasz/
Signature
November 29, 2011
Date of Signature

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Appln. of:	Raymond Scott Ling et al.	
Appln. No.:	12/132,487	Examiner: Robert R. Niquette
Filed:	June 3, 2008	Art Unit: 3695
For:	VEHICLE MONITORING SYSTEM	Confirmation No.: 7812
Attorney Docket No:	12654-42	

FIFTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

This application claims priority under 35 USC §120 to the following United States patent applications: 08/592,958; 09/135,034; 09/571,650; and 10/764,076. In accordance with 37 CFR §1.98(d), copies of the references cited herein which were submitted to, or cited by, the office, in compliance with 37 CFR §1.98(a)-(c) in the earlier application may not be provided herewith. The Examiner is directed to those references cited in all Information Disclosure Statements filed in the priority United States patent applications cited above in addition to the references cited herein.

In accordance with the duty of disclosure under 37 CFR §1.56 and §§1.97-1.98, and more particularly in accordance with 37 CFR §1.97(c), Applicants hereby cite the following reference(s):

U.S. PATENT DOCUMENTS		
DOCUMENT NO.	**DATE**	**NAME**
US 4,710,694	12/01/1987	Sutphin et al.
US 4,742,290	05/03/1988	Sutphin et al.
US 6,154,658	11/28/2000	Caci
US 6,236,933 B1	05/22/2001	Lang
US 6,330,499 B1	12/11/2001	Chou et al.
US 6,370,449 B1	04/09/2002	Razavi et al.
US 2002/095249 A1	07/18/2002	Lang
US 2002/152115 A1	10/17/2002	Morita et al.
US 2003/009347 A1	01/09/2003	Iwai et al.
US 2004/0083041 A1	04/29/2004	Skeen et al.
US 2004/0153362 A1	08/05/2004	Bauer et al.
US 6,810,362 B2	10/26/2004	Adachi et al.
US 2004/0217852 A1	11/04/2004	Kolls
US 6,819,986 B2	11/16/2004	Hong et al.
US 6,850,823 B2	02/01/2005	Eun et al.
US 2005/0182538 A1	08/18/2005	Phelan et al.
US 2006/0106515 A1	05/18/2006	Phelan et al.
US 2006/0111817 A1	05/25/2006	Phelan et al.
US 2006/0122749 A1	06/08/2006	Phelan et al.
US 7,774,217 B1	08/10/2010	Yager et al.
US 7,853,499 B2	12/14/2010	Czupek et al.
US 6,438,472	08/20/2002	Tano et al.

FOREIGN PATENT DOCUMENTS		
DOCUMENT NO.	**DATE**	**COUNTRY**
WO 2004/040405 A2	05/13/2004	WIPO
WO 2004/040405 A3	05/13/2004	WIPO

OTHER ART – NON PATENT LITERATURE DOCUMENTS
AutoWatch – It's There When You're Not, "Are you a business or fleet owner who is interested in knowing when and how your vehicle's are being driven?," EASE Diagnostics, 2 pages.
AutoWatch – It's There When You're Not, Features, EASE Simulation, Inc., Revised January 2, 2006, copyright 1997-2006, 2 pages.
Di Genova, F. et al., "Incorporation of Wireless Communications into Vehicle On-Board Diagnostic (OBD) Systems," Sierra Research Inc., January 18, 2000, 132 pages.
Di Genova, F., " Incorporation of Radio Transponders into Vehicle On-Board Diagnostic Systems, Vol. 2 – Technical Proposal," Sierra Research, Inc., February 26, 1997, 154 pages.
Di Genova, F., " Incorporation of Radio Transponders into Vehicle On-Board Diagnostic Systems, Vol. 2 – Technical Proposal," Sierra Research, Inc., February 27, 1996, 215 pages.
Hayes, D., "Insurers, Tech Firm Team to Track Teen Drivers," NU Online News Service, April 9, printed from the internet at <http://www.propertyandcasualtyinsurancenews.com/cms/nupc/Templates/website/PrinterFriendly.aspx?{…> on April 10, 2007, 1 page.

Roberts, G., "Drive less during rush hour, get a lower insurance rate," Seattle Post-Intelligencer, March 28, 2007, printed from the internet at <http://seattlepi.nwsource.com/printer2/index.asp?ploc=t&refer=http://seatllepi.nwsource.com/transporati…> on March 30, 2007, 1 page.
SERF – System for Electronic Rate and Form Filing, printed from the internet at <http://statelogin.serff.com/serff/updateFilingView.do> on February 15, 2007, 4 pages.
Sierra Research Proposal, "Incorporation of Radio Transponders into Vehicular On-Board Diagnostic Systems, Vol. 1 – Administrative Documents," Sierra Research, Inc., February 27, 1996, 28 pages.
Sierra Research Proposal, "Incorporation of Radio Transponders into Vehicular On-Board Diagnostic Systems, Vol. 3 – Cost Proposal," Sierra Research, Inc., February 27, 1996, 18 pages.
Vehicle Monitoring Products – AutoWatch, EASE Diagnostics – The Leader in PC Automotive Diagnostic Software, EASE Simulation, Inc., Revised April 30, 2004, copyright 1997-2004, 2 pages.
U.S. Provisional Patent Application No. 60/077,650, which is the unpublished provisional parent application of U.S. Pat. No. 5,835,008 that issued, and thus became publically available, on November 10, 1998.

Applicants are enclosing Form PTO-1449 (two sheets), along with a copy of each listed reference for which a copy is required under 37 CFR §1.98(a)(2). As each of the listed references is in English, no further commentary is believed to be necessary, 37 C.F.R §1.98(a)(3). Applicants respectfully request the Examiner's consideration of the above reference(s) and entry thereof into the record of this application.

Applicants also respectfully request the Examiner to review the claims and the prosecution history, including any Office Actions issued by the U.S. Patent and Trademark Office and any responses filed by Applicants, for Serial No. 08/592,958 (now U.S. Pat. No. 5,797,134), Serial No. 09/135,034 (now U.S. Pat. No. 6,064,970), Serial No. 09/571,650 (now U.S. Pat. No. 6,868,386), Serial No. 10/764,076, Serial No. 11/868,827, and reexamination of U.S. Pat. No. 6,064,970 (Serial No. 90/011,252).

U.S. Patent No. 6,064,970 is the subject of litigation in two cases pending in the U.S. District Court for the Northern District of Ohio: (1) *Progressive Casualty Insurance Company v. Safeco Insurance Company of Illinois, et al.,* Case No. 1:10-cv-01370; and (2) *Progressive Casualty Insurance Company v. Allstate Insurance Company et al.*, Case No. 1:11-cv-00082.

By submitting this Statement, Applicants are attempting to fully comply with the duty of candor and good faith mandated by 37 CFR §1.56. As such, this Statement is not intended to constitute an admission that any of the enclosed references, or other information referred to therein, constitutes "prior art" or is otherwise "material to patentability," as that phrase is defined in 37 CFR §1.56(a).

Applicants have calculated a processing fee in the amount of $180.00 to be due under 37 CFR §1.17(p) in connection with the filing of this Information Disclosure Statement. Applicants have enclosed a check covering this fee, or authorized charging the fee to a deposit account or credit card, as indicated in the Transmittal accompanying this Information Disclosure Statement.

Respectfully submitted,

November 29, 2011 /Joseph S. Hanasz/
Date Joseph S. Hanasz (Reg. No. 54,720)

FORM PTO-1449		SERIAL NO. 12/132,487	CASE NO. 12654-42
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT		FILING DATE June 3, 2008	GROUP ART UNIT 3695
(use several sheets if necessary)	APPLICANT(S): Raymond Scott Ling et al.		CONFIRMATION NO. 7812

REFERENCE DESIGNATION **U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER Number-Kind Code (if known)	DATE	NAME	CLASS/ SUBCLASS	FILING DATE
	F1	US 4,710,694	12/01/1987	Sutphin et al.		
	F2	US 4,742,290	05/03/1988	Sutphin et al.		
	F3	US 6,154,658	11/28/2000	Caci		
	F4	US 6,236,933 B1	05/22/2001	Lang		
	F5	US 6,330,499 B1	12/11/2001	Chou et al.		
	F6	US 6,370,449 B1	04/09/2002	Razavi et al.		
	F7	US 2002/095249 A1	07/18/2002	Lang		
	F8	US 2002/152115 A1	10/17/2002	Morita et al.		
	F9	US 2003/009347 A1	01/09/2003	Iwai et al.		
	F10	US 2004/0083041 A1	04/29/2004	Skeen et al.		
	F11	US 2004/0153362 A1	08/05/2004	Bauer et al.		
	F12	US 6,810,362 B2	10/26/2004	Adachi et al.		
	F13	US 2004/0217852 A1	11/04/2004	Kolls		
	F14	US 6,819,986 B2	11/16/2004	Hong et al.		
	F15	US 6,850,823 B2	02/01/2005	Eun et al.		
	F16	US 2005/0182538 A1	08/18/2005	Phelan et al.		
	F17	US 2006/0106515 A1	05/18/2006	Phelan et al.		
	F18	US 2006/0111817 A1	05/25/2006	Phelan et al.		
	F19	US 2006/0122749 A1	06/08/2006	Phelan et al.		
	F20	US 7,774,217 B1	08/10/2010	Yager et al.		
	F21	US 7,853,499 B2	12/14/2010	Czupek et al.		
	F22	US 6,438,472	08/20/2002	Tano et al.		

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER Number-Kind Code (if known)	DATE	COUNTRY	CLASS/ SUBCLASS	TRANSLATION YES OR NO
	F23	WO 2004/040405 A2	05/13/2004	WIPO		
	F24	WO 2004/040405 A3	05/13/2004	WIPO		

EXAMINER INITIAL		OTHER ART – NON PATENT LITERATURE DOCUMENTS (Include name of author, title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published.)
	F25	AutoWatch - It's There When You're Not, "Are you a business or fleet owner who is interested in knowing when and how your vehicle's are being driven?," EASE Diagnostics, 2 pages.
	F26	AutoWatch - It's There When You're Not, Features, EASE Simulation, Inc., Revised January 2, 2006, copyright 1997-2006, 2 pages.
	F27	Di Genova, F. et al., "Incorporation of Wireless Communications into Vehicle On-Board Diagnostic (OBD) Systems," Sierra Research Inc., January 18, 2000, 132 pages.

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	SERIAL NO. 12/132,487	CASE NO. 12654-42
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT	FILING DATE June 3, 2008	GROUP ART UNIT 3695
(use several sheets if necessary)	APPLICANT(S): Raymond Scott Ling et al.	

EXAMINER INITIAL	OTHER ART – NON PATENT LITERATURE DOCUMENTS (Include name of author, title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published.	
	F28	Di Genova, F., " Incorporation of Radio Transponders into Vehicle On-Board Diagnostic Systems, Vol. 2 - Technical Proposal," Sierra Research, Inc., February 26, 1997, 154 pages.
	F29	Di Genova, F., " Incorporation of Radio Transponders into Vehicle On-Board Diagnostic Systems, Vol. 2 - Technical Proposal," Sierra Research, Inc., February 27, 1996, 215 pages.
	F30	Hayes, D., "Insurers, Tech Firm Team to Track Teen Drivers," NU Online News Service, April 9, printed from the internet at <http://www.propertyandcasualtyinsurancenews.com/cms/nupc/Templates/website/PrinterFriendly.aspx?{…> on April 10, 2007, 1 page.
	F31	Roberts, G., "Drive less during rush hour, get a lower insurance rate," Seattle Post-Intelligencer, March 28, 2007, printed from the internet at <http://seattlepi.nwsource.com/printer2/index.asp?ploc=t&refer=http://seatllepi.nwsource.com/transporati…> on March 30, 2007, 1 page.
	F32	SERF - System for Electronic Rate and Form Filing, printed from the internet at <http://statelogin.serff.com/serff/updateFilingView.do> on February 15, 2007, 4 pages.
	F33	Sierra Research Proposal, "Incorporation of Radio Transponders into Vehicular On-Board Diagnostic Systems, Vol. 1 – Administrative Documents," Sierra Research, Inc., February 27, 1996, 28 pages.
	F34	Sierra Research Proposal, "Incorporation of Radio Transponders into Vehicular On-Board Diagnostic Systems, Vol. 3 – Cost Proposal," Sierra Research, Inc., February 27, 1996, 18 pages.
	F35	Vehicle Monitoring Products - AutoWatch, EASE Diagnostics - The Leader in PC Automotive Diagnostic Software, EASE Simulation, Inc., Revised April 30, 2004, copyright 1997-2004, 2 pages.
	F36	U.S. Provisional Patent Application No. 60/077,650, which is the unpublished provisional parent application of U.S. Pat. No. 5,835,008 that issued, and thus became publically available, on November 10, 1998.

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

CERTIFICATE OF EFS FILING UNDER 37 CFR §1.8

I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office, Commissioner for Patents, via the EFS pursuant to 37 CFR §1.8 on the below date:

Date: November 29, 2011 Name: Joseph S. Hanasz, Reg. No. 54,720 Signature: /Joseph S. Hanasz/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Appln. of: Ling, et al.			
Appln. No.:	12/132,487	Examiner:	Robert R. Niquette
Filed:	June 3, 2008	Art Unit:	3695
For:	VEHICLE MONITORING SYSTEM	Conf. No.:	7812
Attorney Docket No.: 12654-42			

PETITION AND FEE FOR EXTENSION OF TIME (37 CFR § 1.136(a))

Mail Stop Amendment
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This is a petition for an extension of the time to respond to the Office Action dated June 29, 2011 for a period of 2 months.

Applicant is: ☐ small entity (per 37 CFR 1.27) ☒ other than small entity

	Extension Months	Other Than Small Entity	Small Entity
☐	One Month	$150.00	$75.00
☒	Two Months	$560.00	$280.00
☐	Three Months	$1,270.00	$635.00
☐	Four Months	$1,980.00	$990.00
☐	Five Months	$2,690.00	$1,345.00

Payment Method:

☐ Payment by credit card in the amount of $_____ to cover the fees listed above. Form PTO-2038 is enclosed for this purpose.

☒ The Commissioner is hereby authorized to charge $560.00 to cover the fees listed above to Deposit Account No. 23-1925.

☒ The Commissioner is hereby authorized to charge any deficiencies in fees or credit overpayment to Deposit Account No. 23-1925.

Respectfully submitted,

Dated: November 29, 2011

/Joseph S. Hanasz/
Joseph S. Hanasz, Reg. No. 54,720
Attorney for Applicants

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(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
13 May 2004 (13.05.2004)

PCT

(10) International Publication Number
WO 2004/040405 A2

(51) International Patent Classification[7]: G06F

(21) International Application Number:
PCT/US2003/032569

(22) International Filing Date: 15 October 2003 (15.10.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/281,330 25 October 2002 (25.10.2002) US

(71) Applicant: DAVIS INSTRUMENTS CORPORATION [US/US]; 3465 Diablo Avenue, Hayward, CA 94545 (US).

(72) Inventors: SKEEN, Michael; 1633 Pearl Street, Alameda, CA 94501 (US). WACKNOV, Joel; 3599 Lange Ranch Parkway, Thousand Oaks, CA 91362 (US). MOHR, Paul; 346 Winding Wood Court, Mountain View, CA 94040 (US).

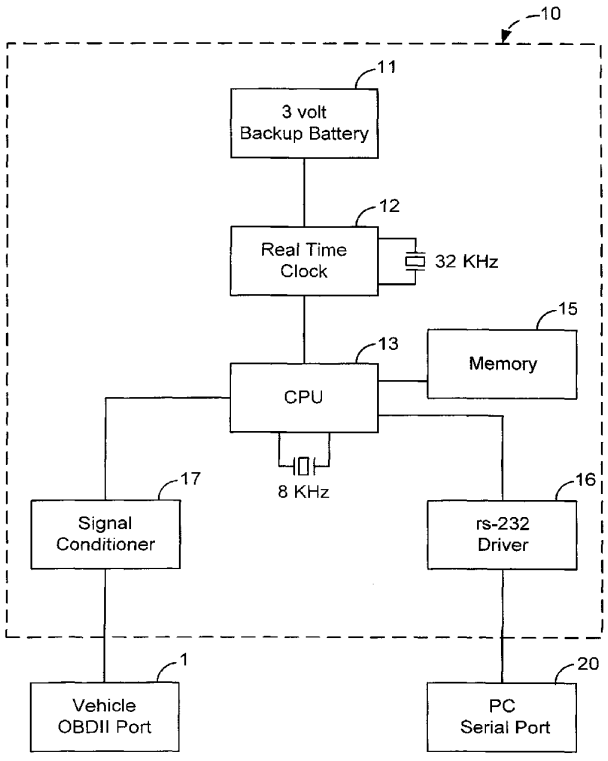
(74) Agents: HYNES, William, M. et al.; Townsend and Townsend and Crew LLP, Two Embarcacero Center, 8th Floor, San Francisco, CA 94111 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: MONITORING VEHICLE OPERATION THROUGH ONBOARD DIAGNOSTIC PORT



(57) Abstract: An onboard diagnostic memory module (10) is configured to plug into the OBD II port (1) and has a real-time clock (12) and power supply (11), a microprocessor (13) powered from a standard OBD II (1), microprocessor operating firmware, and an attached memory (7 MB) (15). In operation, the onboard diagnostic memory module (10) is preprogrammed with data collection parameters through microprocessor firmware by connection (20) to a computer, such as a PC, having programming software for the module firmware. Thereafter, the onboard diagnostic memory module (10) is moved into pin connection with the OBD II port (1) of a vehicle. Data is recorded on a "trip" basis, preferably using starting of the engine to define the beginning of the trip and stopping of the engine to define the end of the trip. Intelligent interrogation occurs by interpretive software from an interrogating computer to retrieve a trip-based and organized data set.

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Declarations under Rule 4.17:

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MODULE FOR MONITORING VEHICLE OPERATION THROUGH ONBOARD DIAGNOSTIC PORT

CROSS-REFERENCES TO RELATED APPLICATIONS

[0001] This application claims priority from US Patent Application Serial No. 10/281,330 filed October 25, 2002 by the named inventors herein and entitled Module for Monitoring Vehicle Operation through Onboard Diagnostic Port.

STATEMENT AS TO RIGHTS TO INVENTIONS MADE UNDER FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] NOT APPLICABLE

REFERENCE TO A "SEQUENCE LISTING," A TABLE, OR A COMPUTER PROGRAM LISTING APPENDIX SUBMITTED ON A COMPACT DISK.

[0003] NOT APPLICABLE

[0004] This invention relates to be on board recordation of operating data from a motor vehicle into a dedicated onboard diagnostic port memory module. More specifically, a "trip oriented" data recordation protocol is actuated during vehicle operation when the dedicated onboard diagnostic port memory module is connected to the onboard diagnostic port of the vehicle. The dedicated onboard diagnostic port memory module can be preprogrammed before placement to the vehicle as to certain critical data parameters to be monitored, placed in vehicle for monitoring over an extended period of time, and finally intelligently interrogated to discharge the recorded data. A detailed record of vehicle and driver operation of a vehicle can be generated from the recorded data. .

BACKGROUND OF THE INVENTION

[0005] Davis Instruments of Hayward, CA has pioneered the onboard recordation of data through a module known as "Drive Right." This device requires custom installation on a vehicle by a skilled mechanic, including a device for monitoring driveshaft rotation and the like. Recordation of data includes counters indicating vehicle operation within certain speed bands and acceleration and deceleration parameters. Purchase and operation of the device requires a motivated buyer willing to pay the cost of the unit as well as to accept the

inconvenience and additional expense of vehicle installation. This device finds its highest applicability with owners of "fleets" of automobiles.

[0006] So-called Onboard Diagnostic Ports are known and indeed required by The Environmental Protection Agency (EPA). The current device is known as Onboard Diagnostic Port II (hereinafter OBD II). The device is required to enable certain data to be sensed when the OBD II is monitored, and that data is specified by The Society of Automotive Engineers Vehicle Electrical Engineering Systems Diagnostic Standards Committee. The physical configuration of the OBD II output plug is specified (SAE J1962), containing a pin array which is to be electronically monitored. What is not mandated is the language of data transmission, and which pins are to emit the data. The OBD II mandated data to be sensed is contained in a voluminous catalog.

[0007] Surprisingly, there are four discrete "languages" (and corresponding pin arrays) now extant in which these OBD II ports now emit data. Those languages are SAE J1850 (GM, Ford), ISO, ISO 9141 (Chrysler and most foreign cars) and KWP 2000 (many 2001 and later foreign cars). For each of the so-called languages, the standard OBD II port has different pins emitting different information in different formats. As this international application is filed, a new language known as CAN (controller area network) protocol is specified in ISO 15765-4. Apparently, this will be the only protocol allowed after 2007.

[0008] The OBD II ports are designed to be connected with standard diagnostic equipment in modern automobile repair shops. It is known to have diagnostic equipment which upon being plugged into the OBD II port, determines the "language" of a particular port, properly addresses the pin array, and finally receives and interprets for the mechanic the specified data required of the OBD II port. It is known that manufacturers have proprietary codes for correspondingly proprietary operating parameters and parts of specific vehicles. Further, it is common to load into standard diagnostic equipment the labels specified by the Diagnostic Standards Committee. When the standard diagnostic equipment detects the data required of the OBD II port, the standard diagnostic equipment gives that particular data a display label which corresponds to the data mandated by the Diagnostic Standards Committee.

[0009] OBD II ports are, in some circumstances, monitored by having a computer (for example a laptop or notebook computer) attached to the ports while the vehicle is operating. Typically, a mechanic makes the computer connection, and thereafter drives or runs the vehicle to collect the desired data. Either during operation or once the data is collected, the computer displays the collected data in a programmed format.

[0010] As any driver of a modern vehicle can attest, such vehicles have warning systems including malfunction indicator lamps. In the usual case the malfunction indicator lamps are generally uninformative. For example, a typical display of such a malfunction indicator lamps is "Check Engine." Unfortunately, many of these lights are programmed so that they can be turned off only by a dealer. Often the lights are triggered by events that cannot be subsequently determined by the dealer when the light is reset. In short, these lights can be and often are a source of irritation. Even more important, sometimes the lights are activated by very routine automotive conditions, such as a dirty air filter. When such conditions occur, the driver must go to the dealer and pay a "diagnostic fee," have the dealer correct the conditions (for example replace the dirty air filter), and finally retrieve the vehicle from the dealer. A simplification in the operation of such malfunction indicator lamps would be ideal.

[0011] The above enumeration of the background and the related problems to the background is specific to the invention disclosed. The reader will recognize that frequently invention can include recognition of the problem(s) to be solved. The background set forth above was selected after the preferred embodiment of this invention was developed.

BRIEF SUMMARY OF THE INVENTION

[0012] An onboard diagnostic memory module is configured to plug into the OBD II port and has a real-time clock and power supply, a microprocessor powered from the OBD II port, microprocessor operating firmware, and an attached memory (currently 4 MB). In operation, the onboard diagnostic memory module is preprogrammed with data collection parameters through microprocessor firmware by connection to a computer, such as a PC, having programming software for the module firmware. Thereafter, the onboard diagnostic memory module is moved into pin connection with the OBD II port of a vehicle. Data is recorded on a "trip" basis, preferably using starting of the engine to define the beginning of the trip and stopping of the engine to define the end of the trip. EPA-mandated operating parameters are monitored, including vehicle speed. From the monitored vehicle speed, hard and extreme acceleration and deceleration parameters, as well as distance traveled, is determined and logged on a trip basis. When loaded with a typical data set from connection to a vehicle, which can be up to 300 hours of trip operation (about one month of average vehicle operation), the onboard diagnostic memory module is unplugged from the vehicle and plugged into the RS 232 port of a PC or other computer. Alternatively, the vehicle installed onboard diagnostic memory module can be intelligently interrogated in a permanent position of installation in a vehicle. The intelligent interrogation occurs by interpretive software from

an interrogating PC or palm sized personal digital assistant (PDA) to retrieve a trip-based and organized data set including hard and extreme acceleration and deceleration, velocity (in discrete bands), distance traveled, as well as the required EPA-mandated operating parameters. Telltale printouts can be generated highlighting operator habits (such as hard and extreme deceleration indicating that the driver is following too close), as well as the critical vehicle operating parameters. An extraordinary event log is maintained of densely recorded data based on (probable) accident parameters. Programming of the module can include resetting the malfunction indicator lamps of the vehicle. Installation of the module plugged to the OBD II port does not require vehicle modification.

[0013] The device is ideal for monitoring driver habits. The generated plots of vehicle speed bands with respect to time with overlying hard and extreme acceleration and deceleration parameters generates a unique telltale of driver habit including the "following too close." Further, the module is capable of operating on a driver-assigned basis. For example, the driver can be required to connect the module to any vehicle he operates with the module faithfully recording the cumulative operating parameters of the particular vehicle(s), despite language changes at the OBD II ports.

[0014] Further, the device can be used to greatly facilitate repair. For example, where a vehicle owner complains of intermittent vehicle behavior, such as a vehicle stalling due to a sticking valve, the module can be plugged into the vehicle for a specific period of time while the vehicle undergoes normal operation by the operator. At the end of a preselected period of time, the module can be returned to a diagnosing computer, such as a PC, the problem determined, and the repair made. In determining the problem, the memory of the operator can be used to pinpoint the particular trip and the probable time of the intermittent malfunction. The mechanic can be directed to the particular data set containing the vehicle operating parameters to diagnose and repair the intermittent vehicle behavior.

[0015] The repair simplifications are manifold. For example, trip data sets can be correlated with the memory of the driver. The driver can then supplement the recorded information with his memory to fully reproduce the exact conditions under which a malfunction occurred. Further, where simple malfunction conditions exist, such as dirty air filters, they may be immediately identified and repaired by facilities having less than full vehicle repair capability. A dirty air filter may be replaced at the local gas station. Where a malfunction indicator light such as "Check Engine" is triggered by the dirty air filter, the vehicle operator can reset the malfunction indicator light using the programmed module.

[0016] Even more complicated repair scenarios are simplified. For example, when the operating data is downloaded to a computer, such as a PC, , data coincident with a complicated malfunction can be isolated, and thereafter transmitted over the Internet to a diagnostic program specific to the vehicle involved. Thereafter, what is ordinarily a complicated diagnosis of vehicle malfunction can be rapidly reported to the mechanic or even to the vehicle operator. For example, for vehicles having custom parts with the OBD II port emitting custom codes, the codes can be sent over the Internet for diagnosis of the particular custom malfunction occurring.

[0017] Both the vehicle operator and the vehicle owner can benefit from the device. For example, where a company-owned vehicle is used by an operating employee required to submit expense reports, the combination of the trip-oriented data recordation (including time and trip mileage) with owner- and employee-generated information provides an uncontrovertable record of employee and vehicle operation. Further, where an accident occurs, the module can provide important corroboration to vehicle operating parameters which might otherwise be contested questions of fact related to the accident.

[0018] The computer, such as a PC, can be interactive with the onboard diagnostic memory module. For example, if the operating firmware in the onboard diagnostic memory module contains a bug, correction can occur. Upon connection to the Internet, the computer, such as a PC, can download a discrete program operable on a computer connected to the onboard diagnostic memory module. When the program is downloaded to the computer, it then runs to replace the firmware data set in the onboard diagnostic memory module to either remedy the malfunction or install and upgrade. Further, where enhanced operation of the onboard diagnostic port memory module is required for new vehicles, Internet firmware replacement can rapidly provide the required enhanced operation.

[0019] The organization of the collected data into "trip"-oriented data sets is particularly useful. In utilizing the system clock to time and date stamp the collected data with respect to a trip, the particularly useful organization of vehicle speed, acceleration and deceleration, and operating parameters can be collected. This organization, is extraordinarily useful, whether or not the module is removable from the vehicle. For example, provision may be made to download a permanently installed module using the infrared communication feature built into most hand held personal digital assistants (PDAs).

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] Fig. 1 is a picture of the driver console of an automobile showing an expanded view of the OBD II port, which port is typically under the dashboard near the steering column;

[0021] Fig. 2 is an illustration of the onboard diagnostic port being connected to a standard PC;

[0022] Fig. 3A and 3B illustrate respectively the onboard diagnostic port memory module being connected to the onboard diagnostic port of an automobile and the connected onboard diagnostic port memory module with an illustrated firmware operated indicator lamp displayed from the module;

[0023] Fig. 4 is a schematic of the onboard diagnostic port memory module indicating the backup battery, clock, the memory, signal conditioner for reading the vehicle onboard diagnostic port, and finally the RS 232 driver for connection to a PC serial port;

[0024] Figs. 5A - 5E are wiring schematics of the onboard diagnostic port memory module used with this invention with:

[0025] Fig. 5A illustrating the microcontroller section;

[0026] Fig. 5B illustrating the physical interface to the vehicle for the PWM andVPW protocols;

[0027] Fig. 5C illustrating the physical interface to the vehicle for the ISO mode;

[0028] Fig.5D illustrating the optional IrDA interface allowing the module to communicate with a personal digital assistant (PDA); and,

[0029] Fig.5E illustrating the actual connection to the vehicle;

[0030] Fig. 6 is a firmware logic diagram of the firmware within the onboard diagnostic port memory module for recordation of data during vehicle operation;

[0031] Fig. 7 is a software logic diagram between the onboard diagnostic port memory module and a connected PC for both furnishing the module with settings and downloading data for analysis; and,

[0032] Figs. 8A through 8H are representative plots and tables of the recorded data where:

[0033] Fig. 8A is a plot of speed against elapsed time indicating normal or conservative driving;

[0034] Fig. 8B is a plot of speed against elapsed time indicating abnormal, risk incurring driving with hard and extreme braking and accelerating;

[0035] Fig. 8C is a tabular presentation all of time, speed, engine speed, coolant temperature, engine load, and battery voltage useful in diagnosing engine operation;

[0036] Fig. 8D is a tabular presentation of elapsed time vs. speed from which acceleration and deceleration as well as distance traveled can be determined;

[0037] Fig. 8E is a graphical plot of coolant temperature vs. elapsed time for diagnosing engine temperature and thermostat operation;

[0038] Fig. 8F is a tabular plot of elapsed time, speed, engine speed, engine load, and coolant temperature;

[0039] Fig. 8G is a graphical plot of data triggering operation of an accident log wherein operating parameters are stored in a first in, last out stack for preserving data indicating a possible accident and,

[0040] Fig. 8H is a tabular presentation of the data triggering operation of the accident log.

DETAILED DESCRIPTION OF THE INVENTION

[0041] Referring to Fig. 1, a driver console C is shown. An onboard diagnostic port 1 is typically configured under the dashboard adjacent to the steering column.

[0042] Referring to Fig. 2, of an onboard diagnostic port memory module 10 has a 8 pin connector port 11 with a 9 pin connector 12 and power supply 13 for connection to the serial port of a PC 14. At PC 14 data can be conventionally printed, transmitted to the Internet, or otherwise processed. As will be understood, this invention also contemplates reading of data using IrDA ports.

[0043] Referring to Fig. 3A and 3B, the onboard diagnostic port memory module 10 of this invention is illustrated as being plugged into OBD II port 1. In the plugged-in disposition, a firmware operated indicator light 2 can be used for indicating any number of selected functions including the presence of communication between the module 10 and the OBD II port.

[0044] Referring to Fig. 4, a schematic of onboard diagnostic port memory module 10 is illustrated. Three-volt battery 11 operates real-time clock 12 for the purpose of time stamping data. The time signal is given to CPU 13. When the module is connected to the OBD II port, signal conditioner 17 recognizes the particular language emitted by the vehicle and configures module 10 to receive data in the SAE J1850 (GM, Ford), ISO, ISO 9141 (Chrysler and most foreign cars) ,KWP 2000 and CAN (many 2001 and later foreign cars) formats. Data is then channeled directly to memory 15. As of the filing of this international application, ISO 15765-4 known as CAN is an addition to the list of languages.

[0045] Continuing with Fig. 4, programming and downloading of onboard diagnostic port memory module 10 occurs through PC serial port 20 connection and RS 232 driver 16.

During programming, firmware within CPU 13 has parameters set for data recordation. During downloading, inquiry is made through the RS 232 driver for CPU 13 to download memory 15.

[0046] Having set forth in the general configuration of onboard diagnostic memory module 10, circuitry for use with this device can be understood with respect to Figs 5A through 5E.

[0047] There are five major sections to the design of the onboard diagnostic memory module 10 hardware. These are the Microcontroller Section shown in Fig.5A, the PWM/VPW Physical Layer shown in Fig.5B, the ISO Physical Layer shown in Fig.5C, the Optional IrDA Interface shown in Fig.5D, and the J1962 Interface shown in Fig.5E.

[0048] As of this writing, the onboard diagnostic memory module design contains two printed circuit boards (PCBs), which are stacked on top of each other and connected via a single connector. The "top" board contains sections in Figs 5A, B, C, and D above, and the "bottom" board contains section in Fig.5E.

[0049] At present, there are two variations of the onboard diagnostic memory module design: the "basic" version and the "advanced" version. The basic version runs on 5.0V and has a smaller serial flash memory while the advanced version runs on 3.3V and has a larger serial flash memory. Please refer to the schematics for each of the versions.

[0050] Bother versions (basic and advanced) support all four types of vehicle protocols using the same hardware: PWM, VPW, and the two variants of ISO. Each section will be described in the sections below.

[0051] The microcontroller section forms the heart of the design.

[0052] U8 is an ATMEL ATmega 16L microcontroller, with on board flash memory, SPI communications bus, and a UART. The microcontroller is supplied with an 8 MHz clock by crystal X2. The microcontroller is powered from 5.0V in the "basic" version of the product, and 3.3V in the "advanced" version.

[0053] U2 is an ATMEL serial flash memory chip where the trip log data is stored. The basic version of the onboard diagnostic memory module uses an AT45D011 1 mega-bit memory, while the advanced version uses an AT45DB041B 4 mega-bit part. The serial flash memory is powered from 5.0V in the basic version and 3.3V in the advanced version.

[0054] U5 is a Real Time Clock (RTC), which provides a non-volatile time source for the product. When no power is applied to the onboard diagnostic memory module, the RTC is powered from 3V battery BT1 (see J1962 Interface Section). When the onboard diagnostic memory module is powered, power to the RTC is supplied from either 5.0V (basic) or 3.3V

(advanced). The clock communicates to the microcontroller (U8) via a two-wire communications bus.

[0055] U4 is a RS232 level shifter to provide communications with a PC. U4 has an integral charge pump to generate the proper voltage levels and operates from either 5.0V (basic) or 3.3V (advanced). The reader will also understand that USB modules can be utilized for communication with computers, such as PCs.

[0056] JP1 is a connector that provides the link to the PC when the onboard diagnostic memory module 10 is not plugged into the vehicle. There are three types of signals provided on this connector: a) external power, b) RS232 to PC, and c) SPI bus for development use. Note that diode D2 isolates the external power source from the vehicle power source if they are connected at the same time. The pin assignments are as follows:

[0057]	PIN	SIGNAL
[0058]	1	External Power (7 to 15V)
[0059]	2	RS232 Output (TXD)
[0060]	3	RS232 Input (RXD)
[0061]	4	SPI (MOSI)
[0062]	5	SPI (MISO)
[0063]	6	SPI (SCK)
[0064]	7	Microcontroller Reset
[0065]	8	Ground

[0066] The PWM/VPW Physical Layer (see Fig.5B) provides the physical interface to the vehicle for the PWM and VPW protocols. Common parts are shared between the implementation of the two protocols in order to minimize cost and complexity.

[0067] U6A is an Operational Amplifier (Op Amp), which drives the J1850 Plus line for both the PWM and VPW modes. It is configured as a non-inverting amplifier with a gain of four (4) and the input on pin 3. Q1 is a NPN transistor and is used to provide a high current drive source.

[0068] The components R6, R8, C16, and R16 create a wave shaping network that drive the input of U6A (for the values of these components see the BOM for the basic and advanced models). The input of this network is the output of microcontroller U8 pin 14, PWM/VPW TXD. In the basic mode, this voltage is 5.0V when high and in the advanced model it is 3.3V when high. The output of the network (i.e. the input to U6 pin 3) is 2.0V in VPW mode and 1.25V in PWM mode, resulting in a signal on the J1850 Plus line of 8.0V in VPW mode and 5.0V in PWM mode.

[0069] Q2 is a NPN transistor that forms the drive for the J1850 Minus line. In PWM mode, Q2 is actively driven on and off in complement to Q1 thus creating a differential signal between the J1850 Plus and J1850 Minus lines. In VPW mode, Q2 is forced off, leaving the J1850 Minus line disconnected.

[0070] R7 and R14 form a bias network for PWM mode. If undriven or disconnected from the vehicle, the J1850 Plus line will be pulled low and the J1850 Minus line will be pulled high (5.0V).

[0071] R15, C17, and Q3 create a termination circuit for VPW mode. In VPW mode, Q3 is turned on thus enabling the termination. In PWM mode, Q3 is left off.

[0072] U6B and associated circuitry form a differential receiver for PWM mode. R18 provides approximately 10% hysteresis for noise immunity. Q4 provides a level shifter and inverter for the output signal that goes to the microcontroller U8 pin 16 (PWM/VPW RXD).

[0073] U6C and associated circuitry form a receiver for VPW mode. The reference value of 3.75V is used to compare against the VPW signal (which is nominally between 8V and 0V). R23 provides about 10% hysteresis for noise immunity, and Q5 creates a level shifter and inverter for the output signal, which is logically "OR'ed" with the signal from Q4 via an open collector configuration.

[0074] In PWM mode, Q5 is disabled (MODE3 forced low) and the signal to the microcontroller is derived from Q4. In VPW mode, Q4 is disabled (MODE2 forced low) and the signal to the microcontroller is derived from Q5.

[0075] The ISO Physical Layer (see Fig.5C) provides the physical interface to the vehicle for the ISO mode.

[0076] Transistor Q6 (NPN) forms the drive for the ISO L line and Q7 forms the drive for the ISO K line.

[0077] U6D and associated circuitry form a receiver for ISO mode. The reference value of approximately 6.0V is used to compare against the ISO K signal (which is nominally between 12V and 0V). R36 provides about 10% hysteresis for noise immunity, and Q8 creates a level shifter and inverter for the output signal, which is connected to the microcontroller U8 pin 24.

[0078] JP2 is a socket (row of plated through holes), which provides the connection to the bottom board. The pin assignments are as follows:

[0079]	PIN	SIGNAL
[0080]	1	5.0V Logic Supply
[0081]	2	12V (vehicle battery voltage)
[0082]	3	ISO K

[0083]	4	ISO L
[0084]	5	J1850 Plus
[0085]	6	J1850 Minus
[0086]	7	RTC backup battery BT1
[0087]	8	Ground
[0088]	9	Battery voltage analog input
[0089]	10	3.3V Logic Supply

[0090] The Optional IrDA Interface (see Fig.5D) allows the onboard diagnostic memory module to communicate with a Personal Digital Assistant (PDA) using the wireless IrDA industry standard.

[0091] U10 is an "ENDEC" (Encoder/Decoder) chip that converts the serial data from the microcontroller U8 into a pulse train suitable for IrDA communication. U10 is supplied with a clock source equal to 16 times the serial baud rate from U8 pin 16, XCLK.

[0092] U11 is an IrDA transceiver that interfaces directly to the IR transmitter (LED D5) and the IR receiver (PIN diode D6).

[0093] If populated, both U10 and U11 are supplied from 3.3V in the advanced model, and 5.0V in the basic model.

[0094] The J1962 Interface (see Fig.5E) is the actual connection to the vehicle and is located entirely on the bottom board.

[0095] P1 is the OBDII connector that interfaces with the vehicle:

[0096]	PIN	SIGNAL
[0097]	1	NC
[0098]	2	J1850 Plus
[0099]	3	NC
[0100]	4	NC
[0101]	5	Ground
[0102]	6	CAN high
[0103]	7	ISO K
[0104]	8	NC
[0105]	9	NC
[0106]	10	J1850 Minus
[0107]	11	NC
[0108]	12	NC
[0109]	13	NC

[0110]	14	CAN low
[0111]	15	ISO L
[0112]	16	Vehicle Power

[0113] Resistors R2 and R4 form a voltage divider network (18.0 Vin = 2.56 Vout) that is used to sense the vehicle battery voltage by the microcontroller U8.

[0114] Diode D3 is used to isolate the vehicle power source from the external power source (if connected).

[0115] D4 is a Transient Voltage Suppressor (TVS) that is used to prevent voltage surges on the vehicle battery bus from damaging the onboard diagnostic memory module.

[0116] BT1 is a primary (non rechargeable) 3V battery cell that is used as the backup power for the RTC U5.

[0117] U1 is a 5V regulator used to power the onboard diagnostic memory module circuitry.

[0118] C38 is a 0.1F "supercap" that is used to provide adequate hold up time when the onboard diagnostic memory module is unplugged from the vehicle. This is required so that the microcontroller has enough time to program the flash memory and perform an orderly shutdown before power is lost.

[0119] U13 is a 3.3V regulator that is only used in the advanced model. If the unit is a basic mode, R45 is installed instead of U13.

[0120] JP3 is the connector the top board that provides the following signals: (Note that this JP3 controller may also include pins for CAN high and low.)

[0121]	PIN	SIGNAL
[0122]	1	5.0V Logic Supply
[0123]	2	12V (vehicle battery voltage)
[0124]	3	ISO K
[0125]	4	ISO L
[0126]	5	J1850 Plus
[0127]	6	J1850 Minus
[0128]	7	RTC backup battery BT1
[0129]	8	Ground
[0130]	9	Battery voltage analog input
[0131]	10	3.3V Logic Supply

[0132] Referring to Fig. 6, a representative firmware logic diagram is illustrated. The reader will understand that the firmware can be upgraded from time to time by the expedient

of having PC 14 Internet connected, downloading a program having a new firmware configuration from a web site, running the program in the PC to replacing the firmware in the unit. This type of protocol is preferred as inconsistencies in direct transfer of such a program from the web could interfere with the operation of the onboard diagnostic memory module. As of the writing of this application, the outlined firmware is preferred.

[0133] First, the onboard diagnostic port memory module is connected to the OBD II port of the host vehicle and detection of the connection made at 311. Sequentially, each protocol GM [VPW], Ford [PWM], ISO, and Advanced ISO [KWP] is tried at 312 from the onboard diagnostic port memory module to the automobile through the OBD II port 1. When the language of the vehicle is identified, both the pin array and the parameters necessary for reading data passing through the pin array are selected. Data is capable of being read and retained.

[0134] Second, onboard diagnostic port memory module 10 must determine the starting of the vehicle. In the protocol used here, where the engine has RPMs above 400, it is presumed that the vehicle is operating. Unfortunately, with at least some vehicles where constant interrogation is made for determining engine revolutions, battery failure can occur. Such battery failure results from the automobile computer being awakened, interrogating the engine for revolutions, and thereafter returning to the standby state. To avoid this effect, vehicle voltage is monitored. Where a starter motor is utilized, vehicle voltage change occurs. Only when vehicle voltage has changed by a predetermined amount, for example down two volts, is interrogation made of engine RPMs. The RPMs are chosen to be greater than those imposed by the starter motor but less than idling speed. Thus, vehicle voltage is detected at 314 and where voltage detection occurs, RPMs are measured at 315. This causes the storage of trip start data at 316.

[0135] Third, there is always the possibility of onboard diagnostic module 10 being disconnected from OBD II port 1, say where a driver chooses to have an unmonitored trip. In this case, tampered time 317 is recorded responsive to the drop in voltage caused by the disconnection. However, since engine revolutions will not be monitored in this instance, the data recorded will indicate onboard diagnostic module 10 disconnection from OBD II port 1.

[0136] Referring to Fig. 6, monitoring of vehicle speed occurs on a once-a-second basis at speed monitors 320. Thereafter, using previously recorded speeds, acceleration and deceleration is computed at 322. This data is temporarily stored at 324. Normal speed is recorded at 5-second intervals. Therefore, counter 325 asks each fifth speed count to be

stored. Further, speed counts one through four are discarded during normal module operation at 326.

[0137] Returning to the calculation of acceleration and deceleration at 322, a probable accident log can be maintained. Specifically, and where deceleration has a threshold greater than certain preset limits, and the vehicle speed goes to zero, a log of these unusual events can be maintained. All vehicle events occurring within the previous 20 seconds are remembered in a stack. Data stored in this stack can be subsequently accessed.

[0138] It remains for the end of trip to be detected. Specifically, and at the end of each 5-second interval, engine speed is monitored at 327 to determine whether RPMs are above a certain preset limit, here shown as 400 RPMs. This speed is faster than that speed generated by the starter motor but less than the normal speed of the engine when it is idling. If engine speed in the preset amount (over 400 RPMs) is detected, the recordation cycle continues. If the speed is not detected, it is presumed that the trip is ended and the end-of-trip data is stored at 328.

[0139] Referring to Fig. 7, the software logic diagram is illustrated. The onboard diagnostic port memory module is schematically illustrated having data 410 and settings 411. A communication port 420 is shown communicating between onboard diagnostic module 10 and personal computer 14. Upon the initial connection to the PC, serial port identification 422 is determined. Thereafter, three discrete functions can be actuated with in onboard diagnostic module 10.

[0140] First, the onboard diagnostic module memory can be cleared at 425.

[0141] Second, the onboard diagnostic module memory can be downloaded at 426. This can include data viewing 427 of the trip log 428, activity log 429, the accident log 430, and the vehicle trouble log 431. Provision is made to store the accumulated data at 432 and to recover previously stored data at 433. Additionally, provision is made to label the onboard diagnostic module unit number, unit name, and particular vehicle utilized. For example, onboard diagnostic memory module 10 could be assigned to a particular driver, and that driver could have a choice of vehicles to operate. Each time the driver plugged onboard diagnostic memory module 10 into a vehicle to be operated, vehicle identity would be recorded at 440 along with the driver's identification.

[0142] Third, the onboard diagnostic port memory module can be configured at 450. Such configuration can include speed bands 451, deceleration or brake bands 452, acceleration bands 453, operational parameters 454, and finally the required time stamping clock setting at 455.

[0143] Referring to Fig. 8A, a plot of a car trip is presented. Elapsed time of the trip is plotted against vehicle speed. By way of example, deceleration or brake bands 452 and acceleration bands 453 can be chosen to be 0.28 gravity fields for hard braking and 0.48 gravity fields for extreme braking. Speed bands can likewise be selected. A typical selection could include 75 miles per hour and above [band I], 60 to 75 miles per hour [band II], 45 to 60 miles per hour [band III], and 0 to 45 miles per hour [band IV]. As can be seen in Figs. 8A and 8B, such information can be graphically presented.

[0144] The particular utility of superimposing hard and extreme braking on the display data is apparent with respect to Figs. 8B. Specifically, the data represented is commonly associated with the driving habit known as "following too close." As can be seen in the plot, numerous braking incidents are recorded in the hard and extreme categories. Additionally, the drive is indicating abuse of the vehicle with rapid accelerations.

[0145] Referring to Fig 8C, a data plot is shown listing elapsed time relative to speed, engine speed, cooling temperature, engine load, and battery voltage.

[0146] Referring to Fig 8D, a plot of elapsed time vs. speed in miles per hour is illustrated. The reader will understand that from such data, both acceleration and deceleration as well as the distance traveled can be determined. In actual practice, speed traveled is frequently recorded. From the frequent recordings, accelerations and decelerations as well as distance traveled are computed, the former by differentiation and the latter by integration. Once this data is accumulated, intermediate velocity points can be discarded with the remaining velocity points being maintained in a table such as fat shown in Fig 8D.

[0147] Referring to Fig 8E, a plot of cooling temperature vs. time for a trip is illustrated. In this plot, possible malfunction of an automobile thermostat is illustrated.

[0148] Referring to Fig 8F, a tabular plot of elapsed time, speed, engine speed, engine load, and cooling temperature is shown. It should be understood that through conventional manipulation of PC software, arrays of data can be presented in any desired format.

[0149] Referring to Figs 8G and 8H, and then triggering an "accident log" is respectively graphically and tabularly illustrated. It can be immediately seen that the event here is triggered by rapid deceleration. When such a profile is detected by the disclosed onboard diagnostic port memory module, all operating data is preserved in a dense format. Further, the operating data in its dense format is transferred to a first in, last out data stack having capacity in the usual case for between 30 and 32 such events. In this manner, the onboard diagnostic memory module can maintain for a substantial period of time operating vehicle profiles for accident situations. Thus, with the onboard diagnostic memory module of this

invention, vehicle operating parameters that would be questions of controverted fact in the normal accident situations become unquestioned recorded data.

[0150] It is to be understood that the parameters for triggering an accident log recordation can be altered. Further, in this specification we have used a PC as the preferred embodiment. It will be understood that virtually any computer, personal digital assistant (PDA) or other computing device can be programmed for the intelligent interrogation of the module here used. Various new "languages" utilized by the OBDII ports may arise. For example, as of the filing of this PCT application, a new language known as CAN is being introduced. We intend to cover such languages within the scope and content of this patent application. Further, in the preferred embodiment herein, we have illustrated a clock and clock power supply being furnished with the module. The reader will realize that it is sufficient if data recorded by the module is time stamped. For example, the module could use a clock integral to the vehicle for such time stamping. Additionally, we illustrate wireless connection of the module to a computer utilizing a preferred IR connection. It will be understood that other forms of wireless connection such a Blue Tooth can also be utilized.

WHAT IS CLAIMED IS:

1. An onboard diagnostic memory module for an onboard diagnostic port of a vehicle comprising:

a connection to an onboard diagnostic port output of a vehicle;

a memory for receiving and emitting recorded data from the connection to the onboard diagnostic port output of the vehicle;

apparatus for time stamping the recorded data in the memory for receiving and emitting recorded data;

a microprocessor responsive to operational firmware for manipulating data to and from the memory through the connection to the onboard diagnostic port output of the vehicle;

memory operationally connected to the microprocessor for receiving the operational firmware;

the operational firmware including;

data receiving and recording parameters for the memory during the connection to the onboard diagnostic port output of the vehicle; and,

discharge parameters for discharging the recorded data responsive to intelligent interrogation of a computer having a connection to the onboard diagnostic memory module.

2. The onboard diagnostic memory module of claim 1 in wherein the connection to the onboard diagnostic port output of the vehicle includes:

a plugged connection to the onboard diagnostic port of the vehicle.

3. The onboard diagnostic memory module of claim 1 in wherein the connection to the onboard diagnostic port output of the vehicle includes:

a wired connection to the onboard diagnostic port of the vehicle.

4. The onboard diagnostic memory module of claim 1 and wherein:

the operational firmware further includes;

resetting parameters for a malfunction indicator light.

5. The onboard diagnostic memory module of claim 1 and wherein:

the operational firmware further includes;

interrogating language software for determining the language of the onboard diagnostic port.

6. The onboard diagnostic memory module of claim 5 and wherein:
the operational firmware further includes;
interrogating language software for determining the language of the onboard diagnostic port selected from the group consisting of GM, Ford, ISO, and KWP 2000

7.. The process of recording and analyzing data from the combination of an onboard diagnostic memory module, a vehicle having an onboard diagnostic port, and a computer having intelligent programming for the onboard diagnostic memory module comprising:
providing a vehicle having an onboard diagnostic port for emitting data;
providing an onboard diagnostic memory module including:
a connection to an onboard diagnostic port output of a vehicle;
a memory for receiving and emitting recorded data from the connection to the onboard diagnostic port output of the vehicle;
apparatus for time correlation to the recorded data in the memory for receiving and emitting recorded data;
a microprocessor responsive to operational firmware for manipulating data to and from the memory through the connection to the onboard diagnostic port output of the vehicle;
memory operationally connected to the microprocessor for receiving the operational firmware;
the operational firmware including;
data receiving and recording parameters for the memory during the connection to the onboard diagnostic port output of the vehicle; and,
discharge parameters for discharging the recorded data responsive to intelligent interrogation of a computer having a connection to the onboard diagnostic memory module;
providing a computer having;
interrogation parameters for the onboard diagnostic memory module; and,

emitting data receiving and recording parameters to the onboard diagnostic port memory module;

connecting the onboard diagnostic memory module to the computer to receive the data receiving and recording parameters;

sending from the computer to the onboard diagnostic memory module the data receiving and recording parameters;

connecting the onboard diagnostic memory module to the vehicle at the onboard diagnostic port;

recording data during operation of the vehicle at the onboard diagnostic port;

connecting the onboard diagnostic memory module to the computer; and,

interrogating the onboard diagnostic memory module recover the recorded data.

8. The process of recording data from the onboard diagnostic port of an operating vehicle according to claim 7 and wherein:

the connecting the onboard diagnostic memory module to the computer includes using a wireless connection.

9. An onboard diagnostic memory module for an onboard diagnostic port of a vehicle comprising:

a connection to an onboard diagnostic port output of a vehicle;

a memory for receiving and emitting recorded data from the connection to the onboard diagnostic port output of the vehicle;

apparatus for time stamping the recorded data in the memory for receiving and emitting recorded data;

a microprocessor responsive to operational firmware for manipulating data to and from the memory through the connection to the onboard diagnostic port output of the vehicle;

memory operationally connected to the microprocessor for receiving the operational firmware;

the operational firmware including;

data receiving and recording parameters for the memory during the connection to the onboard diagnostic port output of the vehicle; and,

discharge parameters for discharging the recorded data responsive to intelligent interrogation of a computer having a connection to the onboard diagnostic memory module

apparatus for activating the data receiving and recording parameters upon sensing the electric voltage of the automobile electrical system at a depressed voltage.

10. The onboard diagnostic memory module for an onboard diagnostic port of a vehicle according to claim 9 and wherein the depressed voltage of the car electrical system is at least two volts.

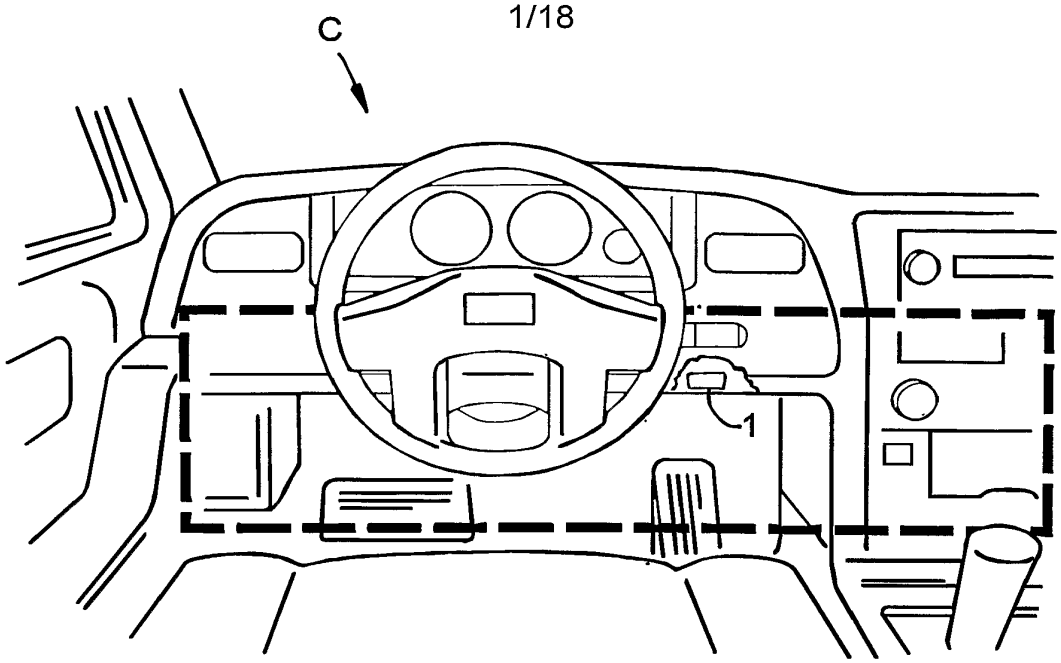

FIG. 1.

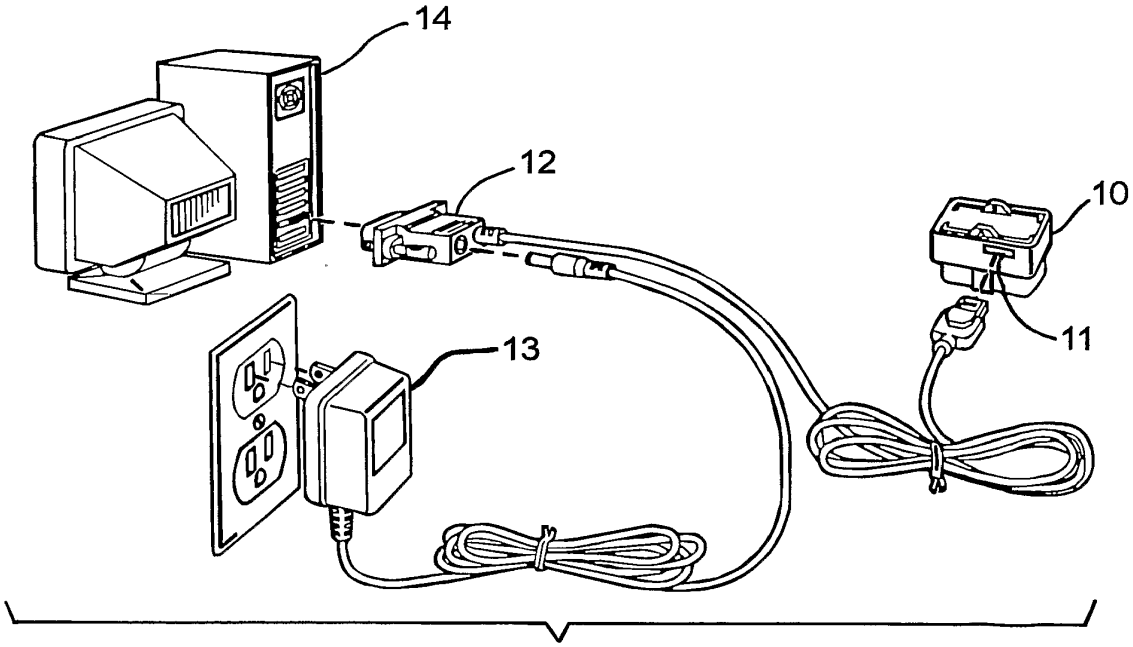

FIG. 2.

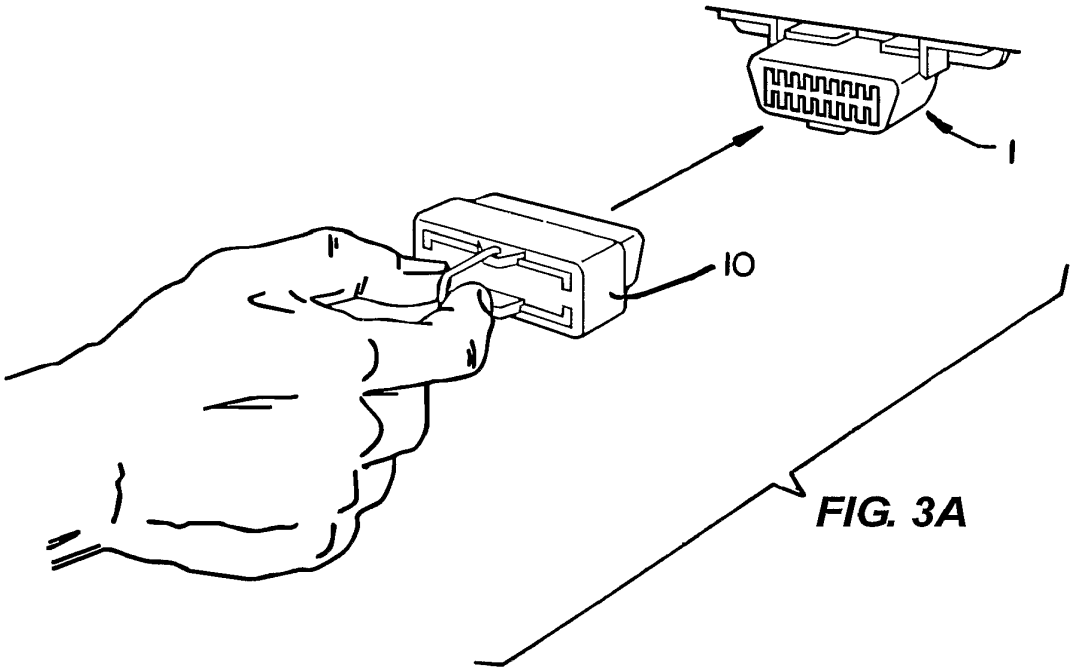

FIG. 3A

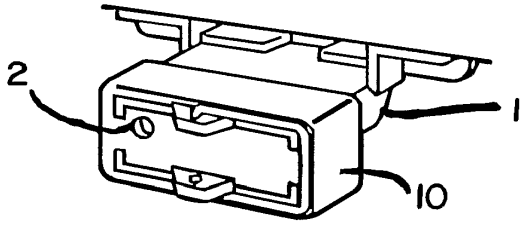

FIG. 3B

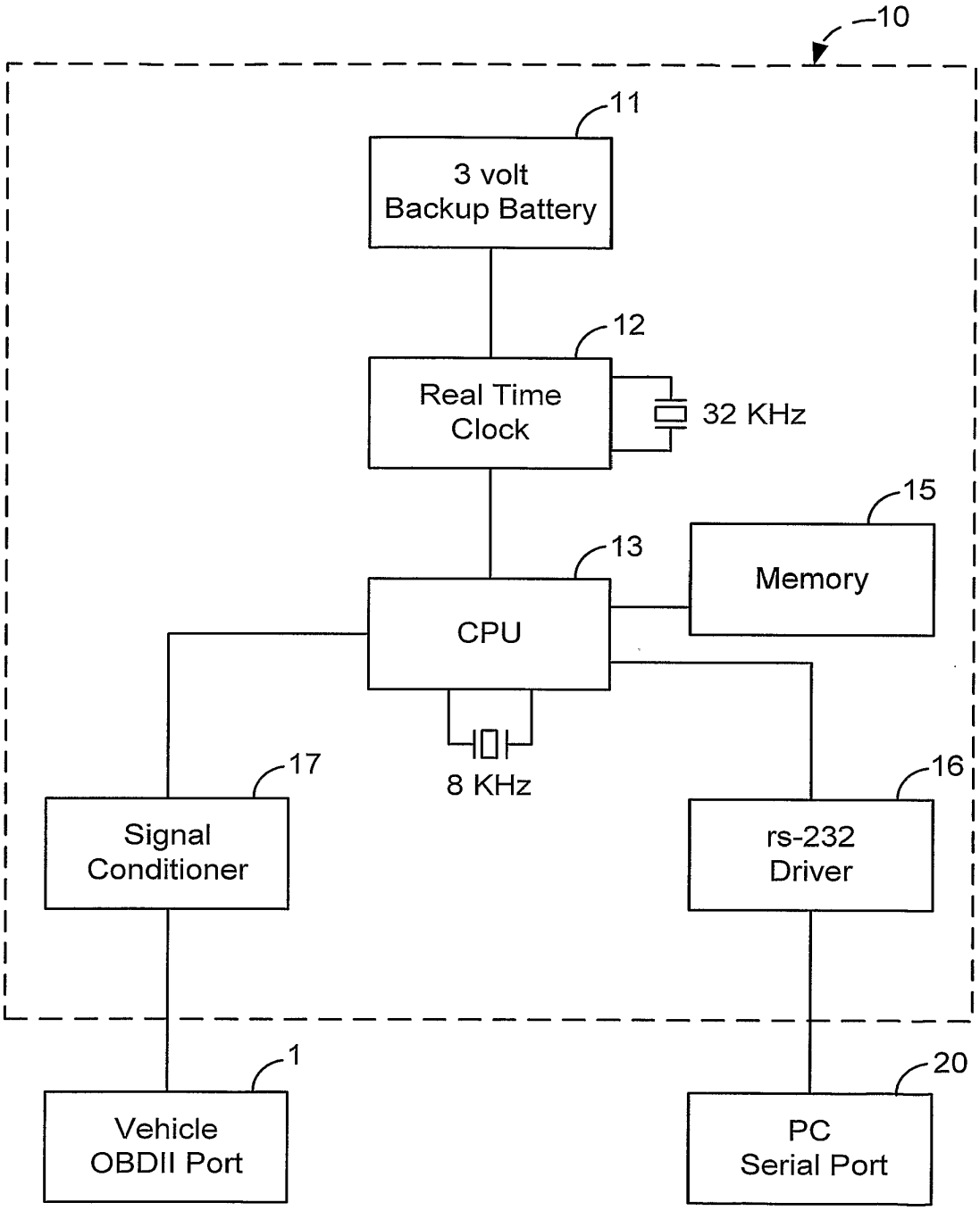
10
11
3 volt
Backup Battery
12
Real Time
Clock
32 KHz
15
Memory
13
CPU
8 KHz
17
Signal
Conditioner
16
rs-232
Driver
1
Vehicle
OBDII Port
20
PC
Serial Port

FIG. 4

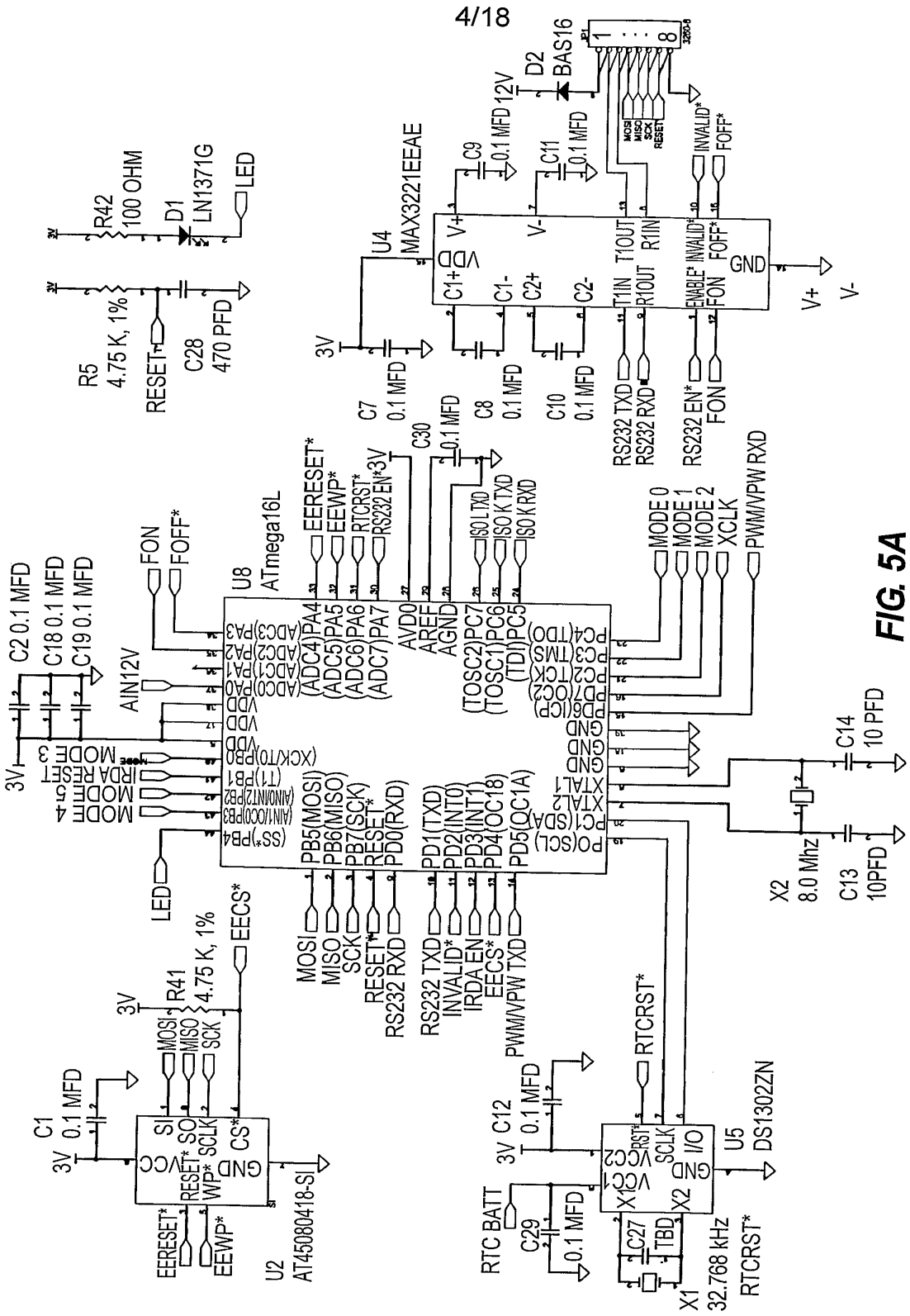
U8
ATmega16L
U4
MAX3221EEAE
U2
AT45080418-SI
U5
DS1302ZN
D1
LN1371G
D2
BAS16
R42
100 OHM
R5
4.75 K, 1%
R41
4.75 K, 1%
C28
470 PFD
C1
0.1 MFD
C2 0.1 MFD
C18 0.1 MFD
C19 0.1 MFD
C7
0.1 MFD
C8
0.1 MFD
C9
0.1 MFD
C10
0.1 MFD
C11
0.1 MFD
C12
0.1 MFD
C29
0.1 MFD
C30
0.1 MFD
C13
10PFD
C14
10 PFD
C27
TBD
X1
32.768 kHz
X2
8.0 Mhz
RESET
LED
AIN12V
FON
FOFF*
EERESET*
EEWP*
RTCRST*
RS232 EN*
ISO LTXD
ISO KTXD
ISO KRXD
MODE 0
MODE 1
MODE 2
XCLK
PWM/VPW RXD
MOSI
MISO
SCK
RESET*
RS232 TXD
INVALID*
IRDA EN
EECS*
PWM/VPW TXD
RS232 RXD
RS232 TXD
RS232 RXD
RS232 EN*
FON
INVALID*
FOFF*
RTC BATT
RTCRST*
V+
V-
3V
12V

FIG. 5A

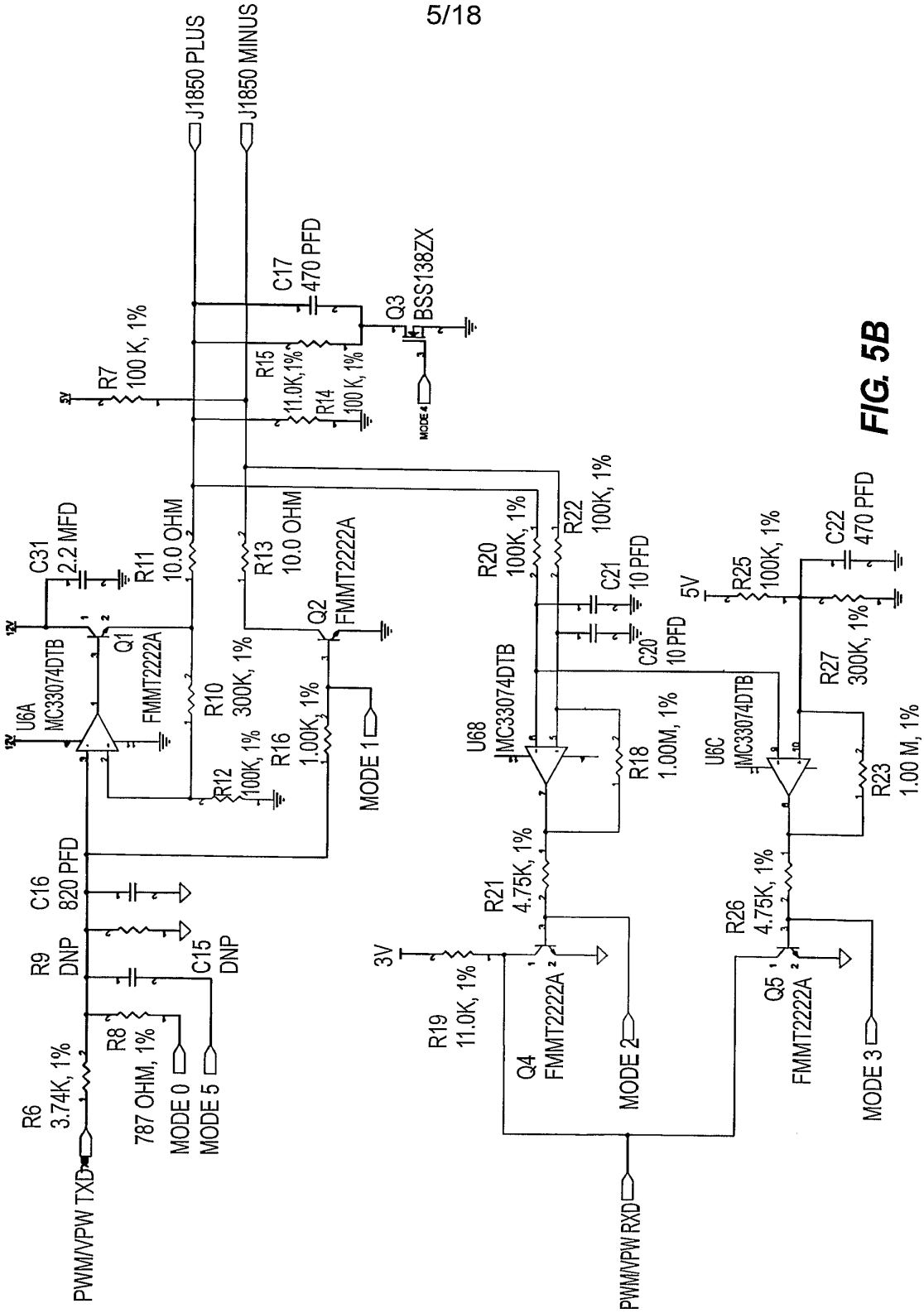
J1850 PLUS
J1850 MINUS
C17
470 PFD
Q3
BSS138ZX
R7
100 K, 1%
R15
11.0K,1%
R14
100 K, 1%
C31
2.2 MFD
R11
10.0 OHM
R13
10.0 OHM
Q2
FMMT2222A
U6A
MC33074DTB
Q1
FMMT2222A
R10
300K, 1%
R12
100K, 1%
R16
1.00K, 1%
MODE 1
R20
100K, 1%
R22
100K, 1%
C21
10 PFD
C20
10 PFD
U6B
MC33074DTB
R18
1.00M, 1%
R25
100K, 1%
C22
470 PFD
U6C
MC33074DTB
R27
300K, 1%
R23
1.00 M, 1%
C16
820 PFD
R9
DNP
C15
DNP
R6
3.74K, 1%
R8
787 OHM, 1%
MODE 0
MODE 5
PWM/VPW TXD
3V
R19
11.0K, 1%
R21
4.75K, 1%
Q4
FMMT2222A
MODE 2
R26
4.75K, 1%
Q5
FMMT2222A
MODE 3
PWM/VPW RXD

FIG. 5B

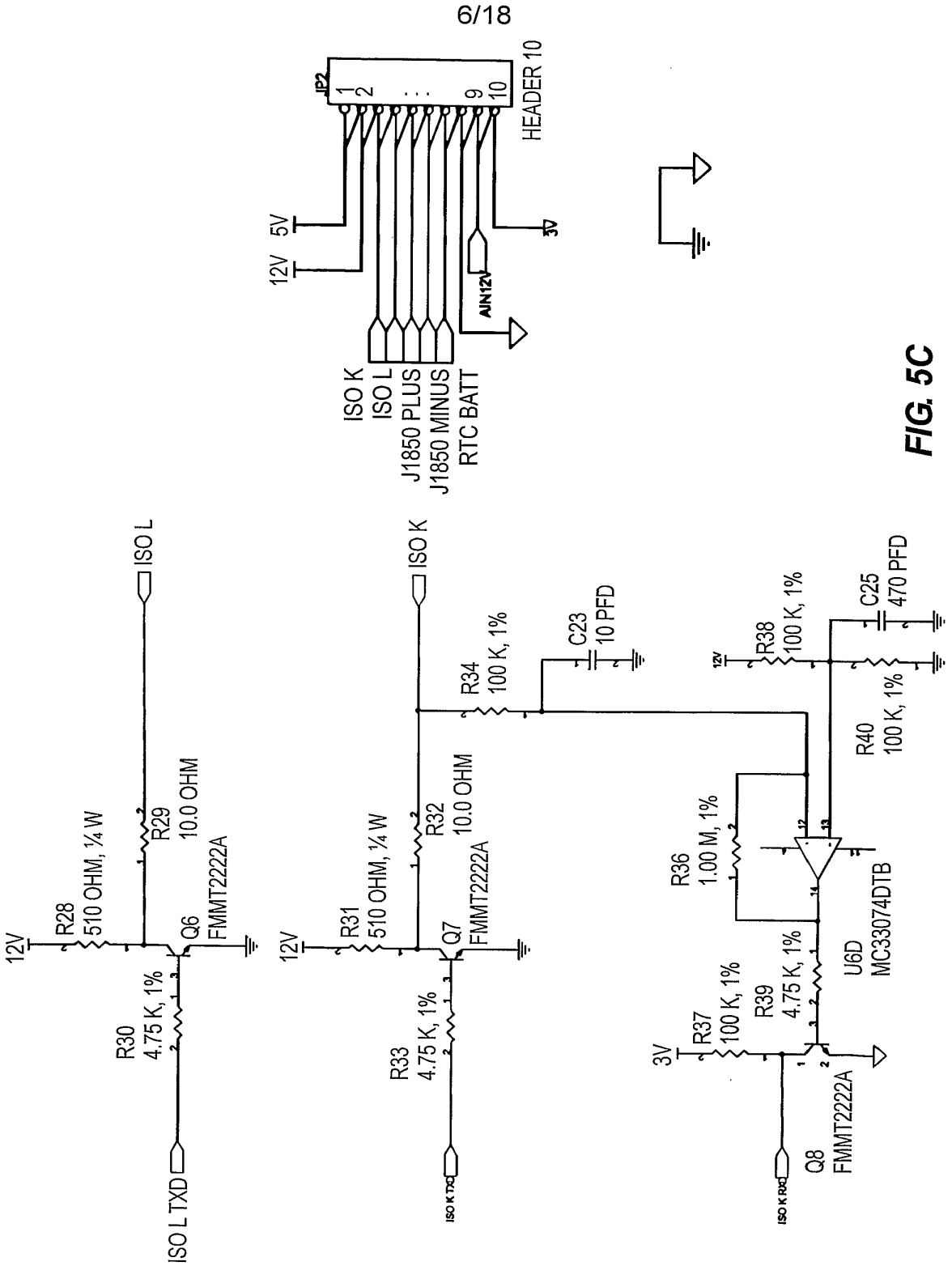
JP2
HEADER 10
ISO K
ISO L
J1850 PLUS
J1850 MINUS
RTC BATT
12V
5V
3V
AIN12V
R28
510 OHM, ¼ W
R29
10.0 OHM
Q6
FMMT2222A
R30
4.75 K, 1%
ISO L TXD
R31
510 OHM, ¼ W
R32
10.0 OHM
Q7
FMMT2222A
R33
4.75 K, 1%
R34
100 K, 1%
C23
10 PFD
R36
1.00 M, 1%
R37
100 K, 1%
R38
100 K, 1%
C25
470 PFD
R39
4.75 K, 1%
R40
100 K, 1%
U6D
MC33074DTB
Q8
FMMT2222A

FIG. 5C

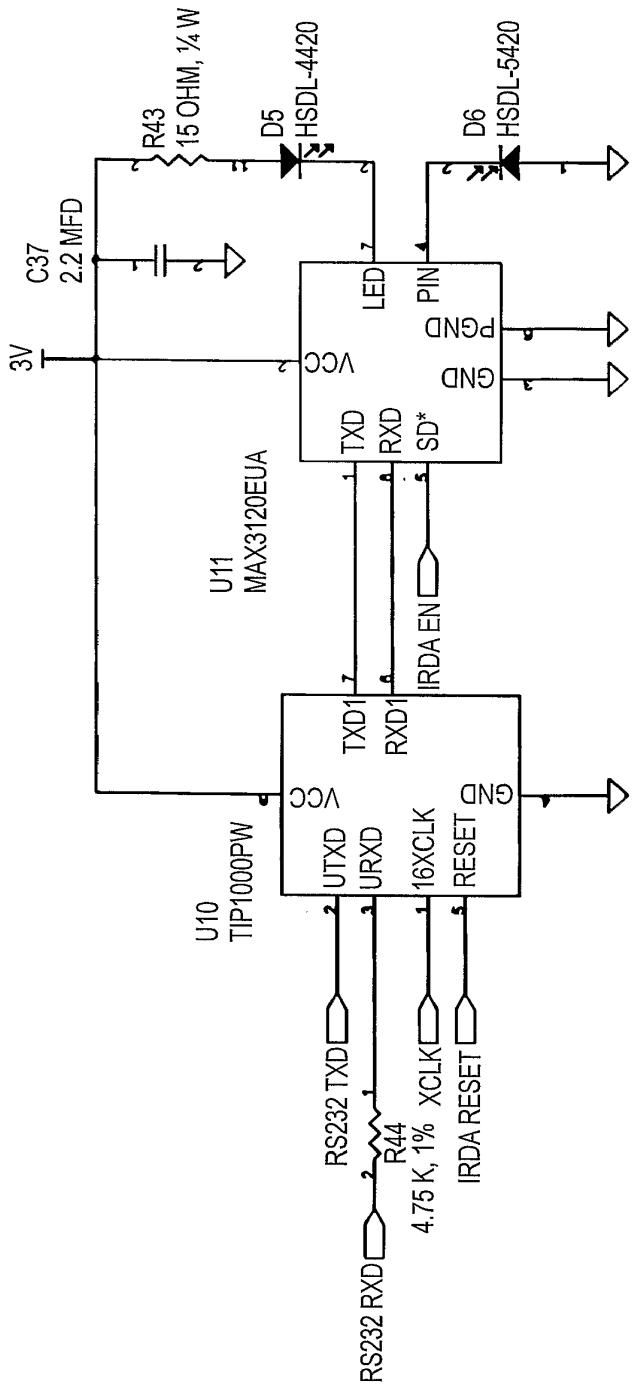
R43
15 OHM, ¼ W
D5
HSDL-4420
D6
HSDL-5420
C37
2.2 MFD
3V
U11
MAX3120EUA
VCC
LED
PIN
PGND
GND
TXD
RXD
SD*
IRDA EN
U10
TIP1000PW
TXD1
RXD1
VCC
GND
UTXD
URXD
16XCLK
RESET
RS232 TXD
R44
4.75 K, 1%
XCLK
IRDA RESET
RS232 RXD

FIG. 5D

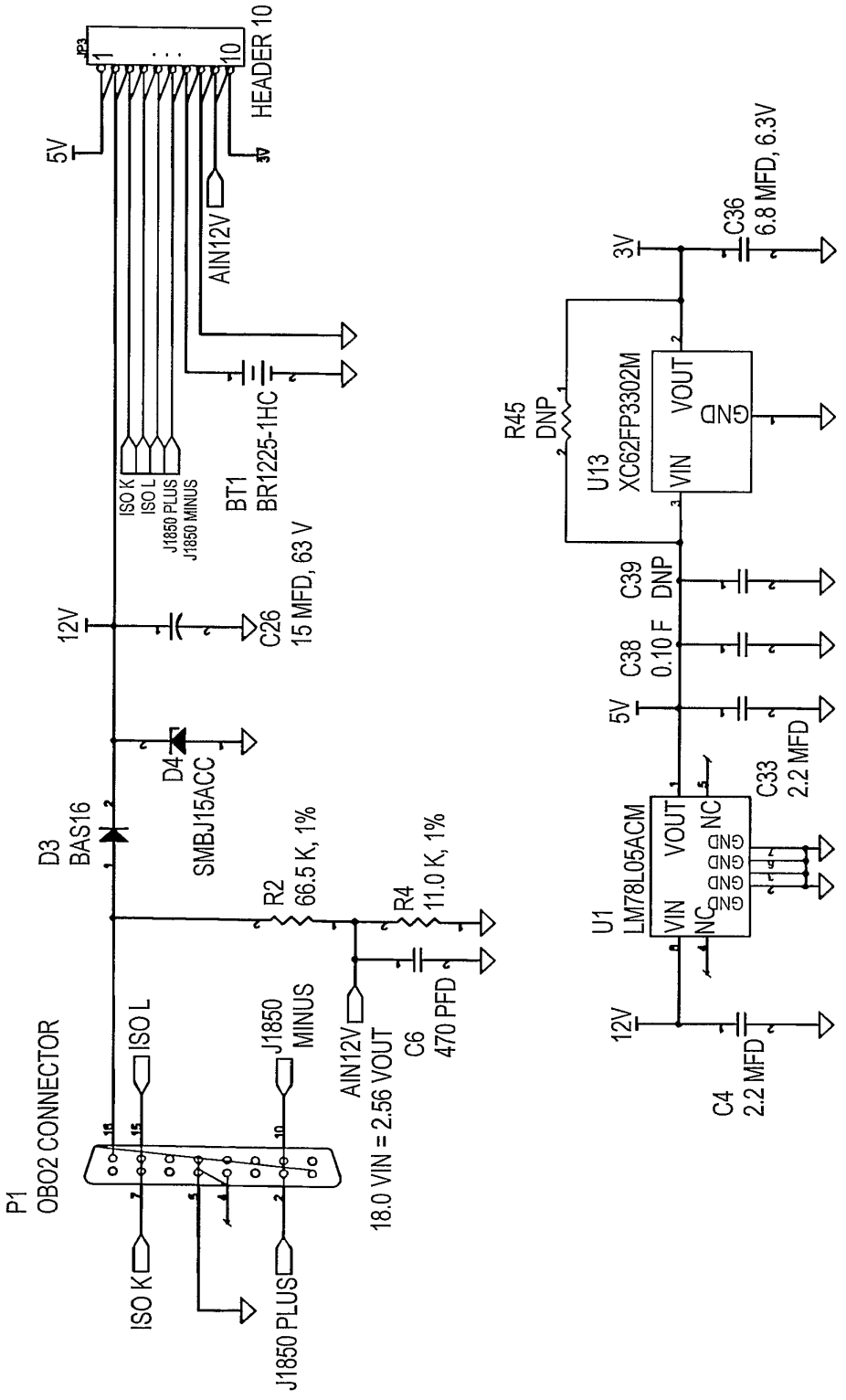
P1
OBO2 CONNECTOR
ISO K
ISO L
J1850 PLUS
J1850 MINUS
D3
BAS16
D4
SMBJ15ACC
12V
C26
15 MFD, 63 V
BT1
BR1225-1HC
5V
AIN12V
HEADER 10
R2
66.5 K, 1%
R4
11.0 K, 1%
AIN12V
18.0 VIN = 2.56 VOUT
C6
470 PFD
R45
DNP
U13
XC62FP3302M
VIN
VOUT
GND
3V
C36
6.8 MFD, 6.3V
C39
DNP
C38
0.10 F
U1
LM78L05ACM
VIN
VOUT
NC
GND
C33
2.2 MFD
C4
2.2 MFD

FIG. 5E

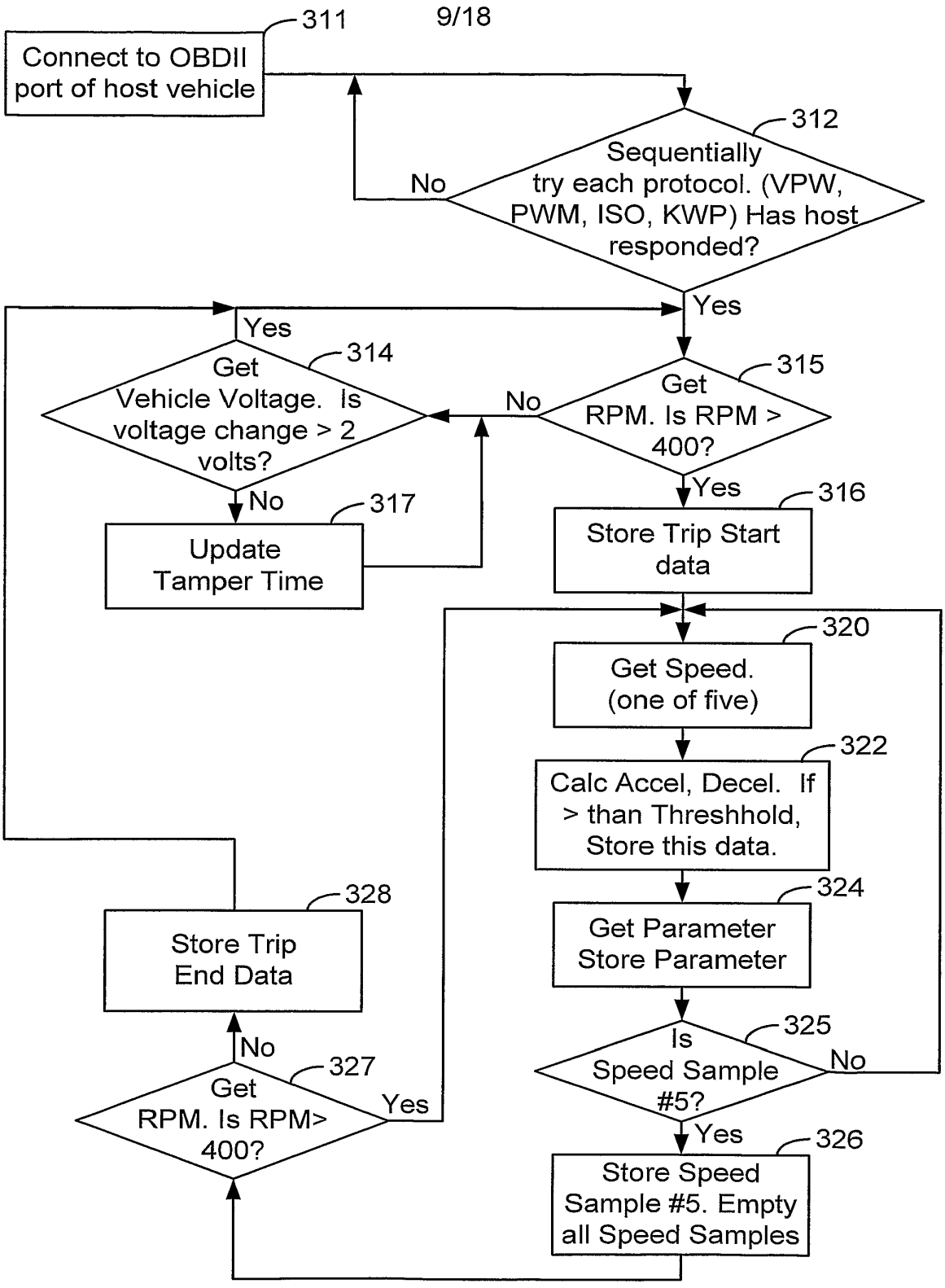
311
Connect to OBDII port of host vehicle
312
Sequentially try each protocol. (VPW, PWM, ISO, KWP) Has host responded?
No
Yes
314
Get Vehicle Voltage. Is voltage change > 2 volts?
315
Get RPM. Is RPM > 400?
No
Yes
No
317
Update Tamper Time
Yes
316
Store Trip Start data
320
Get Speed. (one of five)
322
Calc Accel, Decel. If > than Threshhold, Store this data.
324
Get Parameter Store Parameter
325
Is Speed Sample #5?
No
Yes
326
Store Speed Sample #5. Empty all Speed Samples
328
Store Trip End Data
No
327
Get RPM. Is RPM> 400?
Yes

FIG. 6

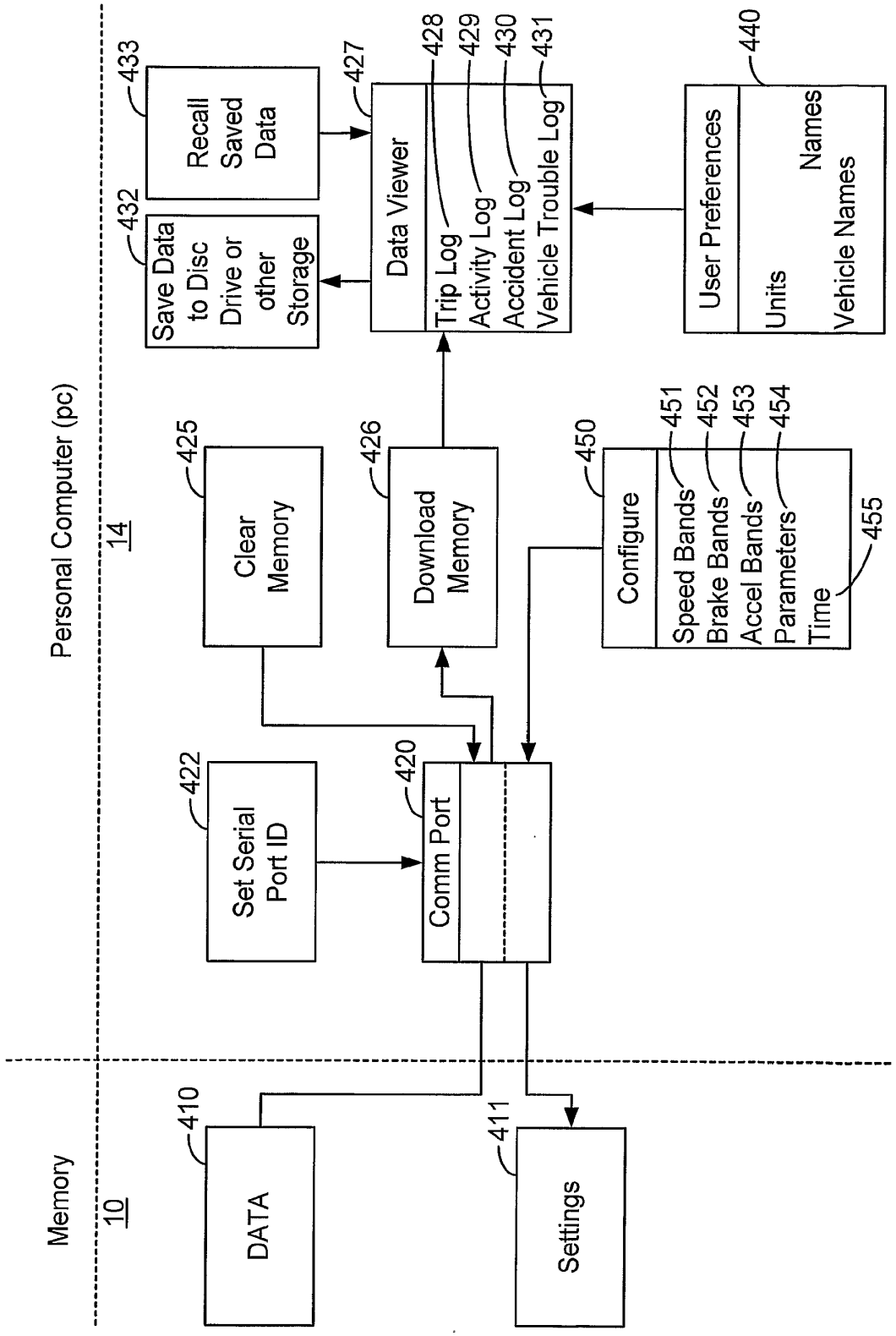
Personal Computer (pc)
14
Memory
10
DATA
410
Settings
411
Set Serial Port ID
422
Comm Port
420
Clear Memory
425
Download Memory
426
Configure
450
Speed Bands
451
Brake Bands
452
Accel Bands
453
Parameters
454
Time
455
Data Viewer
427
Trip Log
428
Activity Log
429
Accident Log
430
Vehicle Trouble Log
431
Recall Saved Data
433
Save Data to Disc Drive or other Storage
432
User Preferences
440
Units
Names
Vehicle Names

FIG. 7

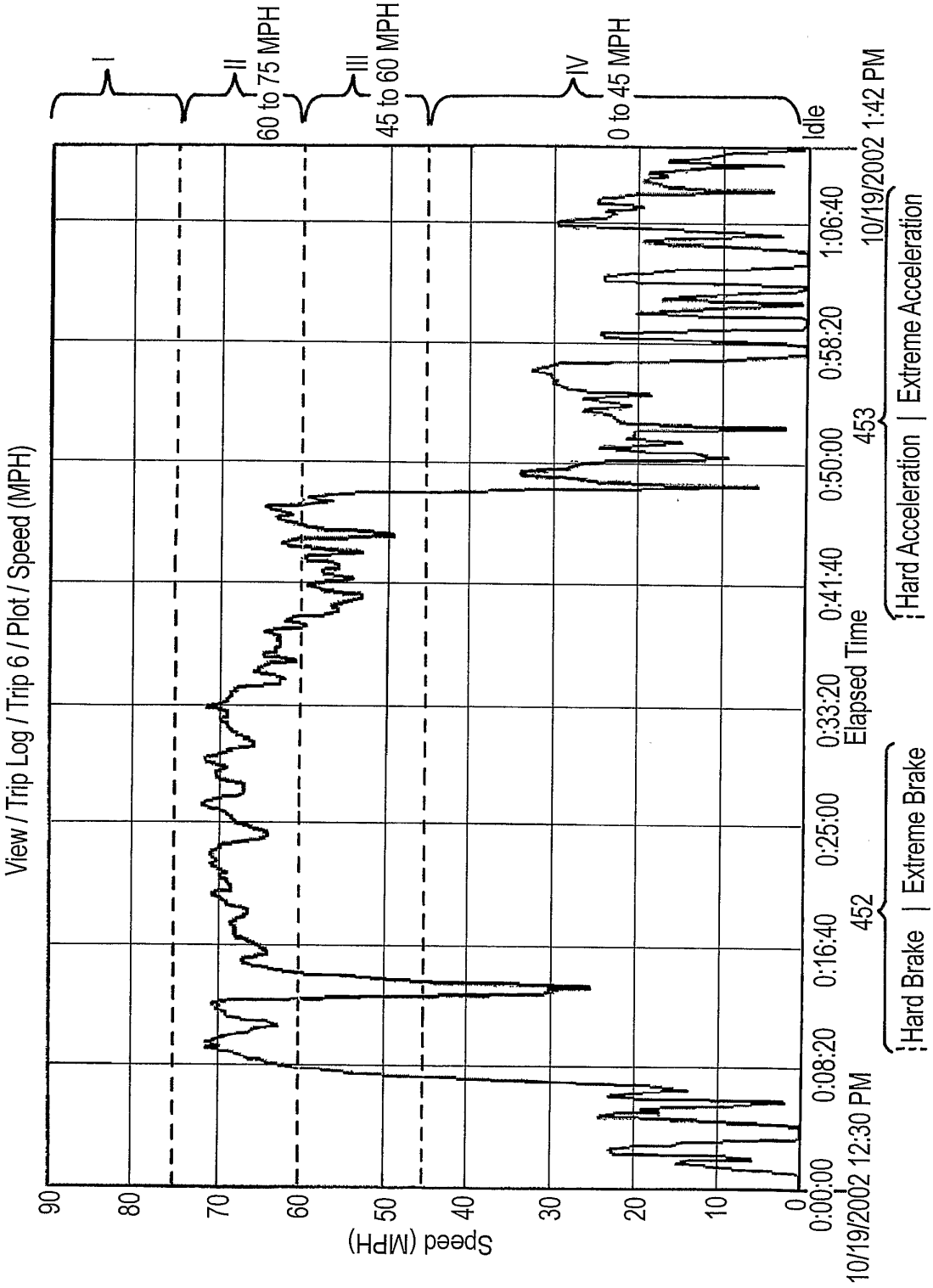
View / Trip Log / Trip 6 / Plot / Speed (MPH)
I
II
60 to 75 MPH
III
45 to 60 MPH
IV
0 to 45 MPH
Idle
Speed (MPH)
90
80
70
60
50
40
30
20
10
0
0:00:00
10/19/2002 12:30 PM
0:08:20
0:16:40
0:25:00
0:33:20
0:41:40
0:50:00
0:58:20
1:06:40
10/19/2002 1:42 PM
Elapsed Time
Hard Brake | Extreme Brake
452
Hard Acceleration | Extreme Acceleration
453

FIG. 8A

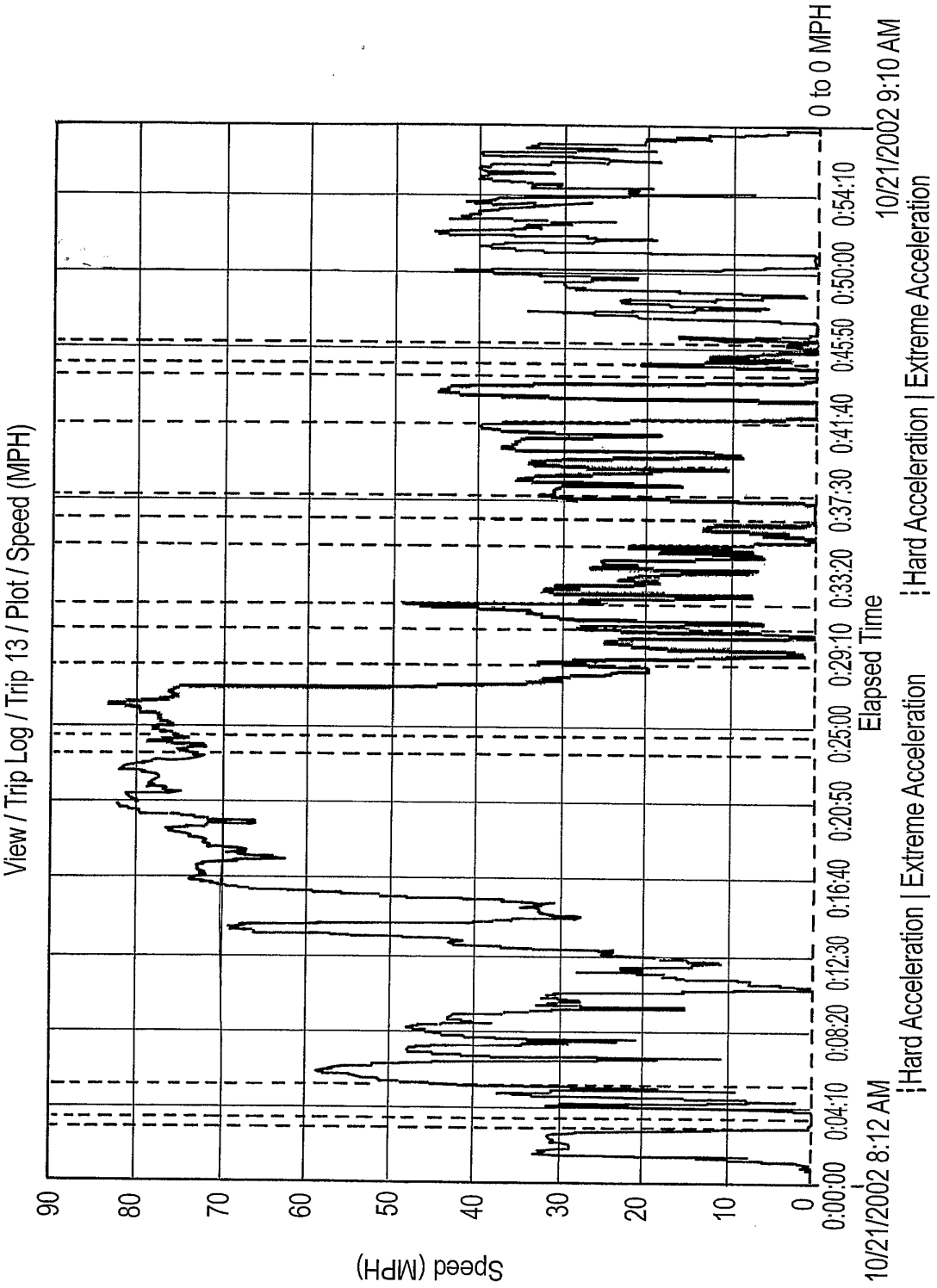
View / Trip Log / Trip 13 / Plot / Speed (MPH)
Speed (MPH)
90
80
70
60
50
40
30
20
10
0
0:00:00
0:04:10
0:08:20
0:12:30
0:16:40
0:20:50
0:25:00
0:29:10
0:33:20
0:37:30
0:41:40
0:45:50
0:50:00
0:54:10
Elapsed Time
10/21/2002 8:12 AM
10/21/2002 9:10 AM
0 to 0 MPH
Hard Acceleration | Extreme Acceleration
Hard Acceleration | Extreme Acceleration

FIG. 8B

View / Trip Log / Trip 6 / Table

	Elasped Time	Speed MPH	Engine Speed RPM	Coolant Temperature °F	Engine Load %	Battery Voltage V
1	0:00:00	0	1,427	109.4	35.69	14.095
2	0:00:09	0	1,108	107.6	41.18	14.140
3	0:00:19	0	1,075	107.6	42.75	14.117
4	0:00:29	0	1,082	107.6	41.96	14.140
5	0:00:38	0	1,092	107.6	41.57	14.117
6	0:00:48	0	1,104	109.4	40.78	14.140
7	0:00:58	0	943	111.2	44.71	14.140
8	0:01:07	1	997	111.2	41.57	14.140
9	0:01:17	3	1,012	113.0	42.75	14.117
10	0:01:27	8	1,129	114.8	55.69	14.185
11	0:01:36	13	1,565	116.6	38.04	14.185
12	0:01:46	15	1,617	118.4	31.76	14.208
13	0:01:56	14	1,381	120.2	33.33	14.095
14	0:02:05	6	775	122.0	74.12	14.095
15	0:02:15	9	2,293	123.8	22.35	14.163
16	0:02:25	17	2,250	125.6	48.24	14.185
17	0:02:34	22	1,455	127.4	34.12	14.208
18	0:02:44	23	1,641	129.4	29.02	14.163
19	0:02:54	21	1,325	131.0	33.73	14.095
20	0:03:03	16	1,278	131.0	37.65	14.185
21	0:03:13	14	1,260	134.6	34.12	14.140
22	0:03:23	9	952	134.6	38.82	14.095
23	0:03:32	1	911	136.4	38.04	14.027
24	0:03:42	0	869	136.4	38.82	14.095
25	0:03:52	0	870	136.4	38.43	14.095
26	0:04:01	0	845	138.2	38.43	14.185
27	0:04:11	0	861	138.2	38.82	14.185
28	0:04:21	0	863	140.0	39.22	14.163
29	0:04:30	1	900	140.0	46.27	14.185
30	0:04:40	9	1,429	143.6	74.51	14.095
31	0:04:50	19	1,641	143.6	53.33	14.163

FIG. 8C

View / Trip Log / Trip 13 / Table

	Elasped Time	Speed MPH
1	0:00:00	0
2	0:00:06	0
3	0:00:12	0
4	0:00:18	0
5	0:00:24	0
6	0:00:30	0
7	0:00:36	0
8	0:00:42	1
9	0:00:48	0
10	0:00:54	2
11	0:01:00	1
12	0:01:06	10
13	0:01:12	14
14	0:01:18	7
15	0:01:24	21
16	0:01:30	30
17	0:01:36	33
18	0:01:42	32
19	0:01:48	29
20	0:01:55	29
21	0:02:01	29
22	0:02:07	29
23	0:02:13	31
24	0:02:19	30
25	0:02:25	31
26	0:02:31	31
27	0:02:37	31
28	0:02:43	28
29	0:02:49	12
30	0:02:55	1
31	0:03:01	0

FIG. 8D

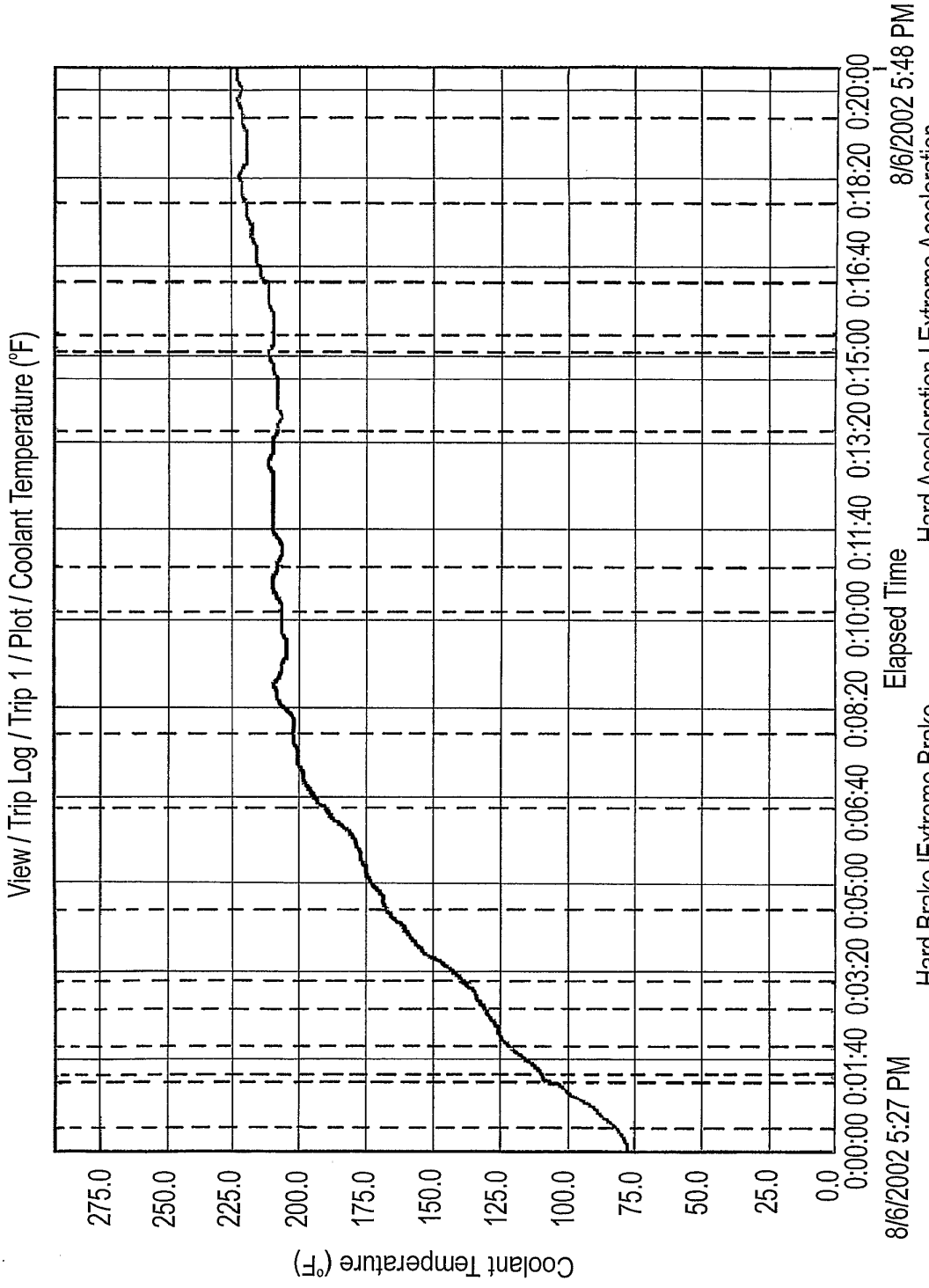
View / Trip Log / Trip 1 / Plot / Coolant Temperature (°F)
Coolant Temperature (°F)
275.0
250.0
225.0
200.0
175.0
150.0
125.0
100.0
75.0
50.0
25.0
0.0
0:00:00 0:01:40 0:03:20 0:05:00 0:06:40 0:08:20 0:10:00 0:11:40 0:13:20 0:15:00 0:16:40 0:18:20 0:20:00
Elapsed Time
8/6/2002 5:27 PM
8/6/2002 5:48 PM
Hard Brake |Extreme Brake
Hard Acceleration | Extreme Acceleration

FIG. 8E

View / Trip Log / Trip 1 / Table

	Elasped Time	Speed MPH	Engine Speed RPM	Engine Load %	Coolant Temperature °F
1	0:00:00	0	821	6.67	77.0
2	0:00:08	0	821	6.67	77.0
3	0:00:16	0	801	6.27	78.8
4	0:00:24	2	792	6.27	80.6
5	0:00:32	9	1,118	10.59	84.2
6	0:00:41	17	1,691	16.47	86.0
7	0:00:49	31	2,013	27.06	89.6
8	0:00:57	37	2,003	24.71	93.2
9	0:01:05	39	1,812	21.18	98.6
10	0:01:13	37	1,525	13.73	102.2
11	0:01:22	1	1,269	7.06	107.6
12	0:01:30	12	780	6.27	109.4
13	0:01:38	33	2,180	30.98	113.0
14	0:01:46	26	1,893	16.08	116.6
15	0:01:54	14	1,218	12.16	120.2
16	0:02:03	0	802	6.27	123.8
17	0:02:11	0	741	5.88	125.6
18	0:02:19	0	730	5.49	125.6
19	0:02:27	0	719	5.49	127.4
20	0:02:36	0	708	5.49	129.2
21	0:02:44	19	727	5.49	131.0
22	0:02:52	34	2,934	39.22	132.8
23	0:03:00	24	1,854	14.90	134.6
24	0:03:08	14	873	5.88	138.2
25	0:03:17	36	2,140	34.51	140.0
26	0:03:25	41	2,267	34.51	143.6
27	0:03:33	40	1,644	16.47	147.2
28	0:03:41	39	1,529	8.24	152.6
29	0:03:49	36	1,238	6.67	154.4
30	0:03:58	35	1,349	13.73	158.0
31	0:04:06	37	1,404	14.90	159.8

FIG. 8F

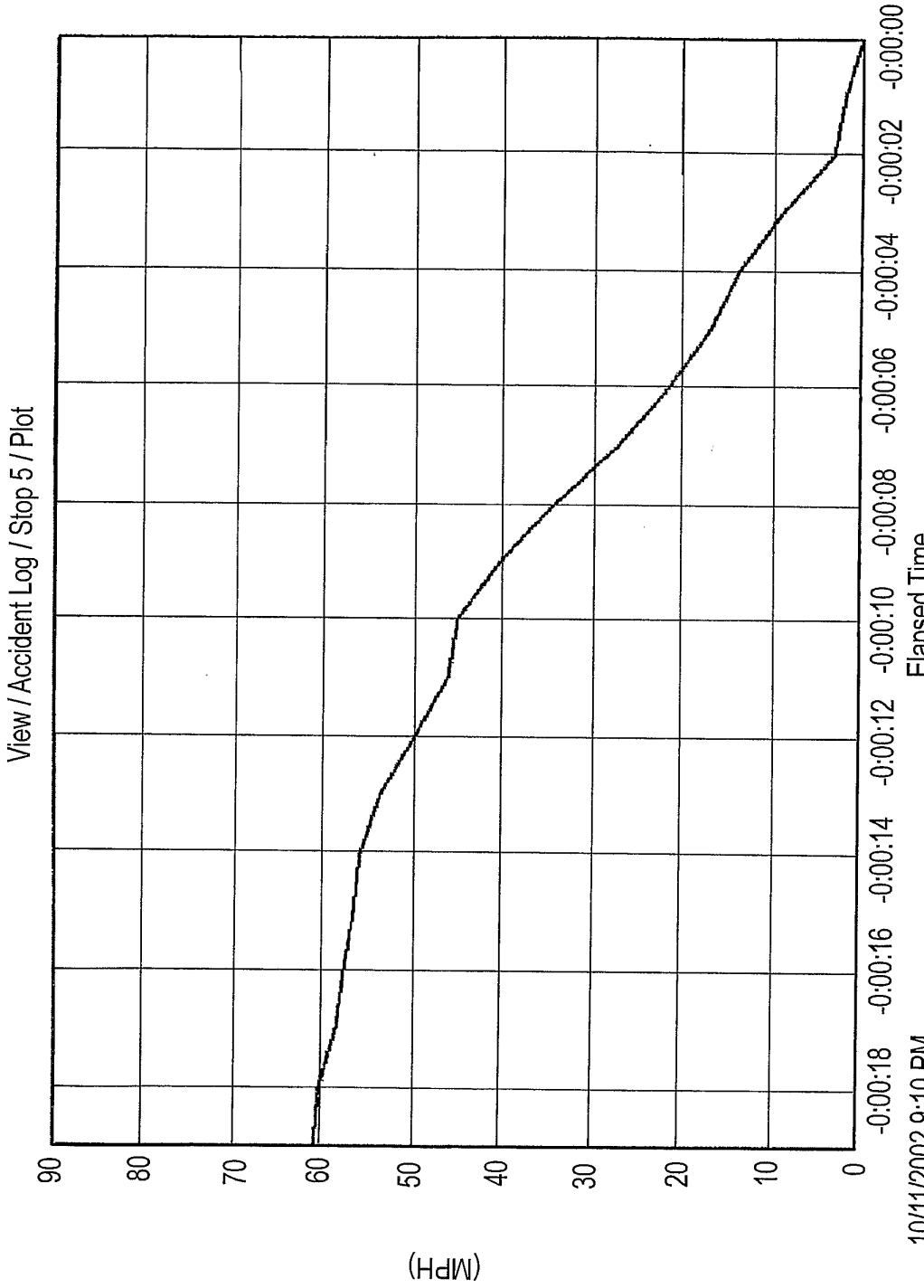
View / Accident Log / Stop 5 / Plot
90
80
70
60
50
40
30
20
10
0
(MPH)
-0:00:18
-0:00:16
-0:00:14
-0:00:12
-0:00:10
-0:00:08
-0:00:06
-0:00:04
-0:00:02
-0:00:00
Elapsed Time
10/11/2002 9:10 PM

FIG. 8G

View / Accident Log / Stop 5 / Table

	Elasped Time	MPH
1	-0:00:19	61
2	-0:00:18	60
3	-0:00:17	58
4	-0:00:16	58
5	-0:00:15	57
6	-0:00:14	56
7	-0:00:13	53
8	-0:00:12	50
9	-0:00:11	46
10	-0:00:10	45
11	- 0:00:09	40
12	-0:00:08	34
13	-0:00:07	27
14	-0:00:06	22
15	-0:00:05	17
16	-0:00:04	14
17	-0:00:03	9
18	-0:00:02	3
19	-0:00:01	2
20	0:00:00	0

FIG. 8H

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

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13 May 2004 (13.05.2004)

PCT

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(30) Priority Data:
10/281,330 25 October 2002 (25.10.2002) US

(71) Applicant: DAVIS INSTRUMENTS CORPORATION [US/US]; 3465 Diablo Avenue, Hayward, CA 94545 (US).

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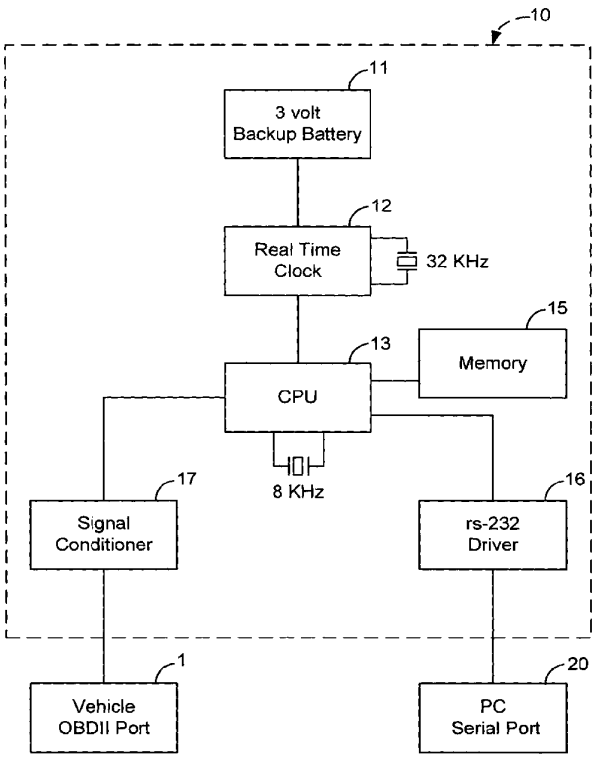
(74) Agents: HYNES, William, M. et al.; Townsend and Townsend and Crew LLP, Two Embarcacero Center, 8th Floor, San Francisco, CA 94111 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,

[Continued on next page]

(54) Title: MONITORING VEHICLE OPERATION THROUGH ONBOARD DIAGNOSTIC PORT



(57) Abstract: An onboard diagnostic memory module (10) is configured to plug into the OBD II port (1) and has a real-time clock (12) and power supply (11), a microprocessor (13) powered from a standard OBD II (1), microprocessor operating firmware, and an attached memory (7 MB) (15). In operation, the onboard diagnostic memory module (10) is preprogrammed with data collection parameters through microprocessor firmware by connection (20) to a computer, such as a PC, having programming software for the module firmware. Thereafter, the onboard diagnostic memory module (10) is moved into pin connection with the OBD II port (1) of a vehicle. Data is recorded on a "trip" basis, preferably using starting of the engine to define the beginning of the trip and stopping of the engine to define the end of the trip. Intelligent interrogation occurs by interpretive software from an interrogating computer to retrieve a trip-based and organized data set.

WO 2004/040405 A3

ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations*

Published:

— *with international search report*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
3 June 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US03/32569

A. **CLASSIFICATION OF SUBJECT MATTER**
IPC(7) : G01M 17/00; G06F 7/00
US CL : 701/33, 35
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)
U.S. : 701/33, 35, 29; 369/21; 340/439; 307/10.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. **DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,P	US 6,611,740 B2 (LOWERY et al.) 26 August 2003 (26.08.2003), column 2, lines 2-10; column 3, lines 1-5, 8-31; collumn 4, lines 59-62; column 6, lines 8-14, 14-21; column 6, line 54 to column 7, line 13	1-3,7,8
Y	US 6,263,268 B1 (NATHANSON) 17 July 2001 (17.07.2001), column 2, lines 31-64	1-3,7,8
A	US 6,226,577 B1 (YEO) 01 May 2001 (01.05.2001), see entire document	1-10
A	US 5,936,315 A (LAIS) 10 August 1999 (10.08.1999), see entire document	1-10
A	US 5,862,500 A (GOODWIN) 19 January 1999 (19.01.1999), see entire document	1-10

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

* Special categories of cited documents:

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"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

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"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

Date of the actual completion of the international search	Date of mailing of the international search report
26 February 2004 (26.02.2004)	08 APR 2004
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703)305-3230	Authorized officer for Michael J. Zanelli Telephone No. (703) 308-1113

Form PCT/ISA/210 (second sheet) (July 1998)

Electronic Patent Application Fee Transmittal

Application Number:	12132487
Filing Date:	03-Jun-2008
Title of Invention:	VEHICLE MONITORING SYSTEM
First Named Inventor/Applicant Name:	Raymond Scott Ling
Filer:	Joseph S. Hanasz/Lisa Hedl
Attorney Docket Number:	12654/42

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 2 months with $0 paid	1252	1	560	560

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**740**

Electronic Acknowledgement Receipt	
EFS ID:	11502480
Application Number:	12132487
International Application Number:	
Confirmation Number:	7812
Title of Invention:	VEHICLE MONITORING SYSTEM
First Named Inventor/Applicant Name:	Raymond Scott Ling
Customer Number:	10999
Filer:	Joseph S. Hanasz/Maggie Pieczonka
Filer Authorized By:	Joseph S. Hanasz
Attorney Docket Number:	12654/42
Receipt Date:	29-NOV-2011
Filing Date:	03-JUN-2008
Time Stamp:	17:43:57
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$740
RAM confirmation Number	6043
Deposit Account	231925
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		42Papers.pdf	194619 decb0e16077e613e8f732eec70b3f06073602236	yes	46

Multipart Description/PDF files in .zip description

Document Description	Start	End
Transmittal Letter	1	1
Amendment/Req. Reconsideration-After Non-Final Reject	2	2
Claims	3	28
Applicant Arguments/Remarks Made in an Amendment	29	38
Miscellaneous Incoming Letter	39	42
Information Disclosure Statement (IDS) Form (SB08)	43	44
Extension of Time	45	46

Warnings:

Information:

2	Foreign Reference	WO_2004-040405_A2.pdf	1610870 87f7b818ef5b006164752a1672190174e792b529	no	40

Warnings:

Information:

3	Foreign Reference	WO_2004-040405_A3.pdf	148642 f57ebae379f1df2df061a03001abf15138c3c621	no	3

Warnings:

Information:

4	Non Patent Literature	F25--AutoWatch_Its_There_When_Youre_Not--Are_You_a_business_or_fleet_owner_etc.PDF	54840 25157ab0a073837f490ea4408ab036f79255d49e	no	2

Warnings:

Information:

5	Non Patent Literature	F26--AutoWatch_Its_There_When_Youre_Not--Features.PDF	56233 0dfc4fe9f3b457063c9c95a600ad6a5bb38db8d9	no	2
Warnings:					
Information:					
6	Non Patent Literature	F30--Hayes---Insurers_Tech_Firm_Team_to_Track_Teen_Drivers.PDF	67132 6ab7928218abeb2254f6711eefdcd2cf595f0915	no	1
Warnings:					
Information:					
7	Non Patent Literature	F31--Roberts---Drive_Less_During_Rush_Hour_Get_A_Lower_Insurance_Rate.PDF	64691 8c9496008cdb979901a04e272ff536c115782c6d	no	1
Warnings:					
Information:					
8	Non Patent Literature	F32--SERF--System_for_Electronic_Rate_and_Form_Filing_1.PDF	140100 2bd97044248329d6e0c313d18da8dbeccee5ab5	no	4
Warnings:					
Information:					
9	Non Patent Literature	F35--Vehicle_Monitoring_Products_AutoWatch---Leader_in_PC_Auto_etc.PDF	71625 e931d720afb4334b1eeb780905ade8010160dedc	no	2
Warnings:					
Information:					
10	Non Patent Literature	F27.pdf	5253943 24b1b94f46ea82f296733a55827355db1c874813	no	132
Warnings:					
Information:					
11	Non Patent Literature	F28.pdf	16150634 5e10702fe307d33afcc827f42bf5279dd4ccd58f	no	154
Warnings:					
Information:					
12	Non Patent Literature	F33.pdf	2215192 761c1f3a36cf0b08f6c22d0774df6c22c4adb367	no	28
Warnings:					
Information:					
13	Non Patent Literature	F34.pdf	1236985 e296e24a126234be3057add6b4b76cf992b856cc	no	18
Warnings:					
Information:					

14	Non Patent Literature	F36.pdf	3614305 8089dc5c0bc82167fc06f3944a7f3573403d9a08	no	42
Warnings:					
Information:					
15	Non Patent Literature	F29--DiGenova---Incorporation_Transponders_etc-Feb-1996_efs.pdf	25600623 8993b47f6a21e89ba3051483222bb06415b27d8b	no	215
Warnings:					
Information:					
16	Fee Worksheet (SB06)	fee-info.pdf	32107 851dad1d12c992c3611b6a9ea15566cfd96ef48b	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	56512541	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

CERTIFICATE OF EFS FILING UNDER 37 CFR §1.8

I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office, Commissioner for Patents, via the EFS pursuant to 37 CFR §1.8 on the below date:

Date: November 29, 2011 Name: Joseph S. Hanasz, Reg. No. 54,720 Signature: /Joseph S. Hanasz/

BRINKS HOFER GILSON &LIONE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Appln. of:	Ling, et al.		
Appln. No.:	12/132,487	Examiner:	Robert R. Niquette
Filed:	June 3, 2008	Art Unit:	3695
For:	VEHICLE MONITORING SYSTEM	Conf. No.:	7812
Attorney Docket No.:	12654-42		

TRANSMITTAL

Mail Stop Amendment
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Attached is/are:

☒ Response to Office Action; Fifth Supplemental Information Disclosure Statement; Form PTO-1449; copies of references F23-F36; Petition and Fee for Extension of Time (37 CFR § 1.136(a))

Fee calculation:

☐ No additional fee is required.

☐ Small Entity.

☒ An extension fee in an amount of $560.00 for a two-month extension of time under 37 CFR § 1.136(a).

☒ A fee in an amount of $180.00 for the Information Disclosure Statement.

☐ An additional filing fee has been calculated as shown below:

						Small Entity			Not a Small Entity	
	Claims Remaining After Amendment		Highest No. Previously Paid For	Present Extra		Rate	Add'l Fee	OR	Rate	Add'l Fee
Total	134	Minus	134	0		x $30=			x $60=	
Indep.	13	Minus	13	0		x 125=			x $250=	
First Presentation of Multiple Dep. Claim						+$225=			+ $450=	
						Total	$		Total	$0

Fee payment:

☒ Please charge Deposit Account No. 23-1925 in the amounts of $560.00 for the two-month extension of time fee and $180.00 for the Information Disclosure Statement fee.

☐ Payment by credit card in the amount of $_____ (Form PTO-2038 is attached).

☒ The Director is hereby authorized to charge payment of any additional filing fees required under 37 CFR § 1.16 and any patent application processing fees under 37 CFR § 1.17 associated with this paper (including any extension fee required to ensure that this paper is timely filed), or to credit any overpayment, to Deposit Account No. 23-1925.

Respectfully submitted,

November 29, 2011
Date

/Joseph S. Hanasz/
Joseph S. Hanasz (Reg. No. 54,720)

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
12/132,487	06/03/2008	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 11/29/2011	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 134	Minus	** 134	= 0	X $ =		OR	X $60=	0
Independent (37 CFR 1.16(h))	* 13	Minus	***13	= 0	X $ =		OR	X $250=	0
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

AMENDMENT	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/ERIC DANTZLER/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/132,487	06/03/2008	Raymond Scott Ling	12654/42	7812

10999 7590 06/29/2011

Progressive Casualty/BHGL
P.O. Box 10395
Chicago, IL 60610

EXAMINER	
NIQUETTE, ROBERT R	
ART UNIT	PAPER NUMBER
3695	
MAIL DATE	DELIVERY MODE
06/29/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	12/132,487	LING ET AL.	
	Examiner	Art Unit	
	ROBERT NIQUETTE	3695	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 May 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is 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.

Disposition of Claims

4)☒ Claim(s) *1-134* is/are pending in the application.

4a) Of the above claim(s) *1-39,58-130,133 and 134* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *40-57,131 and 132* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on *05 August 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

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

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

This action is in reply to the application filed on 5-3-2008. Claims 1-134 are currently pending and have been examined. Applicant elected claims 40-57 on 5-5-2011 after a restriction requirement. Furthermore, applicant added claims 131 and 132 and amended claims 40 and 41. These modifications are entered via this Office Action. Claims 1-39, 58-130, 133 and 134 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a non-elected invention, there being no allowable generic or linking claim. Applicant is herein being requested to cancel the withdrawn claims in a future correspondence.

Election/Restrictions

Applicant's election with traverse of Group III, Claims 4-057 in the reply filed on 5-5-2011 is acknowledged. The traversal is on the ground(s) that the restriction is not proper. This is not found persuasive because although all claims are directed to the same class and subclass, the different groups of claims would require a different field of search that would present a serious burden to the Examiner as set out in MPEP 808.02. The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 40-57, 131 and 132 are rejected under U.S.C. Title 35, §102(b) as being anticipated by US5835008, *Colemere*.

As to claim(s) 40, *Colemere* teaches:

a processor that collects vehicle data from a vehicle bus that represents aspects of operating the vehicle (At least column(s) 15, lines 1-30, column 17, and abstract);

a memory that stores selected vehicle data related to a level of safety or an insurable risk in operating a vehicle (At least column(s) 15, lines 18-21 and claim 16);

a wireless transmitter configured to transfer the selected vehicle data retained within the memory to a distributed network and a server (At least column(s) 6, line 64-66 and column 7, line 51 to 54);

a database operatively linked to the server to store the selected vehicle data transmitted by the wireless transmitter, the database comprising a storage system remote from the wireless transmitter and the memory comprising records with operations for searching the records and other functions At least column(s) 15, lines 18-21 and claim 16); (column(s) 6, line 64 and column 7, line 51 to column 8, line 14);

where the server is configured to process the selected vehicle data that represents one or more aspects of operating the vehicle with data that reflects how the selected vehicle data affects a premium of an insurance policy, safety or level of risk (At least column(s) 2, lines 22-41 and column 12, lines 19-23);

and where the server is further configured to generate a rating factor based on the selected vehicle data stored in the database (At least column(s) 12, lines 19-23).

As per claim(s) 41, *Colemere* recites:

where the wireless transmitter is configured to transfer the selected vehicle data retained within the memory through a pulse position protocol without varying the power level or phase of a transmitting signal (At least column(s) 4, lines 25-42, column 6, line 67 to column 7, line 6, and column 7, line 51 to column 8, line 14).

In reference to claim(s) 42, *Colemere* discusses:

where the wireless transmitter is compliant with a wireless transaction facilitator that throttles the transmission rates across the wireless network based on an available bandwidth of the wireless network (At least column(s) 6, line 62 to column 7, line 6 and column 7, line 51 to column 8, line 14).

Regarding claim(s) 43, *Colemere* discloses:

a dynamic memory allocation processor that allocates a portion of the memory to retain a copy of a legacy version of firmware that comprises input/output instructions when an updated firmware is transferred to the memory through the wireless network, the dynamic memory allocation processor de- allocates the portion of the memory when an error-free version of the updated firmware is stored or installed in the system or when a copy of the legacy version of the software is restored to control the processor of the system (At least column(s) 15, lines 1-30 and column 17, lines 43-55).

With respect to claim(s) 44, *Colemere* describes:

where the wireless network comprises a mobile broadband communication network that provides full data exchange mobility up to vehicle speeds of about 100 miles per hour (At least column(s) 3, lines 23-38, column 4, lines 26-42 and column 11, lines 13-32).

Concerning claim(s) 45, *Colemere* addresses:

where the wireless transmitter is compliant with two or more multiple packet architectures that are automatically detected and one or more multiple packet architectures that

are automatically selected when a series of signals acknowledge that a communication or transfer of information or data may occur (At least column(s) 6, line 62 - column 7, line 6, and column 7, line 51 to column 8, line 14).

As per claim(s) 46, *Colemere* teaches:

where the wireless transmitter is responsive to an in-vehicle event-driven request to transfer the selected vehicle data retained in the memory to a remote server when the wireless network indicates an available channel capacity to transfer the selected vehicle data across the wireless network (At least column(s) 6, line 62 - column 7, line 6, and column 7, line 51 to column 8, line 14).

As to claim(s) 47, *Colemere* recites:

receiver tuned to receive continuously transmitted trilateral encoded signals through a bandwidth that is separate from the wireless network (At least column(s) 4, lines 25-42, column 6, line 62 to column 7 line 6 and column 7, line 51 to column 8, line 14).

In reference to claim(s) 48, *Colemere* discusses:

where the processor, the memory, and the wireless transmitter are in communication within a portable device (At least figure 4A).

Regarding claim(s) 49, *Colemere* discloses:

where the wireless transmitter comprises a single-chip cellular baseband processor (At least column(s) 15, lines 1-30 and column 17, lines 43-45).

In reference to claim(s) 50, *Colemere* describes:

where the single-chip cellular baseband processor is Global System for Mobile Communication compliant, Code Division Multiple Access compliant, or General Packet Radio Service compliant is a matter of design choice. The instant invention can function regardless of what standard of compliance is employed.

Concerning claim(s) 51, *Colemere* addresses:

where the single-chip cellular baseband processor is Global System for Mobile Communication compliant and General Packet Radio Service compliant. See the discussion of claim 50 above.

As per claim(s) 52, *Colemere* teaches:

where the single-chip cellular baseband processor comprises integrated interface drivers that enable auxiliary components comprising loudspeakers, display, and memory modules to connect directly to the single-chip (At least figure 2).

As to claim(s) 53, *Colemere* addresses:

where the wireless transmitter comprises an embedded antenna element adjacent to the processor and the memory (At least column(s) 15, line 48 to column 16, line 23).

In reference to claim(s) 54, *Colemere* addresses:

where the embedded antenna element comprises a circuit board element (At least column(s) 15, line 48 to column 16, line 23).

Regarding claim(s) 55, *Colemere* discloses:

where the wireless transmitter is further configured to respond to a trigger event by transmitting an alert to a third party when a driving incident occurs (At least column(s) 2, lines 12-14, column 4, lines 26-42 and column 8 lines 31-49).

With respect to claim(s) 56, *Colemere* addresses:

where the driving incident comprises exceeding a speed threshold, traveling outside of a designation, or a lock out condition (At least column(s) 2, lines 53-65).

As per claim(s) 57, *Colemere* teaches:

where the wireless transmitter comprises a transceiver configured to receive a communication from a third party and the alert comprises a text or an aural message (At least column(s) 8, lines 16-31 and column 9, lines 6-35).

As to claim(s) 131, *Colemere* recites:

where the server is further configured to calculate an insured's premium under the insured's insurance policy based on the rating factor, or a surcharge of a discount to the insured's premium, based on the rating factor (At least column(s) 12, lines 19-23).

In reference to claim(s) 132, *Colemere* discusses:

Where the server is further configured to process selected vehicle data that represents one or more aspects of operating the vehicle with data that reflects how the selected vehicle data affects an insured's premium under an insured's insurance policy (At least column(s) 12, lines 19-23).

Conclusion

Additional prior art made of record and not relied upon that is considered pertinent to patentee's disclosure can be found on the attached PTO-872.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert R. Niquette whose telephone number is 571-270-3613. The examiner can normally be reached on Monday through Thursday, 5:30 AM to 4:00 PM EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Kyle, can be reached on 571-272-6746. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert R. Niquette/
Examiner, AU 3695
5-17-2011

/OJO O OYEBISI/

Primary Examiner, Art Unit 3695

Notice of References Cited	Application/Control No. 12/132,487	Applicant(s)/Patent Under Reexamination LING ET AL.	
	Examiner ROBERT NIQUETTE	Art Unit 3695	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-5,835,008 A	11-1998	Colemere, Jr., Dale M.	340/439
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12132487	LING ET AL.
	Examiner	Art Unit
	ROBERT NIQUETTE	3695

SEARCHED			
Class	Subclass	Date	Examiner
705		5-16-2011	RRN

SEARCH NOTES		
Search Notes	Date	Examiner
See attached EAST search	5-16-2011	RRN
See attached PLUS search	5-16-2011	RRN
Consultation with examiner Theresa Woods	6-16-2011	RRN

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

/ROBERT NIQUETTE/ Acting Examiner.Art Unit 3695	

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12132487	LING ET AL.
	Examiner	Art Unit
	ROBERT NIQUETTE	3695

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	05/17/2011								
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	2	N								
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	4	N								
	5	N								
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	7	N								
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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12132487	LING ET AL.
	Examiner	Art Unit
	ROBERT NIQUETTE	3695

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☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12132487	LING ET AL.
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CLAIM		DATE								
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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12132487	LING ET AL.
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	ROBERT NIQUETTE	3695

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

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	134	N								

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CONFIRMATION NO. 7812

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/132,487	06/03/2008 RULE	705	3695	12654/42

APPLICANTS

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Dane Allen Shrallow, Solon, OH;
William Curtis Everett, Hudson, OH;

**** CONTINUING DATA **************************

This application is a CIP of 10/764,076 01/23/2004
which is a CIP of 09/571,650 05/15/2000 PAT 6,868,386
which is a CIP of 09/135,034 08/17/1998 PAT 6,064,970
which is a CON of 08/592,958 01/29/1996 PAT 5,797,134

**** FOREIGN APPLICATIONS **************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****

06/13/2008

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /ROBERT R NIQUETTE/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		OH	35	130	13

ADDRESS

Progressive Casualty/BHGL
P.O. Box 10395
Chicago, IL 60610
UNITED STATES

TITLE

VEHICLE MONITORING SYSTEM

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8968	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

BIB (Rev. 05/07).

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	5127834	(@rlad|@ad<"19960129")	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/17 06:10
L3	0	"5835008PN." and L2	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/17 06:10
S6	3	((RAYMOND) near2 (LING)).INV.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/05/14 09:06
S7	60	((RICHARD) near2 (HUTCHINSON)).INV.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/05/14 09:06
S8	0	((WILBERT) near2 (STEIGERWALD)).INV.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/05/14 09:07
S9	15	((WILLIAM) near2 (SAY)).INV.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/05/14 09:09
S10	7	((PATRICK) near2 (O'MALLEY)).INV.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/05/14 09:09
S11	0	((DANE) near2 (SHRALLOW)).INV.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/05/14 09:10
S12	113	((WILLIAM) near2 (EVERETT)).INV.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/05/14 09:10
S13	2	(6714894|20020111725).pn.	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/14 09:30
S14	8	("20010039002" | "5835008" | "6064970" | "6253129").PN. OR ("6714894").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/05/15 06:32

S15	21	(US-1265442-$.DID. OR US-3781824-$.DID. OR US-3870894-$.DID. OR US-4212195-$.DID. OR US-4387587-$.DID. OR US-4581708-$.DID. OR US-4593357-$.DID. OR US-4638289-$.DID. OR US-4706083-$.DID. OR US-4836024-$.DID. OR US-4845630-$.DID. OR US-4944401-$.DID. OR US-4945759-$.DID. OR US-5017916-$.DID. OR US-5074144-$.DID. OR US-5355855-$.DID. OR US-5394136-$.DID. OR US-5400018-$.DID. OR US-5412570-$.DID. OR US-5445347-$.DID. OR US-5446659-$.DID. OR US-5459660-$.DID. OR US-5465079-$.DID. OR US-5471193-$.DID. OR US-5485161-$.DID. OR US-5497329-$.DID. OR US-5581464-$.DID. OR US-5608629-$.DID. OR US-5654501-$.DID. OR US-5680140-$.DID. OR US-5693876-$.DID. OR US-5726893-$.DID. OR US-5790427-$.DID. OR US-5799249-$.DID. OR US-5811884-$.DID. OR US-5815093-$.DID. OR US-5832394-$.DID. OR US-5844473-$.DID. OR US-5862500-$.DID. OR US-5877707-$.DID. OR US-5928291-$.DID. OR US-5974356-$.DID. OR US-6009363-$.DID. OR US-6076026-$.DID. OR US-6185490-$.DID. OR US-6246933-$.DID. OR US-6608554-$.DID. OR US-6744352-$.DID. OR US-20040139034-$.DID. OR US-7015800-$.DID. OR US-7449993-$.DID. OR US-2151458-$.DID. OR US-2164608-$.DID. OR US-2229238-$.DID. OR EP-0383593-$.DID. OR EP-0444738-$.DID. OR EP-	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/15 06:39

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S21	1650	black box and (airplane or aircraft)	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/16 08:53

S22	5126059	(@rlad|@ad<"19960129")	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/16 08:54
S23	962	black box and (airplane or aircraft) and S22	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/16 08:54
S24	208	(black box same (airplane or aircraft)).detd. and S22	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/16 08:54
S25	189	(black box same (airplane or aircraft)).bsum. and S22	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/16 08:54
S26	19	(black box same (airplane or aircraft)).ab. and S22	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/16 08:54
S27	1	("5835008").pn. and collect $3 near2 data	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/16 09:01
S28	1	("5835008").pn. and (wireless same transmit$3)	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/16 09:18
S29	0	("5835008").pn. and search $3	US-PGPUB; USPAT; USOCR; EPO	ADJ	ON	2011/05/16 09:21
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EAST Search History (Interference)

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FORM PTO-1449		SERIAL NO. 12/132,487	CASE NO. 12654-42
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT		FILING DATE June 3, 2008	GROUP ART UNIT 3695
(use several sheets if necessary)	APPLICANT(S): Raymond Scott Ling et al.		CONFIRMATION NO. 7812

REFERENCE DESIGNATION **U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER Number-Kind Code (if known)	DATE	NAME	CLASS/ SUBCLASS	FILING DATE
/R.N./	E1	US 3,781,824	12/25/1973	Caiati et al.		
/R.N./	E2	US 3,870,894	03/11/1975	Brede et al.		
/R.N./	E3	US 4,212,195	07/15/1980	Young		
/R.N./	E4	US 4,387,587	06/14/1983	Faulconer		
/R.N./	E5	US 4,581,708	04/08/1986	Van Ostrand et al.		
/R.N./	E6	US 4,593,357	06/03/1986	Van Ostrand et al.		
/R.N./	E7	US 4,638,289	01/20/1987	Zottnik		
/R.N./	E8	US 4,706,083	11/10/1987	Baatz et al.		
/R.N./	E9	US 4,836,024	06/06/1989	Woehrl et al.		
/R.N./	E10	US 4,845,630	07/04/1989	Stephens		
/R.N./	E11	US 4,944,401	07/31/1990	Groenewegen		
/R.N./	E12	US 4,945,759	08/07/1990	Krofchalk et al.		
/R.N./	E13	US 5,017,916	05/21/1991	Londt et al.		
/R.N./	E14	US 5,074,144	12/24/1991	Krofchalk et al.		
/R.N./	E15	US 5,355,855	10/18/1994	Saikalis		
/R.N./	E16	US 5,394,136	02/28/1995	Lammers		
/R.N./	E17	US 5,400,018	03/21/1995	Scholl et al.		
/R.N./	E18	US 5,412,570	05/02/1995	Gruler et al.		
/R.N./	E19	US 5,445,347	08/29/1995	Ng		
/R.N./	E20	US 5,446,659	08/29/1995	Yamawaki		
/R.N./	E21	US 5,459,660	10/17/1995	Berra		
/R.N./	E22	US 5,465,079	11/07/1995	Bouchard et al.		
/R.N./	E23	US 5,471,193	11/28/1995	Peterson et al.		
/R.N./	E24	US 5,485,161	01/16/1996	Vaughn		
/R.N./	E25	US 5,497,329	03/05/1996	Tang		
/R.N./	E26	US 5,581,464	12/03/1996	Woll et al.		
/R.N./	E27	US 5,608,629	03/04/1997	Cuddihy et al.		
/R.N./	E28	US 5,654,501	08/05/1997	Grizzle et al.		
/R.N./	E29	US 5,680,140	10/21/1997	Loomis		
/R.N./	E30	US 5,693,876	12/02/1997	Ghitea, Jr. et al.		
/R.N./	E31	US 5,726,893	03/10/1998	Schuchman et al.		
/R.N./	E32	US 5,790,427	08/04/1998	Greer et al.		
/R.N./	E33	US 5,799,249	08/25/1998	Kennedy, III et al.		
/R.N./	E34	US 5,811,884	09/22/1998	Matuoka et al.		
/R.N./	E35	US 5,815,093	09/29/1998	Kikinis		
/R.N./	E36	US 5,832,394	11/03/1998	Wortham		
/R.N./	E37	US 5,844,473	12/01/1998	Kaman		
/R.N./	E38	US 5,862,500	01/19/1999	Goodwin		
/R.N./	E39	US 5,877,707	03/02/1999	Kowalick		

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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(use several sheets if necessary)	APPLICANT(S): Raymond Scott Ling et al.	

REFERENCE DESIGNATION **U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER Number-Kind Code (if known)	DATE	NAME	CLASS/ SUBCLASS	FILING DATE
/R.N./	E40	US 5,928,291	07/27/1999	Jenkins et al.		
/R.N./	E41	US 5,974,356	10/26/1999	Doyle et al.		
/R.N./	E42	US 6,009,363	12/28/1999	Beckert et al.		
/R.N./	E43	US 6,076,026	06/13/2000	Jambhekar et al.		
/R.N./	E44	US 6,185,490 B1	02/06/2001	Ferguson		
/R.N./	E45	US 6,246,933 B1	06/12/2001	Bague		
/R.N./	E46	US 6,608,554 B2	08/19/2003	Lesesky et al.		
/R.N./	E47	US 6,744,352 B2	06/01/2004	Lesesky et al.		
/R.N./	E48	US 2004/0139034 A1	07/15/2004	Farmer		
/R.N./	E49	US 7,015,800 B2	03/21/2006	Lesesky et al.		
/R.N./	E50	US 7,449,993 B2	11/11/2008	Lesesky et al.		

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER Number-Kind Code (if known)	DATE	COUNTRY	CLASS/ SUBCLASS	TRANSLATION YES OR NO
/R.N./	E51	CA 2,151,458	06/23/1994	Canada		
/R.N./	E52	CA 2,164,608	12/22/1994	Canada		
/R.N./	E53	CA 2,229,238	08/11/1999	Canada		
/R.N./	E54	EP 0 383 593 A2	08/22/1990	Europe		
/R.N./	E55	EP 0 444 738 A2	09/04/1991	Europe		
/R.N./	E56	EP 0 700 009 A3	03/06/1996	Europe		ABSTRACT
/R.N./	E57	EP 0 895 173 A3	02/03/1999	Europe		
/R.N./	E58	EP 1 128 265 A1	08/29/2001	Europe		ABSTRACT
/R.N./	E59	EP 1 160 707 A1	12/05/2001	Europe		
/R.N./	E60	EP 1 241 599 A1	09/18/2002	Europe		
/R.N./	E61	EP 1 746 537 A3	01/24/2007	Europe		
/R.N./	E62	DE 195 22 940 A1	01/02/1997	Germany		ABSTRACT
/R.N./	E63	DE 197 28 872 A	01/14/1999	Germany		ABSTRACT
/R.N./	E64	JP 3-4660 A	01/10/1991	Japan		ABSTRACT
/R.N./	E65	WO 84/03359 A1	08/30/1984	WIPO		ABSTRACT
/R.N./	E66	WO 88/09023 A1	11/17/1988	WIPO		ABSTRACT
/R.N./	E67	WO 93/10510 A1	05/27/1993	WIPO		ABSTRACT
/R.N./	E68	WO 94/04975 A1	03/03/1994	WIPO		
/R.N./	E69	WO 94/18645 A1	08/18/1994	WIPO		ABSTRACT
/R.N./	E70	WO 94/28434 A1	12/08/1994	WIPO		
/R.N./	E71	WO 96/15636 A1	05/23/1996	WIPO		
/R.N./	E72	WO 97/33382 A1	09/12/1997	WIPO		
/R.N./	E73	WO 98/47109 A1	10/22/1998	WIPO		
/R.N./	E74	WO 00/17721 A2	03/30/2000	WIPO		
/R.N./	E75	WO 00/17800 A1	03/30/2000	WIPO		
/R.N./	E76	WO 01/18491 A1	03/15/2001	WIPO		

EXAMINER	DATE CONSIDERED

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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER Number-Kind Code (if known)	DATE	COUNTRY	CLASS/ SUBCLASS	TRANSLATION YES OR NO
/R.N./	E77	WO 01/73693 A2	10/04/2001	WIPO		
/R.N./	E78	WO 02/41119 A2	05/23/2002	WIPO		
/R.N./	E79	WO 03/073339 A1	09/04/2003	WIPO		

EXAMINER INITIAL	OTHER ART – NON PATENT LITERATURE DOCUMENTS (Include name of author, title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published.	
/R.N./	E80	"Automatic Vehicle Location for Public Safety Dispatch," Trimble brochure, 1993, 8 pages.
/R.N./	E81	Brown, Robert L., "Recent Canadian Human Rights Decisions Having an Impact on Gender-Based Risk Classification Systems," Journal of Actuarial Practice, Vol. 3, No. 1, 1995, pp. 171-192.
/R.N./	E82	Butler, P. et al., "Driver Record: a Political Red Herring That Reveals the Basic Flaw in Automobile Insurance Pricing," Journal of Insurance Regulation, Vol. 8, No. 2, 1989, pp. 200-234.
/R.N./	E83	Butler, P., "Cost-Based Pricing of Individual Automobile Risk Transfer: Car-Mile Exposure Unit Analysis," Journal of Actuarial Practice, Vol. 1, No. 1, 1993, pp. 51-84.
/R.N./	E84	Butler, P., "Gas-Tax and Time-Period Insurance Methods Equally Flawed," National Underwriter, June 15, 1998, p. 594.
/R.N./	E85	Butler, T., "Insurance by the Mile," Letter to the Editor, The Washington Post, January 17, 1991, 2 pages.
/R.N./	E86	Capon, R., "Insure by the Mile," Letter to the Editor, The Washington Post, December 27, 1990, 2 pages.
/R.N./	E87	Civil Docket for Case No. 1:10-cv-01370-PAG, Progressive Casualty Insurance Company versus Safeco Insurance Company of Illinois et al., U.S. District Court, Northern District of Ohio (Cleveland) printed from the internet at <http://ecf.ohnd.uscourts.gov/cgi-bin/DktRpt.pl?324688388186026-L_1_0-1> on December 22, 2010, 12 pages.
/R.N./	E88	Complaint, filed June 18, 2010, Case No. 1:10-cv-01370-PAG: Progressive Casualty Insurance Company versus Safeco Insurance Company of Illinois, Safeco Insurance Company of America, Safeco Corporation, Liberty Mutual Insurance Company, Liberty Mutual Group Inc., The Ohio Casualty Insurance Company, and Open Seas Solutions, Inc., 201 pages.
/R.N./	E89	Defendants' Motion to Dismiss for Failure to State a Claim Upon Which Relief May Be Granted, filed September 8, 2010, Case No. 1:10-cv-01370-PAG: Progressive Casualty Insurance Company versus Safeco Insurance Company of Illinois, Safeco Insurance Company of America, Safeco Corporation, Liberty Mutual Insurance Company, Liberty Mutual Group Inc., The Ohio Casualty Insurance Company, and Open Seas Solutions, Inc., 99 pages.
/R.N./	E90	Defendants' Motion to Stay Litigation Pending Ex Parte Reexamination of the Patent-In-Suit by the United States PTO filed October 14,2010, Case No. 1:10-cv-01370-PAG: Progressive Casualty Insurance Company versus Safeco Insurance Company of Illinois, Safeco Insurance Company of America, Safeco Corporation, Liberty Mutual Insurance Company, Liberty Mutual Group Inc., The Ohio Casualty Insurance Company, and Open Seas Solutions, Inc., 339 pages.

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LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT	FILING DATE June 3, 2008	GROUP ART UNIT 3695
(use several sheets if necessary)	APPLICANT(S): Raymond Scott Ling et al.	

EXAMINER INITIAL	OTHER ART – NON PATENT LITERATURE DOCUMENTS (Include name of author, title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published.	
/R.N./	E91	Defendants' Reply Memorandum In Support of Their Motion to Dismiss for Failure to State a Claim Upon which Relief may be Granted filed October 26, 2010, Case No. 1:10-cv-01370-PAG: Progressive Casualty Insurance Company versus Safeco Insurance Company of Illinois, Safeco Insurance Company of America, Safeco Corporation, Liberty Mutual Insurance Company, Liberty Mutual Group Inc., The Ohio Casualty Insurance Company, and Open Seas Solutions, Inc., 13 pages.
/R.N./	E92	Defendants' Reply Memorandum In Support of Their Motion to Stay Litigation Pending Ex Parte Reexamination of the Patent-In-Suit by the United States PTO filed November 4, 2010, Case No. 1:10-cv-01370-PAG: Progressive Casualty Insurance Company versus SafeCo Insurance Company of Illinois, SafeCo Insurance Company of America, SafeCo Corporation, Liberty Mutual Insurance Company, Liberty Mutual Group Inc., The Ohio Casualty Insurance Company, and Open Seas Solutions, Inc., 12 pages.
/R.N./	E93	Dorweiler, P., "Notes on Exposure and Premium Bases," Proceedings of the Casualty Actuarial Society, Vol. 16, Nos. 33 & 34, 1929-1930, pp. 319-343.
/R.N./	E94	Hanneghan et al., "The World-Wide Web As A Platform for Supporting Interactive Concurrent Engineering," Proceedings of Advanced Information Systems Engineering - 8th International Conference, CAiSE'96, Heraklion, Crete, Greece, May 20-24, 1996, 17 pages. (available from the internet at URL: http://www.cms.livjm.ac.uk/cmsmhann/publications/papers/CAISE96.pdf)
/R.N./	E95	Klein, J. S. et al., "A Black Box Tells Just the Facts," The Los Angeles Times, Section: View, June 13, 1991, pp. E-8. (2 pages)
/R.N./	E96	Memorandum of Opinion and Order (regarding Defendants' Motion to Dismiss for Failure to State a Claim Upon Which Relief May Be Granted) dated November 12, 2010, Case No. 1:10-cv-01370-PAG: Progressive Casualty Insurance Co. versus Safeco Insurance Co., et al., 10 pages.
/R.N./	E97	Memorandum of Opinion and Order (regarding Defendants' Motion to Stay Litigation Pending Ex Parte Reexamination of the Patent-In-Suit by the United States PTO) dated November 12, 2010, Case No. 1:10-cv-01370-PAG: Progressive Casualty Insurance Co. versus Safeco Insurance Co., et al., 9 pages.
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/R.N./	E99	"Operation of an Audited-Mile/Year Automobile Insurance System-Under Pennsylvania Law," A Study Prepared for Sponsors of Pennsylvania Senate Bill SB 775 and Pennsylvania House Bill 1881 and other Interested Members of the Pennsylvania General Assembly, NOW Insurance Project for National Organization for Women, June 1992, 18 pages.
/R.N./	E100	Progressive's Memorandum in Opposition to Defendants' Motion to Dismiss for Failure to State a Claim Upon which Relief may be Granted filed October 12, 2010, Case No. 1:10-cv-01370-PAG: Progressive Casualty Insurance Company versus Safeco Insurance Company of Illinois, Safeco Insurance Company of America, Safeco Corporation, Liberty Mutual Insurance Company, Liberty Mutual Group Inc., The Ohio Casualty Insurance Company, and Open Seas Solutions, Inc., 59 pages.

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/R.N./	E101	Progressive's Memorandum in Opposition to Defendants' Motion to Stay Litigation Pending Ex Parte Reexamination of the Patent-In-Suit by the USPTO filed October 28, 2010, Case No. 1:10-cv-01370-PAG: Progressive Casualty Insurance Company versus Safeco Insurance Company of Illinois, Safeco Insurance Company of America, Safeco Corporation, Liberty Mutual Insurance Company, Liberty Mutual Group Inc., The Ohio Casualty Insurance Company, and Open Seas Solutions, Inc., 80 pages.
/R.N./	E102	PSC-200™ Intelligent Data Controller, product description, Trimble, 1994, 2 pages.
/R.N./	E103	Request for Ex Parte Reexamination of U.S. Patent. No. 6,064,970 Pursuant to 35 U.S.C. § 302, 37 C.F.R. § 1.510, filed September 22, 2010, 178 pages.
/R.N./	E104	"Vehicle Alert and Notification System," IBM Technical Disclosure Bulletin, Vol. 38, No. 8, August 1995, pp. 209-211.

EXAMINER /Robert Niquette/	DATE CONSIDERED 06/02/2011

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/R.N./	A44	US 5,819,198	10/06/1998	Peretz		
/R.N./	A45	US 5,845,256	12/01/1998	Pescitelli et al.		
/R.N./	A46	US 5,916,287	06/29/1999	Arjomand et al.		
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/R.N./	A48	US 6,067,488	05/23/2000	Tano		
/R.N./	A49	US 6,073,063	06/06/2000	Leong Ong et al.		
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/R.N./	A65	US 6,505,106 B1	01/07/2003	Lawrence et al.		
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/R.N./	A77	US 2003/0204290 A1	10/30/2003	Sadler et al.		
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/R.N./	A80	US 6,714,894	03/30/2004	Tobey et al.		

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/R.N./	A81	US 6,732,031 B1	05/04/2004	Lightner et al.		
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/R.N./	A109	AutoWatch - It's There When You're Not: Requirements, EASE Simulation, Inc., copyright 1997-2003, Revised March 3, 2003, printed from the internet at <http://www.obd2.com/autowatch/obd2/autowatch_requirements.htm> on September 9, 2004, 2 pages.

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LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT	FILING DATE June 3, 2008	GROUP ART UNIT 3693
(use several sheets if necessary)	APPLICANT(S): Raymond Scott Ling et al.	

EXAMINER INITIAL	OTHER ART – NON PATENT LITERATURE DOCUMENTS (Include name of author, title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published.	
/R.N./	A149	Vetronix Corporation - Crash Data Retrieval System Frequently Asked Questions, Vetronix Corporation, copyright 2004, printed from the internet at <http://www.vetronix.com/diagnostics/cdr/faqs.html> on September 8, 2004, 5 pages.
/R.N./	A150	Vetronix Corporation Presentation "Advances in Scan Tool Technology," from OBD 2K On-Board Diagnostics Conference 2000, Ogden, UT, May 19, 2000, 13 pages.
/R.N./	A151	Vetronix Corporation Presentation titled "Vetronix Crash Data Retrieval System," from IEEE P1616 Meeting, September 24, 2002, 29 pages.
/R.N./	A152	Vetronix Corporation Press Release article titled "Vetronix Corporation launches the Crash Data Retrieval (CDR) System," March 9, 2000, printed from the internet at <http://www.vetronix.com/company/press/vtx_2000-03-09_cdr.html> on September 8, 2004, 2 pages.
/R.N./	A153	Vetronix Corporation Press Release article titled "Vetronix Corporation to Provide 'AutoConnect' Vehicle Interface Solutions for the Clarion AutoPC," January 8, 1998, 1 page.
/R.N./	A154	WKGM/TV 6, check for payment to Ease Simulation, Inc. of invoice #9813, November 13, 1998, 1 page.

EXAMINER /Robert Niquette/	DATE CONSIDERED 05/14/2011

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LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT		FILING DATE: June 3, 2008	GROUP ART UNIT: 3693
(use several sheets if necessary)	APPLICANTS: Ling et al.		CONFIRMATION NO.: 7812

REFERENCE DESIGNATION **U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER Number-Kind Code (if known)	DATE	NAME	CLASS/ SUBCLASS	FILING DATE
/R.N./	B1	7,191,058 B2	03/13/2007	Laird et al.		
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/R.N./	B4	6,904,359 B2	06/07/2005	Jones		
/R.N./	B5	6,823,258 B2	11/23/2004	Ukai et al.		
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FORM PTO-1449	SERIAL NO.: 12/132,487	CASE NO.: 12564/42
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT	FILING DATE: June 3, 2008	GROUP ART UNIT: 3693
(use several sheets if necessary) APPLICANTS: Ling et al.		CONFIRMATION NO.: 7812

REFERENCE DESIGNATION **U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER Number-Kind Code (if known)	DATE	NAME	CLASS/ SUBCLASS	FILING DATE
/R.N./	B40	5,737,711	04/07/1998	Abe		
/R.N./	B41	5,732,074	03/24/1998	Spaur et al.		
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/R.N./	B75	EP 1 207 499 A1	05/22/2002	EP		Yes
/R.N./	B76	EP 1 164 551 A2	12/19/2001	EP		Yes

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(use several sheets if necessary) APPLICANTS: Ling et al.		CONFIRMATION NO.: 7812

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER Number-Kind Code (if known)	DATE	COUNTRY	CLASS/ SUBCLASS	TRANSLATION YES OR NO
/R.N./	B77	WO 01/86576 A1	11/15/2001	PCT		Yes
/R.N./	B78	WO 01/26338 A2	04/12/2001	PCT		Yes
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/R.N./	B83	WO 97/13208	04/10/1997	PCT		Yes
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EXAMINER INITIAL		OTHER ART – NON PATENT LITERATURE DOCUMENTS (Include name of author, title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published.
/R.N./	B87	Gordon, Jacques. " – this Year and Beyond: OBD III is Just Speculation, but OBD II Keeps Evolving in Response to Real-World Experience." Aftermarket Business v112, n3, p52. March 2002: ISSN: ISSN: 0892-1121, pp. 5.
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/R.N./	B90	Davis DriveRight. "Solutions for Vehicle Safety and Management 2005." <www.driveright.cc>; pp.16
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/R.N./	B95	"Road Safety Teen Drivers Frequently Asked Questions" Roadsafety.com <http://64.233.167.104/search?q=cache:bwGvLSZMlr0J:www.roadsafety.com/faqs_teen.php+drivers +teen+...>; last visited on 25 Oct. 2004, pp. 7.
/R.N./	B96	"Road Safety Press Releases" Roadsafety.com <http://www.roadsafety.com/pressreleases.php?view=16&id=18>; last visited on 25 Oct. 2004, p. 1.
/R.N./	B97	"Road Safety Press Releases" Roadsafety.com <http://www.roadsafety.com/pressreleases.php?view=16&id=19>; last visited on 25 Oct. 2004, p. 1.
/R.N./	B98	"Newsmine.org – black box in car reports you.txt" Newmine.org. <http://newsmine.org/archive/security/bigbrother/black-box-in-car-reports-you.txt>; last visited on 25 Oct. 2004, p. 4.

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(use several sheets if necessary)	APPLICANTS: Ling et al.		CONFIRMATION NO.: 7812

EXAMINER INITIAL	OTHER ART – NON PATENT LITERATURE DOCUMENTS (Include name of author, title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published.	
/R.N./	B99	"NHTSAR Research and Development, NRD-01. "EDR- NHTSA Event Data Recorder Program". NHTSA Event Data Recorder Program <http://www-nrd.nhtsa.dot.gov/departments/nrd-01/summaries/EDR.html>; last visited on 25 Oct. 2004, pp. 2.
/R.N./	B100	"Vetronix ETAS Group." Vetronix Corporation – Crash Data Retrieval System Frequently Asked Questions. Crash Data Retrieval System Frequently Asked Questions. <http://www.vetronix.com/diagnostics/cdr/faqs.html>; last visited on 25 Oct. 2004, pp. 5.
/R.N./	B101	"Mechanical Forensics Engineering Services, LLC (MFES). Mechanical Forensics: Vetronix CDR system" – Vetronix Crash Data Retrieval System <http://mfes.com/cdr.html>; last visited on 25 Oct. 2004, pp. 8.
/R.N./	B102	"AutoTap OBDII Diagnostic Scanner – AutoTap Product Information;<http://www.autotap.com/products.html>; last visited on 25 Oct. 2004, pp. 2.
/R.N./	B103	Carley, Larry. "Understanding OBDII: Past, Present & Future"© 2001; <http://hostingprod.com/@aa 1car.com/library/us7960bd.htm>; last visited on 25 Oct. 2004, pp. 6.
/R.N./	B104	Barkai, Joseph. "Vehicle Diagnostics – Are you Ready for the Challenge?" Society of Automotive Engineers, Inc. © 2001; pp. 5.
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EXAMINER /Robert Niquette/	DATE CONSIDERED 05/14/2011

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LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT		FILING DATE June 3, 2008	GROUP ART UNIT 3695
(use several sheets if necessary)	APPLICANT(S): Raymond S. Ling et al.		CONFIRMATION NO. 7812

REFERENCE DESIGNATION **U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER Number-Kind Code (if known)	DATE	NAME	CLASS/ SUBCLASS	FILING DATE
/R.N./	D1	US 6,064,299	05/16/2000	Lesesky et al.		
/R.N./	D2	US 6,411,203 B1	06/25/2002	Lesesky et al.		
/R.N./	D3	US 6,505,106 B1	01/07/2003	Lawrence et al.		
/R.N./	D4	US 6,529,723 B1	03/04/2003	Bentley		
/R.N./	D5	US 6,879,962 B1	04/12/2005	Smith et al.		

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER Number-Kind Code (if known)	DATE	COUNTRY	CLASS/ SUBCLASS	TRANSLATION YES OR NO

EXAMINER INITIAL	OTHER ART – NON PATENT LITERATURE DOCUMENTS (Include name of author, title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published.	

EXAMINER /Robert Niquette/	DATE CONSIDERED 05/14/2011

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(use several sheets if necessary)	APPLICANTS: Ling et al.		CONFIRMATION NO.: 7812

REFERENCE DESIGNATION **U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER Number-Kind Code (if known)	DATE	NAME	CLASS/ SUBCLASS	FILING DATE
/R.N./	C1	6,225,898 B1	05/01/2001	Kamiya et al.		

EXAMINER /Robert Niquette/	DATE CONSIDERED 05/17/2011

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

PLUS Search Results for S/N 12132487, Searched Mon May 16 09:17:27 EDT 2011

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

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3984121 69
4042259 69
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PLUS Search Results for S/N 12132487, Searched Mon May 16 09:17:29 EDT 2011

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

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Electronic Transmission

PATENT
Case No. 12654 / 42

I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office, Commissioner for Patents, via the EFS pursuant to 37 CFR § 1.8.

/James A. Collins/

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May 5, 2011

Date of Signature & Date of Transmission

Attorney Docket No. 12654/42

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

In re Application of:	Ling et al.	Examiner: Robert R. Niquette
Serial Number:	12/132,487	Group Art Unit: 3695
Title:	Vehicle Monitoring System	Confirmation No.: 7812

RESPONSE AND REQUEST FOR RECONSIDERATION

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Applicants respectfully request consideration of the following claims. The status of the claims is reflected in the listing that begins on page 2; remarks begin on page 26.

The listing of claims replaces all prior versions and listings of claims in this application.

Listing of Claims:

1. (Withdrawn, Amended) A risk management device comprising:

an automotive device that provides an interface that filters data that is sent and received across an in-vehicle bus by selectively acquiring vehicle data related to a level of insurable risk or safety of operation, the interface acquires the selected vehicle data from one or more in-vehicle sensors;

a memory that stores the selected vehicle data with relationship data within the vehicle that establishes a connection between the selected vehicle data and one or more risk factors, safety standards, or operating characteristics, together with a unique identifier and a user account; and

a wireless service provider interface that provides access to the selected vehicle data and relationship data retained in the memory, where the wireless service provider interface is responsive to a ~~wireless~~ request ~~from a remote user~~ to transfer the selected vehicle data and selected relationship data retained in the memory to a remote server ~~when a wireless service provider indicates a capacity to transfer the vehicle data and relationship data across a wireless network~~.

2. (Withdrawn) The risk management device of claim 1 where the wireless service provider interface is compliant with a wireless transaction facilitator that throttles the transmission rates across the wireless network based on an available bandwidth of the wireless network.

3. (Withdrawn) The risk management device of claim 1 further comprising a dynamic memory allocation processor that allocates a portion of the memory to retain a copy of a legacy version of firmware that comprises input/output instructions when an updated firmware is received through the wireless network and written to the memory, the dynamic memory allocation processor de-allocates the portion of the memory when an error-free version of the updated firmware is stored or installed in the risk management device.

4. (Withdrawn) The risk management device of claim 1 where the wireless network comprises a mobile broadband wireless network that provides full data exchange mobility to two or more vehicles.

5. (Withdrawn) The risk management device of claim 1 where the interface, the memory, and the wireless service provider interface are linked within a portable device.

6. (Withdrawn) The risk management device of claim 1 where the wireless service provider interface comprises a single-chip cellular baseband processor.

7. (Withdrawn) The risk management device of claim 6 where the single-chip cellular baseband processor is Global System for Mobile Communication compliant, Code Division Multiple Access compliant, or General Packet Radio Service compliant.

8. (Withdrawn) The risk management device of claim 6 where the single-chip cellular baseband processor is Global System for Mobile Communication compliant and General Packet Radio Service compliant.

9. (Withdrawn) The risk management device of claim 6 where the single-chip cellular baseband processor comprises integrated interface drivers that enable auxiliary components comprising loudspeakers, display, and memory modules to connect directly to the single-chip.

10. (Withdrawn) The risk management device of claim 1 where the wireless service provider interface comprises an embedded antenna element positioned adjacent to the interface and the memory.

11. (Withdrawn) The risk management device of claim 10 where the embedded antenna element comprises a circuit board element.

12. (Withdrawn) The risk management device of claim 1 where the wireless service provider interface is further responsive to a trigger event by transmitting an alert to a third

party when a driving incident occurs.

13. (Withdrawn) The risk management device of claim 12 where the driving incident comprises exceeding a speed threshold, traveling outside of a designated area, or a lock out condition.

14. (Withdrawn) The risk management device of claim 13 where the wireless service provider interface is further responsive to receive a communication from a third party and the alert comprises a text or an aural message.

15. (Withdrawn) The risk management device of claim 3 where the wireless service provider interface is compliant with two or more multiple packet architectures that are automatically detected and one or more multiple packet architectures that are automatically selected through two or more handshakes.

16. (Withdrawn) The risk management device of claim 15 where the automatic detection and automatic selection includes Internet Protocol roaming that maintains connectivity as the vehicle moves from a first coverage area of a selected network to a second coverage area of a second selected network.

17. (Withdrawn) The risk management device of claim 15 where the wireless service provider interface is responsive to a monitored event-driven request to transfer the selected vehicle data and selected relationship data retained in the memory to a remote server when the wireless service provider indicates the capacity to transfer data across the wireless network.

18. (Withdrawn) The risk management device of claim 15 where a unique identifier comprises a unique identifier to the risk management device.

19. (Withdrawn) The risk management device of claim 15 where a unique identifier comprises a unique vehicle identifier.

20. (Withdrawn) The risk management device of claim 15 further comprising a transceiver tuned to receive continuously transmitted trilateral encoded signals through a bandwidth that is separate from the wireless network.

21. (Withdrawn) A system that monitors data transferred among components within a vehicle that is used to determine one or more levels of risk or is used to determine a cost of insurance comprising:

a vehicle bus that sends and receives data between two or more in-vehicle controllers;

an in-vehicle monitor that filters the data that is sent and received across the vehicle bus by selectively polling one or more of the in-vehicle controllers to transmit vehicle data related to a level of risk in operating the vehicle, the selected vehicle data is acquired at a predetermined interval or upon an event;

a processor programmed to store the selected vehicle data in an in-vehicle memory inaccessible to the two or more in-vehicle controllers, the memory retains relationship data that links the selected vehicle data to a vehicle identifier and a wireless network;

a wireless transceiver configured to encrypt and encode the relationship data and the selectively acquired vehicle data and transmit the encoded data through a mobile communication network that provides access to a distributed network.

22. (Withdrawn) The system that monitors data transferred among components within a vehicle of claim 21 where the wireless transceiver is configured to transmit the encoded data through a pulse position protocol without varying the power level or phase of a transmitting signal.

23. (Withdrawn) The system that monitors data transferred among components within a vehicle of claim 21 where the wireless transceiver is compliant with a wireless transaction facilitator that throttles the transmission rates across the mobile communication network based on an available bandwidth of the mobile communication network.

24. (Withdrawn) The system that monitors data transferred among components within a vehicle of claim 21 further comprising a dynamic memory allocation processor that allocates a portion of the memory to retain a copy of a legacy version of firmware that

comprises input/output instructions when an updated firmware is transferred to the in-vehicle memory through the mobile communication network, the dynamic memory allocation processor de-allocates the portion of the in-vehicle memory when an error-free version of the updated firmware is stored or installed in the risk management system or when a copy of the legacy version of the software is restored.

25. (Withdrawn) The system that monitors data transferred among components within a vehicle of claim 21 where the mobile communication network comprises a mobile broadband communication network that provides full data exchange mobility to one, two or more vehicles in motion.

26. (Withdrawn) The system that monitors data transferred among components within a vehicle of claim 21 where the wireless service provider interface is compliant with two or more multiple packet architectures that are automatically detected and one or more multiple packet architectures that are automatically selected when a series of signals acknowledge that a communication or transfer of information may occur are received by the wireless transceiver.

27. (Withdrawn) The system that monitors data transferred among components within a vehicle of claim 21 where the wireless transceiver is responsive to an internal event-driven request to transfer the selected vehicle data and the selected relationship data retained in the in-vehicle memory to a remote server when the wireless service provider indicates an available channel capacity to transfer the selected vehicle data and the selected relationship data across the mobile communication network within a predetermined time period.

28. (Withdrawn) The system that monitors data transferred among components within a vehicle of claim 21 further comprising a location processor that processes external navigation signals that are stored in the in-vehicle memory and are transmitted through the mobile communication network.

29. (Withdrawn) The system that monitors data transferred among components within a vehicle of claim 21 further comprising a receiver tuned to receive continuously transmitted trilateral encoded signals through a bandwidth that is separate from the mobile communication network.

30. (Withdrawn) The risk management system of claim 21 where the in-vehicle monitor, the processor, and the wireless transceiver are linked within a portable device.

31. (Withdrawn) The risk management system of claim 21 where the wireless transceiver comprises a single-chip cellular baseband processor.

32. (Withdrawn) The risk management system of claim 31 where the single-chip cellular baseband processor is Global System for Mobile Communication compliant, Code Division Multiple Access compliant, or General Packet Radio Service compliant.

33. (Withdrawn) The risk management system of claim 31 where the single-chip cellular baseband processor is Global System for Mobile Communication compliant and General Packet Radio Service compliant.

34. (Withdrawn) The risk management system of claim 31 where the single-chip cellular baseband processor comprises integrated interface drivers that enable auxiliary components comprising loudspeakers, display, and memory modules to connect directly to the single-chip.

35. (Withdrawn) The risk management system of claim 21 where the wireless transceiver comprises an embedded antenna element positioned adjacent to the in-vehicle monitor, the processor, and the memory.

36. (Withdrawn) The risk management system of claim 35 where the embedded antenna element comprises a circuit board element.

37. (Withdrawn) The risk management system of claim 21 where the wireless transceiver

is further configured to respond to a trigger event by transmitting an alert to a third party when a driving incident occurs.

38. (Withdrawn) The risk management system of claim 37 where the driving incident comprises exceeding a speed threshold, traveling outside of a designated area, or a lock out condition.

39. (Withdrawn) The risk management system of claim 38 where the wireless transceiver is further configured to receive a communication from a third party and the alert comprises a text or an aural message.

40. (Amended) A system that monitors and facilitates a review of data collected from a vehicle that is used to determine a level of safety or cost of insurance comprising:

a processor that collects vehicle data from a vehicle bus that represents aspects of operating the vehicle;

a memory that stores selected vehicle data related to a level of safety or an insurable risk in operating a vehicle;

a wireless transmitter configured to transfer the selected vehicle data retained within the memory to a distributed network ~~when a wireless network indicates a capacity to receive the selected vehicle data~~and a server; ~~and~~

a database operatively linked to the server to store the selected vehicle data transmitted by the wireless transmitter, the database comprising a storage system remote from the wireless transmitter and the memory comprising records with operations for searching the records and other functions;

~~monitor to display~~ where the server is configured to process selected vehicle data that represents one or more aspects of operating the vehicle with data that reflects how the selected vehicle data affects a premium of an insurance policy, safety or level of risk; and

where the server is further configured to generate a rating factor based on the selected vehicle data stored in the database.

41. (Amended) ~~A~~ The system that monitors and facilitates a review of data collected from a vehicle of claim 40 where the wireless transmitter is configured to transfer the

selected vehicle data retained within the memory through a pulse position protocol without varying the power level or phase of a transmitting signal.

42. (Original) The system that monitors and facilitates a review of data collected from a vehicle of claim 40 where the wireless transmitter is compliant with a wireless transaction facilitator that throttles the transmission rates across the wireless network based on an available bandwidth of the wireless network.

43. (Original) The system that monitors and facilitates a review of data collected from a vehicle of claim 40 further comprising a dynamic memory allocation processor that allocates a portion of the memory to retain a copy of a legacy version of firmware that comprises input/output instructions when an updated firmware is transferred to the memory through the wireless network, the dynamic memory allocation processor de-allocates the portion of the memory when an error-free version of the updated firmware is stored or installed in the system or when a copy of the legacy version of the software is restored to control the processor of the system.

44. (Original) The system that monitors and facilitates a review of data collected from a vehicle of claim 40 where the wireless network comprises a mobile broadband communication network that provides full data exchange mobility up to vehicle speeds of about 100 miles per hour.

45. (Original) The system that monitors and facilitates a review of data collected from a vehicle of claim 40 where the wireless transmitter is compliant with two or more multiple packet architectures that are automatically detected and one or more multiple packet architectures that are automatically selected when a series of signals acknowledge that a communication or transfer of information or data may occur.

46. (Original) The system that monitors and facilitates a review of data collected from a vehicle of claim 40 where the wireless transmitter is responsive to an in-vehicle event-driven request to transfer the selected vehicle data retained in the memory to a remote server when the wireless network indicates an available channel capacity to transfer the

selected vehicle data across the wireless network.

47. (Original) The system that monitors and facilitates a review of data collected from a vehicle of claim 40 further comprising a receiver tuned to receive continuously transmitted trilateral encoded signals through a bandwidth that is separate from the wireless network.

48. (Original) The risk management system of claim 40 where the processor, the memory, and the wireless transmitter are in communication within a portable device.

49. (Original) The risk management system of claim 40 where the wireless transmitter comprises a single-chip cellular baseband processor.

50. (Original) The risk management system of claim 49 where the single-chip cellular baseband processor is Global System for Mobile Communication compliant, Code Division Multiple Access compliant, or General Packet Radio Service compliant.

51. (Original) The risk management system of claim 49 where the single-chip cellular baseband processor is Global System for Mobile Communication compliant and General Packet Radio Service compliant.

52. (Original) The risk management system of claim 49 where the single-chip cellular baseband processor comprises integrated interface drivers that enable auxiliary components comprising loudspeakers, display, and memory modules to connect directly to the single-chip.

53. (Original) The risk management system of claim 40 where the wireless transmitter comprises an embedded antenna element adjacent to the processor and the memory.

54. (Original) The risk management system of claim 53 where the embedded antenna element comprises a circuit board element.

55. (Original) The risk management system of claim 40 where the wireless transmitter is further configured to respond to a trigger event by transmitting an alert to a third party when a driving incident occurs.

56. (Original) The risk management system of claim 55 where the driving incident comprises exceeding a speed threshold, traveling outside of a designation, or a lock out condition.

57. (Original) The risk management system of claim 56 where the wireless transmitter comprises a transceiver configured to receive a communication from a third party and the alert comprises a text or an aural message.

58. (Withdrawn, Amended) A system that monitors data collected from a vehicle bus that is used to determine a cost of insurance comprising:

a data monitor that monitors a vehicle bus that transfers data among electronic components within a vehicle;

a storage device that receives vehicle data from the vehicle bus to a first memory within the vehicle~~, the storage device retains content when not connected to an external power source~~;

a second memory within the storage device that receives metadata that is logically linked to the vehicle data written to the storage device within the vehicle each time the vehicle data is written to the storage device;

a ~~first~~ processor ~~programmed to link~~ in communication with the storage device through a network of computers associated with an identifying number on a ~~publicly accessible~~ distributed network ~~and is accessible through software retained in a computer readable storage medium that allows a user to access insurance files related to an existing insurance policy or a renewal of an insurance policy and allows the user to access other software related to the insurance files~~;

a database operatively linked to the storage device to store the vehicle data and the metadata written to the storage device, the database comprising a storage system comprising records with operations for searching and other functions; and

where the vehicle data is accessible through software retained in a computer readable storage medium that allows a user to access insurance files related to an existing insurance policy or a renewal of an insurance policy;

where the ~~a second~~ processor is programmed to generate a rating factor based on the vehicle data and metadata written to the database~~where the second processor is programmed to calculate a premium of an insurance policy, or a surcharge or a discount on the premium of the insurance policy, based on the vehicle data and the metadata stored in the database~~.

59. (Withdrawn) The system of claim 58 where the second processor is further programmed to generate a display in which a vehicle operator may review the vehicle data stored in the database related to the operator's vehicle accelerations, decelerations, seat belt usage, vehicle speed, time of day, date, location, identity, vehicle identity, tire pressure, telephone usage, entertainment status, vehicle mileage, or turn signal usage.

60. (Withdrawn) The system of claim 58 where the second processor is further programmed to compare a category of the vehicle data to a similar category of data monitored in other vehicles.

61. (Withdrawn) The system of claim 58 where the second processor and the database reside at a Web site operatively linked to the first processor through the Internet, the Web site being programmed to deliver customized insurance data related to a usage based insurance and an operator of the vehicle.

62. (Withdrawn) The system of claim 58 where the second processor is programmed to determine a cost of renewing insurance based on the vehicle data and metadata written to the database.

63. (Withdrawn) The system of claim 58 where the second processor is programmed to determine a prospective cost of insurance based on receiving the vehicle data and meta data written to the storage device at a Web site.

64. (Withdrawn) The system of claim 58 further comprising a third processor in communication with the data monitor, the third processor integrated within an electronic management system within the vehicle.

65. (Withdrawn) The system of claim 58 where the data monitor is compliant with an OBD protocol or an SAE J-1962 protocol.

66. (Withdrawn) The system of claim 58 where the second processor is programmed to access the database of vehicle data and metadata and process at least a portion of the vehicle data to generate a cost of insurance.

67. (Withdrawn) The system of claim 58 where the second processor is programmed to access the database of vehicle data and metadata and process at least a portion of the vehicle data to generate a prospective cost of insurance.

68. (Withdrawn) The system of claim 67 where the cost of insurance comprises a cost of renewing an existing insurance policy.

69. (Withdrawn) The system of claim 67 where the vehicle data is generated by one or more devices that monitor, measure, and control the operation of the vehicle.

70. (Withdrawn) A data logging device that tracks the operation of a vehicle, comprising:

a storage device comprising a first memory portion that may be read from and is written to in a vehicle and a second memory portion that may be read from and is written to in the vehicle, the second memory portion retains attributes of datum or data logically associated with the data stored in the first memory portion;

a processor that reads data from an in-vehicle automotive bus that transfers data from vehicle sensors to other automotive components, the processor writes data that reflect a level of safety to the first memory portion and the second memory portion; and

a communication device that links the storage device to a network of computers associated with a publicly accessible distributed network, the communication device is accessible through software retained on a computer readable storage medium that allows

a user to access insurance files related to an insurance policy and allows the user to access other software related to the insurance files,

where the first memory portion and the second memory portion retain data when an external power source is not coupled to the first memory portion and the second memory portion, respectively, and are inaccessible to an in-vehicle OEM system or an automotive scan tool.

71. (Withdrawn) A data logging device that tracks the operation of a vehicle, comprising:

a first storage device comprising a first memory portion that may be read from and is written to in a vehicle;

a second storage device comprising a second memory portion that may be read from and is written to in the vehicle that retains attributes of data logically associated with one or more data elements stored in the first storage device;

a central processing unit that reads data from an automotive bus that transfers data from vehicle sensors to other automotive components and writes data to the first memory portion;

a circuit that generates a steady stream of pulses that synchronizes the transfer of data from the automotive bus to the first memory portion; and

a communication device that links the storage device to a network of computers associated with an identifying number on a publicly accessible distributed network and is accessible through software that allows a user to access insurance files related to an existing insurance policy or a renewal of an insurance policy and allows the user to access other software related to the insurance files,

where the first memory portion and the second memory portion retain data when an external power source is not coupled to the first memory portion and the second memory portion, respectively.

72. (Withdrawn) The data logging device of claim 71 where the circuit that generates the steady stream of pulses is remote from the vehicle.

73. (Withdrawn) The data logging device of claim 72 where the circuit that generates the steady stream of pulses generates the attributes of data associated with one or more data items stored in the first storage device.

74. (Withdrawn) A data logging device that tracks the operation of a vehicle, comprising:

a storage device comprising a first memory portion that is read from and is written to in a vehicle and a second memory portion that is read from and is written to in the vehicle that retains attributes of data logically associated with one or more data items stored in the first storage device;

a central processing unit that reads data from an automotive bus that transfers data from vehicle sensors to other automotive components and writes data to the first memory portion; and

a wireless communication device that links the storage device to a network of computers associated with an identifying number on a publicly accessible distributed network and is accessible through software retained on a computer readable storage medium that allows a user to access insurance files related to an existing insurance policy or a renewal of an insurance policy and allows the user to access other software related to the insurance files,

where the first memory portion and the second memory portion retain data when an external power source is not coupled to the first memory portion and the second memory portion, respectively; and

where the software is configured to allow a party to change some or all of the data written to the storage device and where a second software retained on a computer readable storage medium remote from the vehicle is configured to allow the party to transmit the unchanged data and transmit the changed data to a Web server at the party's discretion.

75. (Withdrawn) A device that monitors the operation of a vehicle, comprising:

a vehicle bus that transfers data from vehicle sensors within a vehicle;

a first processor in communication with the vehicle bus and operative to track one or more of vehicle speed data, position data, and aggressive driving behavior data from the vehicle bus;

a global positioning receiver in communication with the first processor that processes position data, time data, and velocity data;

an on board vehicle diagnostic connector interfaced to the vehicle bus and the first processor; and

a data logger interfaced to the on board diagnostic connector and operative to receive the one or more of vehicle speed data, position data, and aggressive driving behavior data in a memory in the data logger,

where the data logger is operative to upload the one or more of vehicle speed data, position data, and aggressive driving behavior data from the memory to a second processor remote from the first processor,

where the second processor is programmed to generate Internet documents based on the uploaded data and an assigned level of risk.

76. (Withdrawn) The device of claim 75 where the aggressive driving behavior data comprises data that exceeds a first predetermined threshold or does not exceed a second predetermined threshold.

77. (Withdrawn) The device of claim 75 where the data logger comprises a machine interface operative to communicate with the first processor and the second processor and a virtual interface operative to interface a computer.

78. (Withdrawn) The device of claim 75 where the data logger is operative to store metadata in a second memory of the data logger each time any of the vehicle speed data, the position data, or aggressive driving behavior data is written to the memory.

79. (Withdrawn) The device of claim 75 where the data logger uploads vehicle speed data or position data to an Internet site.

80. (Withdrawn) The device of claim 75 where the data logger uploads vehicle speed data, aggressive driving behavior data, and/or position data to an Internet site.

81. (Withdrawn) The device of claim 75 where the data logger comprises a removable

storage device and a non-removable storage device.

82. (Withdrawn) A system that determines a cost of insurance comprising:

a device that writes and records one or more characteristics related to a level of risk of operating a vehicle through an automotive communication link;

means for a party associated with the vehicle to review the recorded characteristics and review how the recorded characteristics affect a vehicle safety, a level of risk, or a cost of insurance;

means to enable the transmission of the recorded characteristics to an insurer through a wireless network;

means to transmit the recorded characteristics to the insurer automatically through a distributed network from the vehicle;

means for assigning a level of risk to the operation of the vehicle based on the recorded characteristics; and

means for determining a cost of an insurance policy based on the assigned level of risk.

83. (Withdrawn) The system of claim 82 where the means for assigning the level of risk to the operation of the vehicle based on the recorded characteristics and the means for the party associated with the vehicle to review the recorded characteristics and review how the recorded characteristics affect a cost of insurance reside on a computer remote from the publicly accessible distributed network and remote from a Web server.

84. (Withdrawn) The system of claim 82 further comprising software retained on a computer readable storage medium that compares at least one of the recorded characteristics to at least one characteristic of one or more parties.

85. (Withdrawn) The system of claim 82 further comprising software retained on a computer readable storage medium that compares at least one of the recorded characteristics to an averaged characteristic of a plurality of parties.

86. (Withdrawn) The system of claim 82 further comprising a wireless interface

configured to link the device that writes and records characteristics related to the level of risk of operating the vehicle to the means for the party associated with the vehicle to review the recorded characteristics and review how the recorded characteristics affect the cost of insurance.

87. (Withdrawn) The system of claim 82 further comprising a graphical user interface in communication with the means for the party associated with the vehicle to review the recorded characteristics and review how the recorded characteristics affect a cost of insurance.

88. (Withdrawn) The system of claim 82 where the device that writes and records characteristics related to the level of risk of operating the vehicle through the automotive communication link comprises a portable plug-in module that does not lose its content when the portable plug-in module is not connected to an external power source and the portable plug-in module comprises a storage medium that may only be erased in blocks.

89. (Withdrawn) The system of claim 82 further comprising an application that translates data received from the device that writes and records characteristics related to the level of risk of operating the vehicle from a first format to a second format and transmits the translated data to an insurer's Web site that is remote from the application by specifying a protocol to transmit the translated data and by identifying a server that serves the insurer's Web site.

90. (Withdrawn) The system of claim 89 where the application comprises software retained on a computer readable storage medium executed by a processor that generates user-centric screens that summarize a user's driving behavior by processing one or more types of coded data received through a second separate wireless communication link, where the software is configured to allow the party to change a portion of the data or change all of the data transmitted to the insurer's Web site.

91. (Withdrawn) The system of claim 82 where the means for determining the cost of the insurance policy based on the assigned level of risk comprises means for determining a

prospective cost adjustment for an existing insurance policy or a renewal of an insurance policy based on the assigned level of risk.

92. (Withdrawn) A method of monitoring, communicating, and reviewing data collected from a vehicle that is used to determine a cost of insurance comprising:

monitoring one or more devices that monitor, measure, or control the operation of the vehicle;

writing data from one or more selected devices within a vehicle to an in-vehicle storage device, the data being related to the level of risk of operating the vehicle;

transmitting a portion of the data written to the storage device through a wireless link to a server that is remote from the vehicle by specifying a communication protocol to transmit the portion of data and by identifying a destination; and

calculating a premium of an insurance policy based on the portion of data transmitted through the wireless link.

93. (Withdrawn) The method of claim 92 further comprising transmitting, to a party associated with the vehicle, data associated with a premium of the insurance policy, a surcharge to the premium of the insurance policy or a discount to the premium of the insurance policy.

94. (Withdrawn) The method of claim 93 further comprising developing an operational profile of an insured party that comprises comparing data about the insured party with data from one or more other vehicle operators based on a selected characteristic of some of the one or more other vehicle operators.

95. (Withdrawn) The method of claim 94 further comprising classifying groups of vehicle operators based on one or more characteristics of the operators.

96. (Withdrawn) The method of claim 95 where the premium for the insurance policy comprises a premium for renewing the insurance policy.

97. (Withdrawn) The method of claim 95 where the premium for the insurance policy

comprises a current or prospective premium for an existing insurance policy.

98. (Withdrawn) The method of claim 93 further comprising writing metadata about each of the data written to the storage device and transmitting the metadata written to the storage device through the publicly accessible distributed network to the server that is remote from the vehicle.

99. (Withdrawn) The method of claim 92 further comprising calculating a current or a prospective cost of insurance based on a portion of data written to the storage device.

100. (Withdrawn) The method of claim 92 further comprising transmitting a portion of the data written to the storage device to a publicly accessible distributed network through the wireless network that provides substantial mobility up to vehicle speeds of about 55 miles per hour.

101. (Withdrawn) The method of claim 92 further comprising developing an operational profile of an insured party comprising characteristics related to a level of risk of operating a vehicle.

102. (Withdrawn) The method of claim 101 where the operational profile further comprises characteristics associated with a driver of the vehicle.

103. (Withdrawn) The method of claim 92 where the storage device is operative to interface an on-board diagnostic port coupled to a vehicle bus that is coupled to a first processor local to the vehicle and is further operative to interface a second processor remote from the vehicle.

104. (Withdrawn) A method of monitoring and reviewing data collected from a vehicle bus that is used to determine a cost of insurance comprising:

monitoring a vehicle bus that transfers data among electronic components within a vehicle;

writing data received from the vehicle bus to a device that retains content when not connected to an external power source at a rate the data is received;

executing a first program that enables the wireless transmission of a portion of the data written to the device through a publicly accessible network to a server that is remote from the vehicle by specifying a communication protocol to transmit the portion of data;

executing a second program that calculates a premium of an insurance policy based on the portion of data; and

executing a third program that generates a document summarizing the premium of the insurance policy;

where the first program, the second program, and the third program are stored on a distributed computer readable storage medium.

105. (Withdrawn) The method of claim 104 where writing data comprises logging data in a plug-in module configured to interface a processor coupled to an on board diagnostic port in the vehicle, where the plug-in module is operative to store a number of miles traveled in a predetermined time period.

106. (Withdrawn) The method of claim 104 where writing data comprises writing vehicle speed data, vehicle acceleration data, vehicle deceleration data, turn signal usage data, seat belt usage data, time of day data, date data, location data, operator identity data, vehicle identity data, tire pressure data, telephone usage data, entertainment status data, revolutions per minute data, trip start data, trip end data, relative speed data, or vehicle mileage data in the device.

107. (Withdrawn) The method of claim 106 where writing data further comprises writing data that indicates a level of willingness of a party to monitor an aspect of the vehicle operation.

108. (Withdrawn) The method of claim 106 where writing data further comprises writing data that records a connection event of the device or a disconnection event of the device.

109. (Withdrawn) The method of claim 104 where the second program comprises

software that enables the user to observe a vehicle's position determined by processing two kinds of coded signals received from a source external to the vehicle.

110. (Withdrawn) The method of claim 104 where the calculation of the premium of the insurance policy, or a surcharge or a discount to the premium of the insurance policy, is determined only when requested by a party associated with the vehicle or a party associated with the insurance policy.

111. (Withdrawn) The method of claim 104 further comprising processing the data received from the vehicle bus and displaying a cost of insurance based on the data written to the device.

112. (Withdrawn) The method of claim 104 further comprising modifying the data received from the vehicle bus and processing the modified data to determine a cost of insurance based on the modified data when requested by a party associated with the vehicle or a party associated with the insurance policy, where the data comprises vehicle speed data, vehicle acceleration data, vehicle deceleration data, turn signal usage data, seat belt usage data, time of day data, date data, location data, operator identity data, vehicle identity data, tire pressure data, telephone usage data, entertainment status data, revolutions per minute data, trip start data, trip end data, relative speed data, or vehicle mileage data.

113. (Withdrawn) The method of claim 104 further comprising receiving a continuously transmitted code from a communication link remote from the vehicle bus and remote from the publicly accessible network and writing a portion of the continuously transmitted code in the device.

114. (Withdrawn) The method of claim 113 further comprising receiving a portion of the data written to the device at an insurer's Web site, and transmitting second data based on the received data to a client application that generates a Web document that comprises variable content.

115. (Withdrawn) The method of claim 104 further comprising receiving software updates to the device through a Web site and the wireless network.

116. (Withdrawn) A method of monitoring and reviewing data collected from a vehicle that is used to determine a cost of insurance comprising:

collecting vehicle data from a vehicle bus that represents aspects of operating the vehicle;

writing the collected vehicle data to a storage device inaccessible to original equipment manufacturer's systems;

transferring the collected vehicle data written to the storage device to a processor that is remote from the vehicle; and

displaying the collected vehicle data that represents the aspect of operating the vehicle with data that reflects how the collected vehicle data affects a safety score, rating factor or a premium or an adjustment to a premium of an insurance policy.

117. (Withdrawn) The method of claim 116 further comprising entering additional vehicle data that reflects a different aspect of operating the vehicle and displaying how the additional vehicle data would affect the safety of operating a vehicle or the premium of the insurance policy.

118. (Withdrawn) The method of claim 116 where collecting vehicle data comprises reading powertrain sensor data from a vehicle bus that transfers data from electronic components of the vehicle.

119. (Withdrawn) The method of claim 116 where collecting data further comprises reading sensor data through an on board diagnostic connector of the vehicle.

120. (Withdrawn) The method of claim 116 further comprising determining a rating factor based on an analysis of the collected vehicle data.

121. (Withdrawn) The method of claim 116 further comprising analyzing the collected vehicle data and determining a safety score based on the analysis of the collected vehicle

data.

122. (Withdrawn) The method of claim 116 further comprising receiving the collected vehicle data, determining an insurance risk rating, and analyzing the collected vehicle data to determine the premium of the insurance policy or adjust the premium of the insurance policy, where the collected vehicle data comprises mileage data and the pricing is based, in whole or in part, on miles driven.

123. (Withdrawn) The method of claim 117 where entering additional vehicle data further comprises manually entering data or manually modifying data through a graphical user interface.

124. (Withdrawn) The method of claim 116 where the act of displaying the cost data comprises generating a document that summarizes the premium of the insurance policy or generating a document that summarizes a surcharge or discount to the premium of the insurance policy.

125. (Withdrawn) The method of claim 116 further comprising executing software that is operative to receive the collected vehicle data that represents aspects of operating the vehicle at a Web server; generating a Web page that comprises a risk rating and portions of the collected vehicle data at the Web server; and transmitting the Web page to a computer remote from the Web server and the vehicle by specifying a protocol to transmit the data and by identifying the computer.

126. (Withdrawn) The method of claim 125 further comprising executing software at the computer remote from the vehicle and the Web server that allows the operator to change data related to the operation of the vehicle; transmitting the changed data to the Web server by specifying a protocol to transmit the changed data and by identifying the Web server; generating a second Web page that comprises updated insurance cost data based on the changed data; and transmitting the second Web page to the computer remote from the Web server and the vehicle by specifying a protocol to transmit the updated insurance cost data and by specifying an address of the computer.

127. (Withdrawn) The method of claim 126 where the second Web page comprises a second risk rating.

128. (Withdrawn) A method of providing a cost, or an adjustment to the cost, of an insurance policy comprising:

monitoring a vehicle bus that transfers data among electronic components within a vehicle;

writing mileage data from the vehicle bus to a device that retains content when not connected to an external power source at a predetermined interval or at a same rate the mileage data is received;

executing a first program retained on a computer readable storage medium that enables a user to wirelessly transmit the mileage data written to the device from the vehicle through a publicly accessible network to a server that is remote from the vehicle and the device; and

determining a cost of insurance based on the mileage data transmitted to a second program resident to the server.

129. (Withdrawn) The method of claim 128 where the cost of insurance is further based on one or more additional sets of data selected from the group consisting of: vehicle speed data, brake data, turn signal data, seat belt usage data, clock data, vehicle user data, and vehicle identification data.

130. (Withdrawn) The method of claim 129 where the cost of insurance is further based on any one or more of vehicle acceleration data, vehicle deceleration data, location data, environmental conditions data, relative speed data, or relative distance data.

131. (New) The system that monitors and facilitates a review of data collected from a vehicle of claim 40 where the server is further configured to calculate an insured's premium under the insured's insurance policy based on the rating factor, or a surcharge or a discount to the insured's premium, based on the rating factor.

132. (New) The system that monitors and facilitates a review of data collected from a vehicle of claim 40 where the server is further configured to process selected vehicle data that represents one or more aspects of operating the vehicle with data that reflects how the selected vehicle data affects an insured's premium under an insured's insurance policy.

133. (Withdrawn, New) The system of claim 58 where the processor is further programmed to calculate a premium of an insurance policy, or a surcharge or a discount to the premium of the insurance policy, based on the vehicle data and the metadata stored in the database.

134. (Withdrawn, New) The system of claim 58 where the processor comprises a plurality of processors.

REMARKS

Election/Restriction

Applicants elect to prosecute claims 40 – 57 designated to class 3, any claims that are generic and new claims 131 and 132 that are added to the application or may be added to class 3. Claims 1-39 and 58-130, 133, and 134 are withdrawn. Applicants request rejoinder of these claims upon withdrawal of the Restriction Requirement.

Applicants traverse the Restriction Requirement because it is improper. If the continued examination of the claims does not create a "serious burden" on the Office, then a Restriction Requirement against those claims is improper. M.P.E.P. § 803. M.P.E.P. § 803 states that "[i]f the search and examination of ***all the claims*** in an application can be made without serious burden, the examiner ***must examine them*** on the merits, even though they include claims to independent or distinct inventions."

To justify its "serious burden" contention, the Office Action focuses solely on two classes of claims. It ***ignores*** seventy-five percent of the claims that it designates into eleven other "classes." Without support, the Restriction Requirement adopts a ***presumption*** that assumes that the prior art search for class one will not be usable in class two. But, in the very next sentence, the Office Action questions its own ***presumption*** by concluding a search for class two is usable in class one. The Office Action does not address the serious burden requirement that applies to all of the classes. A serious burden must be shown for all of the classes the Office Action designates.

The similarities between the "classes" are also shown by Office Action's designation of all of the claims into one class (e.g., class 705), followed by its designation of all of the claims into one subclass (subclass 4). Since the classifications are the same and the field of search is the same, the Office Action cannot support a ***presumption that assumes*** that there is a "***serious*** burden" to examining the claims. Moreover, the Office Action should not ignore the classes that it designated but were not shown to be a serious burden. Accordingly, Applicants respectfully submit that the Election/Restriction requirement set forth in the Office Action is improper and request that the Election/Restriction requirement be withdrawn.

Conclusion

Applicants request a telephone conference if the Examiner believes a telephone conference would advance prosecution. Applicants' representative may be reached at 312.321.4200.

Respectfully submitted,

BRINKS HOFER GILSON & LIONE
Customer No. 00757
312-321-4200

/James A. Collins/
James A. Collins
Registration No. 43,557

Electronic Patent Application Fee Transmittal

Application Number:	12132487
Filing Date:	03-Jun-2008
Title of Invention:	VEHICLE MONITORING SYSTEM
First Named Inventor/Applicant Name:	Raymond Scott Ling
Filer:	James A. Collins
Attorney Docket Number:	12654/42

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Claims in excess of 20	1202	4	52	208
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
		Total in USD ($)		**208**

Electronic Acknowledgement Receipt

EFS ID:	10031692
Application Number:	12132487
International Application Number:	
Confirmation Number:	7812
Title of Invention:	VEHICLE MONITORING SYSTEM
First Named Inventor/Applicant Name:	Raymond Scott Ling
Customer Number:	10999
Filer:	James A. Collins/Maggie Pieczonka
Filer Authorized By:	James A. Collins
Attorney Docket Number:	12654/42
Receipt Date:	05-MAY-2011
Filing Date:	03-JUN-2008
Time Stamp:	17:28:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$208
RAM confirmation Number	3908
Deposit Account	231925
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees) Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees) Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	transforresponse.PDF	42665 1bc495596cde7d3d12904387706eb60b50db93d2	no	1
Warnings:					
Information:					
2		response2.PDF	1241689 9be48f3a3b85a099e1835a4191d47006654d8912	yes	28

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	26
	Applicant Arguments/Remarks Made in an Amendment	27	28

Warnings:					
Information:					
3	Fee Worksheet (PTO-875)	fee-info.pdf	30046 105f0a12f314828b1adfaf546f3109eaa69d4ecb	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	1314400	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

CERTIFICATE OF EFS FILING UNDER 37 CFR §1.8

I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office, Commissioner for Patents, via the EFS pursuant to 37 CFR §1.8 on the below date:

Date: May 5, 2011 Name: James A. Collins Signature: /James A. Collins/

BRINKS HOFER GILSON &LIONE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Appln. of:	Raymond S. Ling et al.		
Appln. No.:	12/132,487	Examiner:	Robert R. Niquette
Filed:	June 3, 2008	Art Unit:	3695
For:	VEHICLE MONITORING SYSTEM	Conf. No.:	7812
Attorney Docket No.:	12654/42		

TRANSMITTAL

Mail Stop Amendment
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Attached is/are:

☒ Transmittal and Response and Request for Reconsideration.

Fee calculation:

☐ No additional fee is required.

☐ Small Entity.

☐ An extension fee in an amount of $_____ for a ____- month extension of time under 37 CFR § 1.136(a).

☐ A petition or processing fee in an amount of $_____ under 37 CFR § 1.17(___) .

☐ An additional filing fee has been calculated as shown below:

						Small Entity			Not a Small Entity	
	Claims Remaining After Amendment		Highest No. Previously Paid For	Present Extra		Rate	Add'l Fee	OR	Rate	Add'l Fee
Total	134	Minus	130	4		x $26=			x $52=	208
Indep.		Minus				x 110=			x $220=	
First Presentation of Multiple Dep. Claim						+$195=			+ $390=	
						Total	$		Total	$

Fee payment:

☐ Please charge Deposit Account No. 23-1925 in the amount of $208.00 for Claims.

☐ Payment by credit card in the amount of $_____ (Form PTO-2038 is attached).

☒ The Director is hereby authorized to charge payment of any additional filing fees required under 37 CFR § 1.16 and any patent application processing fees under 37 CFR § 1.17 associated with this paper (including any extension fee required to ensure that this paper is timely filed), or to credit any overpayment, to Deposit Account No. 23-1925.

Respectfully submitted,

May 5, 2011
Date

/James A. Collins/
James A. Collins (Reg. No. 43,557)

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
12/132,487	06/03/2008	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	05/05/2011	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 134	Minus	** 130	= 4	X $ =		OR	X $52=	208
	Independent (37 CFR 1.16(h))	* 13	Minus	***13	= 0	X $ =		OR	X $220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	**208**

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/STANLEY JORDAN/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/132,487	06/03/2008	Raymond Scott Ling	12654/42	7812

10999 7590 04/13/2011

Progressive Casualty/BHGL
P.O. Box 10395
Chicago, IL 60610

EXAMINER	
NIQUETTE, ROBERT R	
ART UNIT	PAPER NUMBER
3695	

MAIL DATE	DELIVERY MODE
04/13/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	12/132,487	LING ET AL.	
	Examiner	Art Unit	
	ROBERT R. NIQUETTE	3695	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 August 2008*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is 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.

Disposition of Claims

4)☒ Claim(s) *1-130* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-130* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

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

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-20, drawn to:

an automotive device that provides an interface that filters data that is sent and received across an in-vehicle bus by selectively acquiring vehicle data related to a level of insurable risk or safety of operation, the interface acquires the selected vehicle data from one or more in-vehicle sensors;

a memory that stores the selected vehicle data with relationship data within the vehicle that establishes a connection between the selected vehicle data and one or more risk factors, safety standards, or operating characteristics, together with a unique identifier and a user account; and a wireless service provider interface that provides access to the selected vehicle data and relationship data retained in the memory, where the wireless service provider interface is responsive to a wireless request from a remote user to transfer the selected vehicle data and selected relationship data retained in the memory to a remote server when a wireless service provider indicates a capacity to transfer the vehicle data and relationship data across a wireless network, classified in class 705, subclass 4.

II. Claims 21-39, drawn to:

a vehicle bus that sends and receives data between two or more in-vehicle controllers;

an in-vehicle monitor that filters the data that is sent and received across the vehicle bus by selectively polling one or more of the in-vehicle controllers to transmit vehicle data related to a level of risk in operating the vehicle, the selected vehicle data is acquired at a predetermined interval or upon an event;

a processor programmed to store the selected vehicle data in an in-vehicle memory inaccessible to the two or more in-vehicle controllers, the memory retains relationship data that links the selected vehicle data to a vehicle identifier and a wireless network;

a wireless transceiver configured to encrypt and encode the relationship data and the selectively acquired vehicle data and transmit the encoded data through a mobile communication network that provides access to a distributed network, classified in class 705, subclass 4.

III. Claims 40-57, drawn to:

a processor that collects vehicle data from a vehicle bus that represents aspects of operating the vehicle;

a memory that stores selected vehicle data related to a level of safety or an insurable risk in operating a vehicle;

a wireless transmitter configured to transfer the selected vehicle data retained within the memory to a distributed network when a wireless network indicates a capacity to receive the selected vehicle data; and

a monitor to display the selected vehicle data that represents one or more aspects of operating the vehicle with data that reflects how the selected vehicle data affects a premium of an insurance policy, safety or level of risk, classified in class 705, subclass 4.

IV. Claims 58-69, drawn to:

a data monitor that monitors a vehicle bus that transfers data among electronic components within a vehicle;

a storage device that receives vehicle data from the vehicle bus to a first memory within the vehicle, the storage device retains content when not connected to an external power source;

a second memory within the storage device that receives metadata that is logically linked to the vehicle data written to the storage device within the vehicle each time the vehicle data is written to the storage device;

a first processor programmed to link the storage device to a network of computers associated with an identifying number on a publicly accessible distributed network and is accessible through software retained in a computer readable storage medium that allows a user to access insurance files related to an existing insurance policy or a

renewal of an insurance policy and allows the user to access other software related to the insurance files;

a database operatively linked to the storage device to store the vehicle data and the metadata written to the storage device, the database comprising a storage system comprising records; and a second processor programmed to generate a rating factor based on the vehicle data and metadata written to the database;

where the second processor is programmed to calculate a premium of an insurance policy, or a surcharge or a discount on the premium of the insurance policy, based on the vehicle data and the metadata stored in the database, classified in class 705, subclass 4.

V. Claim 70, drawn to:

a storage device comprising a first memory portion that may be read from and is written to in a vehicle and a second memory portion that may be read from and is written to in the vehicle, the second memory portion retains attributes of datum or data logically associated with the data stored in the first memory portion;

a processor that reads data from an in-vehicle automotive bus that transfers data from vehicle sensors to other automotive components, the processor writes data that reflect a level of safety to the first memory portion and the second memory portion; and

a communication device that links the storage device to a network of computers associated with a publicly accessible distributed network, the communication device is accessible through software retained on a computer readable storage medium that al-

lows a user to access insurance files related to an insurance policy and allows the user to access other software related to the insurance files where the first memory portion and the second memory portion retain data when an external power source is not coupled to the first memory portion and the second memory portion, respectively, and are inaccessible to an in-vehicle OEM system or an automotive scan tool, classified in class 705, subclass 4.

VI. Claims 71-73, drawn to:

a first storage device comprising a first memory portion that may be read from and is written to in a vehicle;

a second storage device comprising a second memory portion that may be read from and is written to in the vehicle that retains attributes of data logically associated with one or more data elements stored in the first storage device;

a central processing unit that reads data from an automotive bus that transfers data from vehicle sensors to other automotive components and writes data to the first memory portion;

a circuit that generates a steady stream of pulses that synchronizes the transfer of data from the automotive bus to the first memory portion; and

a communication device that links the storage device to a network of computers associated with an identifying number on a publicly accessible distributed network and is accessible through software that allows a user to access insurance files related to an existing insurance policy or a renewal of an insurance policy and allows the user to ac-

cess other software related to the insurance files, where the first memory portion and the second memory portion retain data when an external power source is not coupled to the first memory portion and the second memory portion, respectively, classified in class 705, subclass 4.

VII. Claim 74, drawn to:

a storage device comprising a first memory portion that is read from and is written to in a vehicle and a second memory portion that is read from and is written to in the vehicle that retains attributes of data logically associated with one or more data items stored in the first storage device;

a central processing unit that reads data from an automotive bus that transfers data from vehicle sensors to other automotive components and writes data to the first memory portion; and

a wireless communication device that links the storage device to a network of computers associated with an identifying number on a publicly accessible distributed network and is accessible through software retained on a computer readable storage medium that allows a user to access insurance files related to an existing insurance policy or a renewal of an insurance policy and allows the user to access other software related to the insurance files, where the first memory portion and the second memory portion retain data when an external power source is not coupled to the first memory portion and the second memory portion, respectively; and

where the software is configured to allow a party to change some or all of the data written to the storage device and where a second software retained on a computer readable storage medium remote from the vehicle is configured to allow the party to transmit the unchanged data and transmit the changed data to a Web server at the party's discretion, classified in class 705, subclass 4.

VIII. Claims 75-81, drawn to:

a vehicle bus that transfers data from vehicle sensors within a vehicle;

2o a first processor in communication with the vehicle bus and operative to track one or more of vehicle speed data, position data, and aggressive driving behavior data from the vehicle bus;

a global positioning receiver in communication with the first processor that processes position data, time data, and velocity data;

an on board vehicle diagnostic connector interfaced to the vehicle bus and the first processor; and

a data logger interfaced to the on board diagnostic connector and operative to receive the one or more of vehicle speed data, position data, and aggressive driving behavior data in a memory in the data logger, where the data logger is operative to upload the one or more of vehicle speed data, position data, and aggressive driving behavior data from the memory to a second processor remote from the first processor, where the second processor is programmed to generate Internet documents based on the uploaded data and an assigned level of risk, classified in class 705, subclass 4.

IX. Claims 82-91, drawn to:

a device that writes and records one or more characteristics related to a level of risk of operating a vehicle through an automotive communication link;

means for a party associated with the vehicle to review the recorded characteristics and review how the recorded characteristics affect a vehicle safety, a level of risk, or a cost of insurance;

means to enable the transmission of the recorded characteristics to an insurer through a wireless network;

means to transmit the recorded characteristics to the insurer automatically through a distributed network from the vehicle;

means for assigning a level of risk to the operation of the vehicle based on the recorded characteristics; and means for determining a cost of an insurance policy based on the assigned level of risk, classified in class 705, subclass 4.

X. Claims 92-103, drawn to:

monitoring one or more devices that monitor, measure, or control the operation of the vehicle;

writing data from one or more selected devices within a vehicle to an in-vehicle storage device, the data being related to the level of risk of operating the vehicle;

transmitting a portion of the data written to the storage device through a wireless link to a server that is remote from the vehicle by specifying a communication protocol to transmit the portion of data and by identifying a destination; and

calculating a premium of an insurance policy based on the portion of data transmitted through the wireless link, classified in class 705, subclass 4.

XI. Claims 104-115, drawn to:

monitoring a vehicle bus that transfers data among electronic components within a vehicle;

writing data received from the vehicle bus to a device that retains content when not connected to an external power source at a rate the data is received;

executing a first program that enables the wireless transmission of a portion of the data written to the device through a publicly accessible network to a server that is remote from the vehicle by specifying a communication protocol to transmit the portion of data;

executing a second program that calculates a premium of an insurance policy based on the portion of data;

and executing a third program that generates a document summarizing the premium of the insurance policy;

where the first program, the second program, and the third program are stored on a distributed computer readable storage medium, classified in class 705, subclass 4.

XII. Claims 116-127, drawn to:

collecting vehicle data from a vehicle bus that represents aspects of operating the vehicle;

writing the collected vehicle data to a storage device inaccessible to original equipment manufacturer's systems;

transferring the collected vehicle data written to the storage device to a processor that is remote from the vehicle; and

displaying the collected vehicle data that represents the aspect of operating the vehicle with data that reflects how the collected vehicle data affects a safety score, rating factor or a premium or an adjustment to a premium of an insurance policy, classified in class 705, subclass 4.

XIII. Claims 128-130, drawn to:

monitoring a vehicle bus that transfers data among electronic components within a vehicle;

writing mileage data from the vehicle bus to a device that retains content when not connected to an external power source at a predetermined interval or at a same rate the mileage data is received;

executing a first program retained on a computer readable storage medium that enables a user to wirelessly transmit the mileage data written to the device from the vehicle through a publicly accessible network to a server that is remote from the vehicle and the device; and

determining a cost of insurance based on the mileage data transmitted to a second program resident to the server, classified in class 705, subclass 4.

The inventions are distinct, each from the other because of the following reasons:

Inventions I -XIII are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, the subcombinations has separate utility . See MPEP § 806.05(d).

The examiner has required restriction between subcombinations usable together. Where applicant elects a subcombination and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and examination burden if restriction were not required because the following reason applies:

The inventions require a different field of search (for example, searching different classes/subclasses or electronic resources, or employing different search queries). In particular, it is presumed that a prior art search for invention I will not be useable for any prior art search for any claim in invention II, thus requiring at least two completely different search strategies. This compares differently to the searches required within invention II, since the search for claims 1 or 2, for example, would be usable in conjunction with the additional searches for claims 6, 12, or 24.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a invention to be examined even though the requirement may be traversed (37 CFR 1.143) **and (ii) identification of the claims encompassing the elected invention**.

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected invention.

If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

If the applicant traverses on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert R. Niquette whose telephone number is (571)270-3607. The examiner can normally be reached on Monday to Thursday, 7:30 - 4:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Kyle can be reached on 571-272-6746. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://www.uspto.gov. If you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (in USA or Canada) or 571-272-1000.

/Robert R. Niquette/
Examiner, Art Unit 3695
4-12-2011

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APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
12/132,487		3695	

OC000000046471783

Correspondence Address/Fee Address Change

The following fields have been set to Customer Number 10999 on 11/17/2010

- **Correspondence Address**
- **Maintenance Fee Address**
- **Power of Attorney Address**

The address of record for Customer Number 10999 is:

10999
Progressive Casualty/BHGL
P.O. Box 10395
Chicago, IL 60610

FORM PTO-1449		SERIAL NO. 12/132,487	CASE NO. 12654-42
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT		FILING DATE June 3, 2008	GROUP ART UNIT 3695
(use several sheets if necessary)	APPLICANT(S): Raymond Scott Ling et al.		CONFIRMATION NO. 7812

REFERENCE DESIGNATION **U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER Number-Kind Code (if known)	DATE	NAME	CLASS/ SUBCLASS	FILING DATE
	E1	US 3,781,824	12/25/1973	Caiati et al.		
	E2	US 3,870,894	03/11/1975	Brede et al.		
	E3	US 4,212,195	07/15/1980	Young		
	E4	US 4,387,587	06/14/1983	Faulconer		
	E5	US 4,581,708	04/08/1986	Van Ostrand et al.		
	E6	US 4,593,357	06/03/1986	Van Ostrand et al.		
	E7	US 4,638,289	01/20/1987	Zottnik		
	E8	US 4,706,083	11/10/1987	Baatz et al.		
	E9	US 4,836,024	06/06/1989	Woehrl et al.		
	E10	US 4,845,630	07/04/1989	Stephens		
	E11	US 4,944,401	07/31/1990	Groenewegen		
	E12	US 4,945,759	08/07/1990	Krofchalk et al.		
	E13	US 5,017,916	05/21/1991	Londt et al.		
	E14	US 5,074,144	12/24/1991	Krofchalk et al.		
	E15	US 5,355,855	10/18/1994	Saikalis		
	E16	US 5,394,136	02/28/1995	Lammers		
	E17	US 5,400,018	03/21/1995	Scholl et al.		
	E18	US 5,412,570	05/02/1995	Gruler et al.		
	E19	US 5,445,347	08/29/1995	Ng		
	E20	US 5,446,659	08/29/1995	Yamawaki		
	E21	US 5,459,660	10/17/1995	Berra		
	E22	US 5,465,079	11/07/1995	Bouchard et al.		
	E23	US 5,471,193	11/28/1995	Peterson et al.		
	E24	US 5,485,161	01/16/1996	Vaughn		
	E25	US 5,497,329	03/05/1996	Tang		
	E26	US 5,581,464	12/03/1996	Woll et al.		
	E27	US 5,608,629	03/04/1997	Cuddihy et al.		
	E28	US 5,654,501	08/05/1997	Grizzle et al.		
	E29	US 5,680,140	10/21/1997	Loomis		
	E30	US 5,693,876	12/02/1997	Ghitea, Jr. et al.		
	E31	US 5,726,893	03/10/1998	Schuchman et al.		
	E32	US 5,790,427	08/04/1998	Greer et al.		
	E33	US 5,799,249	08/25/1998	Kennedy, III et al.		
	E34	US 5,811,884	09/22/1998	Matuoka et al.		
	E35	US 5,815,093	09/29/1998	Kikinis		
	E36	US 5,832,394	11/03/1998	Wortham		
	E37	US 5,844,473	12/01/1998	Kaman		
	E38	US 5,862,500	01/19/1999	Goodwin		
	E39	US 5,877,707	03/02/1999	Kowalick		

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	SERIAL NO. 12/132,487	CASE NO. 12654-42
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT	FILING DATE June 3, 2008	GROUP ART UNIT 3695
(use several sheets if necessary)	APPLICANT(S): Raymond Scott Ling et al.	

REFERENCE DESIGNATION **U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER Number-Kind Code (if known)	DATE	NAME	CLASS/ SUBCLASS	FILING DATE
	E40	US 5,928,291	07/27/1999	Jenkins et al.		
	E41	US 5,974,356	10/26/1999	Doyle et al.		
	E42	US 6,009,363	12/28/1999	Beckert et al.		
	E43	US 6,076,026	06/13/2000	Jambhekar et al.		
	E44	US 6,185,490 B1	02/06/2001	Ferguson		
	E45	US 6,246,933 B1	06/12/2001	Bague		
	E46	US 6,608,554 B2	08/19/2003	Lesesky et al.		
	E47	US 6,744,352 B2	06/01/2004	Lesesky et al.		
	E48	US 2004/0139034 A1	07/15/2004	Farmer		
	E49	US 7,015,800 B2	03/21/2006	Lesesky et al.		
	E50	US 7,449,993 B2	11/11/2008	Lesesky et al.		

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER Number-Kind Code (if known)	DATE	COUNTRY	CLASS/ SUBCLASS	TRANSLATION YES OR NO
	E51	CA 2,151,458	06/23/1994	Canada		
	E52	CA 2,164,608	12/22/1994	Canada		
	E53	CA 2,229,238	08/11/1999	Canada		
	E54	EP 0 383 593 A2	08/22/1990	Europe		
	E55	EP 0 444 738 A2	09/04/1991	Europe		
	E56	EP 0 700 009 A3	03/06/1996	Europe		ABSTRACT
	E57	EP 0 895 173 A3	02/03/1999	Europe		
	E58	EP 1 128 265 A1	08/29/2001	Europe		ABSTRACT
	E59	EP 1 160 707 A1	12/05/2001	Europe		
	E60	EP 1 241 599 A1	09/18/2002	Europe		
	E61	EP 1 746 537 A3	01/24/2007	Europe		
	E62	DE 195 22 940 A1	01/02/1997	Germany		ABSTRACT
	E63	DE 197 28 872 A	01/14/1999	Germany		ABSTRACT
	E64	JP 3-4660 A	01/10/1991	Japan		ABSTRACT
	E65	WO 84/03359 A1	08/30/1984	WIPO		ABSTRACT
	E66	WO 88/09023 A1	11/17/1988	WIPO		ABSTRACT
	E67	WO 93/10510 A1	05/27/1993	WIPO		ABSTRACT
	E68	WO 94/04975 A1	03/03/1994	WIPO		
	E69	WO 94/18645 A1	08/18/1994	WIPO		ABSTRACT
	E70	WO 94/28434 A1	12/08/1994	WIPO		
	E71	WO 96/15636 A1	05/23/1996	WIPO		
	E72	WO 97/33382 A1	09/12/1997	WIPO		
	E73	WO 98/47109 A1	10/22/1998	WIPO		
	E74	WO 00/17721 A2	03/30/2000	WIPO		
	E75	WO 00/17800 A1	03/30/2000	WIPO		
	E76	WO 01/18491 A1	03/15/2001	WIPO		

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LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT	FILING DATE June 3, 2008	GROUP ART UNIT 3695
(use several sheets if necessary)	APPLICANT(S): Raymond Scott Ling et al.	

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER Number-Kind Code (if known)	DATE	COUNTRY	CLASS/ SUBCLASS	TRANSLATION YES OR NO
	E77	WO 01/73693 A2	10/04/2001	WIPO		
	E78	WO 02/41119 A2	05/23/2002	WIPO		
	E79	WO 03/073339 A1	09/04/2003	WIPO		

EXAMINER INITIAL		OTHER ART – NON PATENT LITERATURE DOCUMENTS (Include name of author, title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published.
	E80	"Automatic Vehicle Location for Public Safety Dispatch," Trimble brochure, 1993, 8 pages.
	E81	Brown, Robert L., "Recent Canadian Human Rights Decisions Having an Impact on Gender-Based Risk Classification Systems," Journal of Actuarial Practice, Vol. 3, No. 1, 1995, pp. 171-192.
	E82	Butler, P. et al., "Driver Record: a Political Red Herring That Reveals the Basic Flaw in Automobile Insurance Pricing," Journal of Insurance Regulation, Vol. 8, No. 2, 1989, pp. 200-234.
	E83	Butler, P., "Cost-Based Pricing of Individual Automobile Risk Transfer: Car-Mile Exposure Unit Analysis," Journal of Actuarial Practice, Vol. 1, No. 1, 1993, pp. 51-84.
	E84	Butler, P., "Gas-Tax and Time-Period Insurance Methods Equally Flawed," National Underwriter, June 15, 1998, p. 594.
	E85	Butler, T., "Insurance by the Mile," Letter to the Editor, The Washington Post, January 17, 1991, 2 pages.
	E86	Capon, R., "Insure by the Mile," Letter to the Editor, The Washington Post, December 27, 1990, 2 pages.
	E87	Civil Docket for Case No. 1:10-cv-01370-PAG, Progressive Casualty Insurance Company versus Safeco Insurance Company of Illinois et al., U.S. District Court, Northern District of Ohio (Cleveland) printed from the internet at <http://ecf.ohnd.uscourts.gov/cgi-bin/DktRpt.pl?324688388186026-L_1_0-1> on December 22, 2010, 12 pages.
	E88	Complaint, filed June 18, 2010, Case No. 1:10-cv-01370-PAG: Progressive Casualty Insurance Company versus Safeco Insurance Company of Illinois, Safeco Insurance Company of America, Safeco Corporation, Liberty Mutual Insurance Company, Liberty Mutual Group Inc., The Ohio Casualty Insurance Company, and Open Seas Solutions, Inc., 201 pages.
	E89	Defendants' Motion to Dismiss for Failure to State a Claim Upon Which Relief May Be Granted, filed September 8, 2010, Case No. 1:10-cv-01370-PAG: Progressive Casualty Insurance Company versus Safeco Insurance Company of Illinois, Safeco Insurance Company of America, Safeco Corporation, Liberty Mutual Insurance Company, Liberty Mutual Group Inc., The Ohio Casualty Insurance Company, and Open Seas Solutions, Inc., 99 pages.
	E90	Defendants' Motion to Stay Litigation Pending Ex Parte Reexamination of the Patent-In-Suit by the United States PTO filed October 14,2010, Case No. 1:10-cv-01370-PAG: Progressive Casualty Insurance Company versus Safeco Insurance Company of Illinois, Safeco Insurance Company of America, Safeco Corporation, Liberty Mutual Insurance Company, Liberty Mutual Group Inc., The Ohio Casualty Insurance Company, and Open Seas Solutions, Inc., 339 pages.

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FORM PTO-1449	SERIAL NO. 12/132,487	CASE NO. 12654-42
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT	FILING DATE June 3, 2008	GROUP ART UNIT 3695
(use several sheets if necessary)	APPLICANT(S): Raymond Scott Ling et al.	

EXAMINER INITIAL	OTHER ART – NON PATENT LITERATURE DOCUMENTS (Include name of author, title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published.	
	E91	Defendants' Reply Memorandum In Support of Their Motion to Dismiss for Failure to State a Claim Upon which Relief may be Granted filed October 26, 2010, Case No. 1:10-cv-01370-PAG: Progressive Casualty Insurance Company versus Safeco Insurance Company of Illinois, Safeco Insurance Company of America, Safeco Corporation, Liberty Mutual Insurance Company, Liberty Mutual Group Inc., The Ohio Casualty Insurance Company, and Open Seas Solutions, Inc., 13 pages.
	E92	Defendants' Reply Memorandum In Support of Their Motion to Stay Litigation Pending Ex Parte Reexamination of the Patent-In-Suit by the United States PTO filed November 4, 2010, Case No. 1:10-cv-01370-PAG: Progressive Casualty Insurance Company versus SafeCo Insurance Company of Illinois, SafeCo Insurance Company of America, SafeCo Corporation, Liberty Mutual Insurance Company, Liberty Mutual Group Inc., The Ohio Casualty Insurance Company, and Open Seas Solutions, Inc., 12 pages.
	E93	Dorweiler, P., "Notes on Exposure and Premium Bases," Proceedings of the Casualty Actuarial Society, Vol. 16, Nos. 33 & 34, 1929-1930, pp. 319-343.
	E94	Hanneghan et al., "The World-Wide Web As A Platform for Supporting Interactive Concurrent Engineering," Proceedings of Advanced Information Systems Engineering - 8th International Conference, CAiSE'96, Heraklion, Crete, Greece, May 20-24, 1996, 17 pages. (available from the internet at URL: http://www.cms.livjm.ac.uk/cmsmhann/publications/papers/CAISE96.pdf)
	E95	Klein, J. S. et al., "A Black Box Tells Just the Facts," The Los Angeles Times, Section: View, June 13, 1991, pp. E-8. (2 pages)
	E96	Memorandum of Opinion and Order (regarding Defendants' Motion to Dismiss for Failure to State a Claim Upon Which Relief May Be Granted) dated November 12, 2010, Case No. 1:10-cv-01370-PAG: Progressive Casualty Insurance Co. versus Safeco Insurance Co., et al., 10 pages.
	E97	Memorandum of Opinion and Order (regarding Defendants' Motion to Stay Litigation Pending Ex Parte Reexamination of the Patent-In-Suit by the United States PTO) dated November 12, 2010, Case No. 1:10-cv-01370-PAG: Progressive Casualty Insurance Co. versus Safeco Insurance Co., et al., 9 pages.
	E98	Narten, T., "File Server," Encyclopedia of Computer Science, Ed. Anthony Ralston and Edwin D. Reilly, 3rd. Ed., New York: Van Nostrand Reinhold, copyright 1993, pp.554-555.
	E99	"Operation of an Audited-Mile/Year Automobile Insurance System-Under Pennsylvania Law," A Study Prepared for Sponsors of Pennsylvania Senate Bill SB 775 and Pennsylvania House Bill 1881 and other Interested Members of the Pennsylvania General Assembly, NOW Insurance Project for National Organization for Women, June 1992, 18 pages.
	E100	Progressive's Memorandum in Opposition to Defendants' Motion to Dismiss for Failure to State a Claim Upon which Relief may be Granted filed October 12, 2010, Case No. 1:10-cv-01370-PAG: Progressive Casualty Insurance Company versus Safeco Insurance Company of Illinois, Safeco Insurance Company of America, Safeco Corporation, Liberty Mutual Insurance Company, Liberty Mutual Group Inc., The Ohio Casualty Insurance Company, and Open Seas Solutions, Inc., 59 pages.

EXAMINER	DATE CONSIDERED

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FORM PTO-1449	SERIAL NO. 12/132,487	CASE NO. 12654-42
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT	FILING DATE June 3, 2008	GROUP ART UNIT 3695
(use several sheets if necessary)	APPLICANT(S): Raymond Scott Ling et al.	

EXAMINER INITIAL	OTHER ART – NON PATENT LITERATURE DOCUMENTS (Include name of author, title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published.	
	E101	Progressive's Memorandum in Opposition to Defendants' Motion to Stay Litigation Pending Ex Parte Reexamination of the Patent-In-Suit by the USPTO filed October 28, 2010, Case No. 1:10-cv-01370-PAG: Progressive Casualty Insurance Company versus Safeco Insurance Company of Illinois, Safeco Insurance Company of America, Safeco Corporation, Liberty Mutual Insurance Company, Liberty Mutual Group Inc., The Ohio Casualty Insurance Company, and Open Seas Solutions, Inc., 80 pages.
	E102	PSC-200™ Intelligent Data Controller, product description, Trimble, 1994, 2 pages.
	E103	Request for Ex Parte Reexamination of U.S. Patent. No. 6,064,970 Pursuant to 35 U.S.C. § 302, 37 C.F.R. § 1.510, filed September 22, 2010, 178 pages.
	E104	"Vehicle Alert and Notification System," IBM Technical Disclosure Bulletin, Vol. 38, No. 8, August 1995, pp. 209-211.

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Electronic Acknowledgement Receipt

EFS ID:	9615926
Application Number:	12132487
International Application Number:	
Confirmation Number:	7812
Title of Invention:	VEHICLE MONITORING SYSTEM
First Named Inventor/Applicant Name:	Raymond Scott Ling
Customer Number:	10999
Filer:	James A. Collins/Nkosi Harvey
Filer Authorized By:	James A. Collins
Attorney Docket Number:	12654/42
Receipt Date:	09-MAR-2011
Filing Date:	03-JUN-2008
Time Stamp:	12:23:00
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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26	Foreign Reference	WO_01-18491_A1.pdf	1052988 ac4aabedb6a42e39236f008894b9168978cb0d0b	no	25
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Information:					

29	Foreign Reference	WO_03-73339_A1.pdf	1151444 04934025314f79b579a13758dc6ed2df9c156be8	no	30
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Information:					
30	NPL Documents	E80--Automatic_Vehicle_Location_for_Public_Safety.PDF	2306792 7107f375ecb9dacc923f7ed82575572908592b03	no	8
Warnings:					
Information:					
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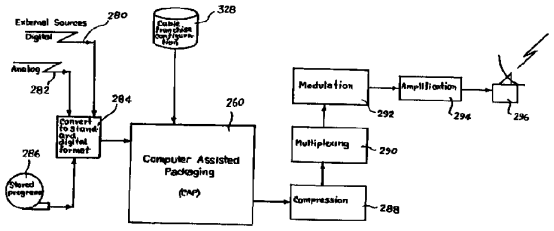
(54) CENTRE DE CONTROLE DES OPERATIONS POUR SYSTEME DE GROUPAGE ET DE DISTRIBUTION DE PROGRAMMES DE TELEVISION

(54) AN OPERATION CENTER FOR A TELEVISION PROGRAM PACKAGING AND DELIVERY SYSTEM

(57)

An Operations Center (202) for television entertainment systems that provide television programming to consumer homes is disclosed. The Operations Center (202) organizes and packages television progamming and program information for delivery to and from consumer homes. The Operations Center (202) includes a computerized packaging system (260) for creating a program control information signal.



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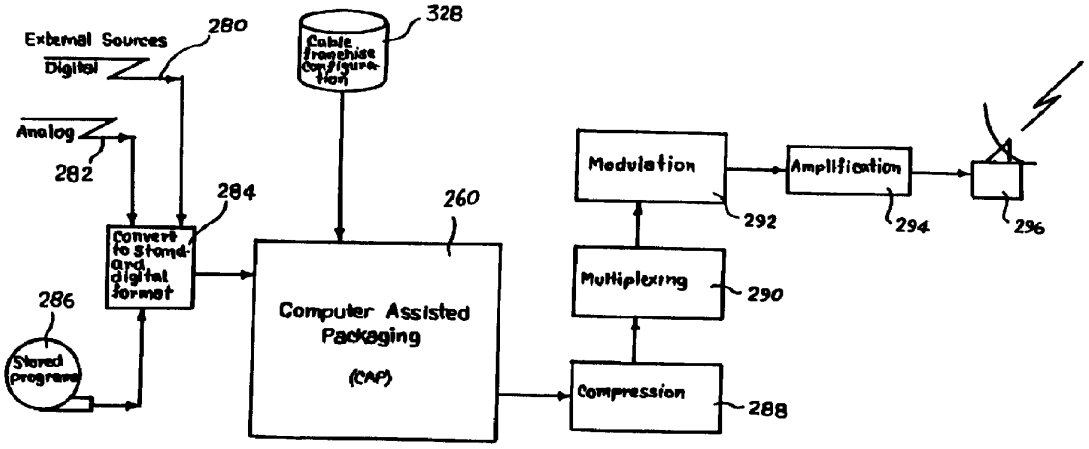

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An Operations Center (202) for television entertainment systems that provide television programming to consumer homes is disclosed. The Operations Center (202) organizes and packages television programming and program information for delivery to and from consumer homes. The Operations Center (202) includes a computerized packaging system (260) for creating a program control information signal.

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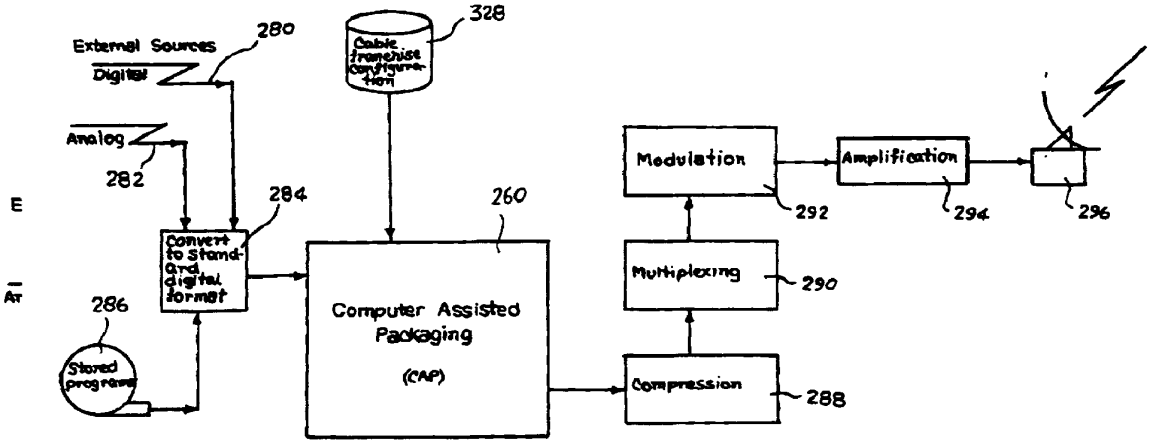

(57) Abstract

An Operations Center (202) for television entertainment systems that provide television programming to consumer homes is disclosed. The Operations Center (202) organizes and packages television programming and program information for delivery to and from consumer homes. The Operations Center (202) includes a computerized packaging system (260) for creating a program control information signal.

AN OPERATIONS CENTER FOR A TELEVISION PROGRAM PACKAGING AND DELIVERY SYSTEM

TECHNICAL FIELD

The invention relates to television entertainment delivery systems that provide television programming to consumer homes. More particularly, the invention relates to an Operations Center that organizes and packages cable television programming for delivery to consumer homes.

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BACKGROUND OF THE INVENTION

Advances in television entertainment have been primarily driven by breakthroughs in technology. In 1939, advances on Vladmir Zworykin's picture tube provided the stimulus for NBC to begin its first regular broadcasts. In 1975, advances in satellite technology provided consumers with increased programming to homes.

Many of these technology breakthroughs have produced inconvenient systems for consumers. One example is the ubiquitous three remote control home, having a separate and unique remote control for the TV, cable box and VCR. More recently, technology has provided cable users with 100 channels of programming. This increased program capacity is beyond the ability of many consumers to use effectively. No method of managing the program choices has been provided to consumers.

Consumers are demanding that future advances in television entertainment, particularly programs and program choices, be presented to the consumer in a user friendly manner. Consumer preferences, instead of technological breakthroughs, will drive the television entertainment market for at least the next 20 years. As computer vendors have experienced a switch from marketing new technology in computer hardware to marketing better useability, interfaces and service, the television entertainment industry will also experience a switch from new technology driving the market to consumer useability driving the market.

In order for new television entertainment products to be successful, the products must satisfy consumer demands. TV consumers wish to go from limited viewing choices to a variety of choices, from no control of programming to complete control. Consumers do not wish to pay for one

hundred channels when due to lack of programming information, they seldom, if ever, watch programming on many of these channels.

The concepts of interactive television, high definition television and 300-500 channel cable systems in consumer homes will not sell if they are not packaged, delivered and presented in a useable fashion to consumers. The problem is that TV programming is not being managed, packaged, delivered, and presented to consumers in a user friendly manner.

Consumers are already being bombarded with programming options, numerous "free" cable channels, subscription cable channels and pay-per-view choices. Any further increase in TV entertainment choices will likely bewilder viewers with a mind-numbing array of choices.

The TV industry has traditionally marketed and sold its programs to consumers in bulk, such as continuous feed broadcast and long-term subscriptions to movie channels. The TV industry is unable to sell its programming in large quantities on a per unit basis, such as the ordering of one program.

In today's television world networks manage the program lineup for individual channels. Each network analyzes ratings for television shows and determines the appropriate schedule or program lineup to gain market share and revenue from advertising. Since each channel is in competition with every other channel, there is no coordinated effort to organize television programming in a manner that primarily suits the viewers.

Additionally, viewership fragmentation, which has already begun to decrease a channel's or program's market share, will increase. Programming not presented in a user

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friendly manner will suffer with a decrease in viewership and revenue.

And finally, with the imminent introduction of digital television technology, current television delivery systems do not have the capabilities or features necessary to operate in the digital environment.

What is needed is a method of organizing programming to be offered to viewers.

What is needed is a television program delivery system that can be operated in a distributive fashion and controlled from one or more national centers.

What is needed is an Operations Center for a system which can gather television programming in a variety of formats, package the programs, deliver the programs, and present the programs through a user friendly interface which allows the consumer to easily select from among the many program choices.

What is needed is an Operations Center that is capable of handling hundreds of programs in different formats.

What is needed is an Operations Center that is expandable for future types of programming.

What is needed is needed is an Operations Center that can control certain features and software of a television delivery system.

What is needed is an Operations Center that operates in the digital audio/video environment.

What is needed is an Operations Center that formulates program menus for viewer use.

What is needed is a computer assisted program packaging system.

What is needed is an Operations Center that includes a method for billing consumers.

What is needed is an Operations Center that analyzes data on programs watched by viewers

The present invention is addressed to fulfillment of these needs.

SUMMARY OF INVENTION

This invention is a center for controlling the operations of a digital television program delivery system. Specifically, the present invention is an Operations Center that allows for the organizing and packaging of television programs for transmission in a television delivery system.

The Operations Center is the nerve center of the television program delivery system. It receives data on viewership behavior and utilizes the data to assist in packaging programs for future viewing. The Operations Center is a particularly useful invention for television delivery systems which will provide users with the ability to select programs from on-screen menus.

The Operations Center's primary component is a computer assisted packaging system (CAP), which makes use of the necessary hardware and software to control and transmit programming signals over a television delivery system. This computer assisted packaging system creates the program lineup or packaging of programs and the packaging of menu and control information for later transmission and use in the cable television systems. The CAP can be specially designed to generate graphical menu displays for user selection of programs. The hardware and software for controlling and transmitting programming signals over the television delivery system is particularly useful in large television delivery systems which include satellite transmissions to cable headends.

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The software of the CAP performs the functions of gathering analog (and/or digital) program signals from a variety of sources such as broadcast television, premium channels, and video disk. The software also packages the programs efficiently for the available bandwidth and for subscriber viewing through computer assisted creation of program line-up and allocating of bandwidth. The line-ups are created to effectively group programming for display in menus by categories. The television programs are packaged with the program control information (such as cost for viewing certain program) and menu information.

The Operations Center of the present invention provides a method for remote management and control of local cable and CATV programs available and on-screen menu displays shown to subscribers. The Operations Center's computer software programs and hardware provide "real-time" control over cable and CATV systems. By transmitting appropriate control information the Operations Center has the ability to change allocation of programs across physical channels, update menu information (from the Operations Center location), reprogram menu formats and menu flow, and change or augment a packaged program signal sent to a particular region of the country. The Operations Center is able to control remotely certain features and software of the set top terminals and if necessary reprogram menu display software stored at the set top terminals.

In order to properly manage program lineups, the Operations Center acquires viewer information on programs watched. Such viewer information includes information about the buy rates of specific shows, viewer preferences for programming, and the like, gathered by recording viewer transactions. A compilation of viewer information data is

needed in order to make decisions on future individualized program lineup and program packaging. In addition, allocation of menu space and construction of menus is aided by the use of viewer information data. This information is received from the set top terminals using a feedback loop, usually through the cable headends.

The present invention is not only able to operate in the digital environment but introduces many new features to television program delivery.

In one aspect, the present invention provides a method for providing programming in a television delivery system, comprising: packaging the programming at a program delivery center, wherein the programming package includes at least one program; generating menu information related to the programming package; providing the menu information to terminals using the television delivery system; storing the menu information in the terminals; and displaying the menu information as programming menus, wherein a programming menu is displayed on a first portion of a display coupled to a terminal and wherein the programming menu is displayed using a television channel.

In a further aspect, the present invention provides a system that provides programming selection from a menu, comprising: a television delivery system that packages programming, wherein the programming package includes at least one program, generates menu information related to the

programming, and provides the programming package and the menu information to subscribers; a terminal operably connected to the television delivery system, the terminal comprising: a memory that stores the menu information; a processor connected to the memory that processes the menu information to generate the menu, and a control operably connected to the processor that provides program selection instructions to the processor; and a display operably connected to the terminal that displays the menu and the programming, wherein the terminal switches to a channel carrying a program selected from the menu in response to a program selection instruction, the program selection instruction being a single control function.

In a further aspect, the present invention provides an operations center for use by a program packager to provide a television program delivery system, said operations center comprising: a reception port for receiving television programs; external collection means for gathering television programs from external sources and feeding television programs from external sources to said reception port; internal collection means, connected to said reception port, for gathering television programs from internal sources and feeding said television programs from internal sources to said reception port; a converter for converting any of said television programs that are in non-digital format to digital format; packaging means for creating program control information and for packaging said digital format television programs using said program control information, said packaging means comprising: a central processing unit; an interface, connected to the central processing unit, to enable a program packager to enter program line-up information, wherein said

interface is operably connected to said central processing unit; storage means, connected to the central processing unit, for storing said entered program line-up information; logic means, connected to the central processing unit, for arranging said stored program line-up information and for creating the program control information; and means, connected to the logic means, for generating a digital program control information signal from the program control information; combining means for creating a combined signal, said combined signal comprising the packaged digital format programs and the digital program control information signal; and transmission means, operably connected to said packaging means, for transmitting said combined signal.

In a still further aspect, the present invention provides a method of generating a digital program control data information signal for transmission to viewers receiving a simultaneously transmitted plurality of television programs so that variable video displays of current and future programming can be generated and so that the downstream displays of the television programs can be selected and controlled by the viewers, the method uses stored marketing data, algorithms, and menus, the method comprising: receiving input data, including program names, start times, program duration or program category and price; combining the input data with the stored marketing data comprising the frequency with which programs are watched by viewers and the demographics of viewers; weighing the combined data according to algorithms which assign a weight of importance to each type of data; generating from the weighted data a program line-up and program positions on menu formats resulting in a draft menu; displaying the resulting draft menu for editing; editing the draft

menu; and processing the edited menu to generate the digital program control data information signal for transmission to viewers.

In a further aspect, the present invention provides a centralized operating center for packaging a large number of diverse television programs for selective remote display by viewers using information about television programs, the operating center comprising: a receiver, wherein television programs are received in analog or digital format, each having video and audio components; a keyboard, wherein input commands are entered; a memory, wherein the information about the television programs is stored; a processor, operably connected to the memory and keyboard, wherein a program control information signal is generated using information stored in the memory and commands entered on the keyboard, the program control information signal containing specific identification concerning each television program in a subset of television programs received by the receiver, including the date and time of display comprising: a combiner, operably connected to the processor and receiver, wherein the subset of television programs identified in the program control information signal are combined in preparation for transmission; a multiplexer, connected to the combiner, wherein the combined television programs and the program control information signal are multiplexed for transmission; and a transmitter, connected to the multiplexer, wherein the multiplexed program control information signal is simultaneously transmitted along with the multiplexed television programs so that video displays can be generated using the program control information signal and so

that the downstream displays of the television programs can be selected and controlled by the viewers.

It is an object of this invention to provide a system for efficiently organizing television programs to be offered to viewers.

It is an object of this invention to provide an Operations Center for a television program delivery system.

It is an object of this invention to provide an Operations Center for a television program delivery system which can gather television programming in a variety of formats, package the programs, and dliver the packaged programs.

It is an object of this invention to provide an Operations Center for a program delivery system which presents programming viewing options to the consumer through a user friendly interface which allows the consumer to easily select from among the many program choices.

It is an object of this invention to provide an Operations Center that is capable of handling video/audio programming in different formats.

It is an object of this invention to provide an Operations Center capable of offering interactive television, high definition television (HDTV) and/or other advanced television features.

It is an object of this invention to provide an Operations Center that can control software and program features at the cable headend.

It is an object of this invention to provide an Operations Center that can control and if necessary reprogram set top terminals.

It is an object of this invention to provide an Operations Center for a digital program delivery system.

It is an object of this invention to provide an Operations Center that designs program menus.

It is an object of this invention to provide an Operations Center that uses data on programs viewed to create or aid in the selection of program line-ups.

It is an object of this invention to provide a computer assisted program packaging system for a television program delivery system.

These and other objects and advantages of the invention will become obvious to those skilled in the art upon review of the following description, the attached drawings and appended claims.

DESCRIPTION OF THE DRAWINGS

Figure 1 is a diagram of the primary components of the television delivery system.

Figure 2 is an overview of the television delivery system operations.

Figure 3 is a schematic of the operation of the primary components of the system.

Figure 4 is a schematic of the primary components of the Computer Assisted Packaging System (CAP).

Figure 5 is a more detailed schematic of the hardware of the Operations Center and CAP.

Figure 6a is a chart of the program control information carried by the program control information signal.

Figure 6b shows a bit-wise data format for program control information.

Figure 7 is a block diagram showing a Delivery Control Processor Unit and a Computer Assisted Packaging Apparatus.

Figure 8 is a schematic of the subroutines for the CAP software.

Figure 9 is a software flowchart representing CAP operations.

Figure 10 is a diagram of the database structure for the databases supporting the operations of the CAP.

Figure 11 is a block diagram of the Operations Center and Master Control Site.

Figure 12 is a block diagram of the computer assisted packaging shown in figure 11.

Figure 13 is a flow chart of the processing occurring at the Operations Center.

Figure 14 is a diagram of the bandwidth allocation for a 750 Mhz system.

Figure 15 is a diagram/chart of the compressed channel allocation for the system.

Figure 16 is a diagram showing how three cable television systems each with a different bandwidth may use the program delivery system and operations center of the present invention simultaneously.

Figure 17 is a diagram showing three different cable headend systems, each system receiving the entire satellite signal and stripping those parts of the signal which cannot be handled by the local cable system.

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Figure 18 is a diagram showing dynamic change in bandwidth allocation from a typical week day prime time program signal to a Saturday afternoon program signal.

Figure 19 is a drawing of a broadcast television menu screen to be displayed on a set top terminal.

Figure 20 is a drawing of a hit movie menu screen to be displayed on a set top terminal.

Figure 21 is a drawing of a hit movie description menu screen to be displayed on a set top terminal.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

A. Television Program Delivery System Description

1. Introduction

Figure 1 shows the present invention as part of an expanded cable television program delivery system 200 that dramatically increases programming capacity using compressed transmission of television program signals. Developments in digital bandwidth compression technology now allow much greater throughput of television program signals over existing or slightly modified transmission media. The program delivery system 200 shown provides subscribers with a user friendly interface to operate and exploit a six-fold or more increase in current program delivery capability.

Subscribers are able to access an expanded television program package and view selected programs through a menu-driven access scheme that allows each subscriber to select individual programs by sequencing a series of menus. The menus are sequenced by the subscriber using simple alpha-numeric and iconic character access or moving a cursor or highlight bar on the TV screen to access desired programs by simply pressing a single button, rather than recalling from

memory and pressing the actual two or more digit numeric number assigned to a selection. Thus, with the press of a single button, the subscriber can advance from one menu to the next. In this fashion, the subscriber can sequence the menus and select a program from any given menu. The programs are grouped by category so that similar program offerings are found on the same menu.

2. Major System Components

In its most basic form, the system uses a program delivery system 200 in conjunction with a conventional concatenated cable television system 210. The program delivery system 200 generally includes (i) at least one operations center 202, where program packaging and control information are created and then assembled in the form of digital data, (ii) a digital compression system, where the digital data is compressed, combined/multiplexed, encoded, and mapped into digital signals for satellite transmission to the cable headend 208, and (iii) a set of in-home decompressors. The program delivery system 200 transports the digital signals to the cable headend 208 where the signals are transmitted through a concatenated cable television system 210. Within the cable headend 208, the received signals may be decoded, demultiplexed, managed by a local central distribution and switching mechanism, combined and then transmitted to the set top terminal 220 located in each subscriber's home over the cable system 210. Although concatenated cable systems 210 are the most prevalent transmission media to the home, telephone lines, cellular networks, fiberoptics, Personal Communication Networks and similar technology for transmitting to the home can be used interchangeably with this program delivery system 200.

The delivery system 200 has a reception region 207 with an in-home decompression capability. This capability is performed by a decompressor housed within a set top terminal 220 in each subscriber's home. The decompressor remains transparent from the subscriber's point of view and allows any of the compressed signals to be demultiplexed and individually extracted from the composite data stream and then individually decompressed upon selection by the subscriber. The decompressed video signals are converted into analog signals for television display. Such analog signals include NTSC formatted signals for use by a standard television. Control signals are likewise extracted and decompressed and then either executed immediately or placed in local storage such as a RAM. Multiple sets of decompression hardware may be used to decompress video and control signals. The set top terminal 220 may then overlay or combine different signals to form the desired display on the subscriber's television. Graphics on video or picture-on-picture are examples of such a display.

Although a single digital compression standard (e.g., MPEG) may be used for both the program delivery system 200 and the concatenated cable system 210, the compression technique used may differ between the two systems. When the compression standards differ between the two media, the signals received by the cable headend 208 must be decompressed before transmission from the headend 208 to the set top terminals 220. Subsequently, the cable headend 208 must recompress and transmit the signals to the set top terminal 220, which would then decompress the signals using a specific decompression algorithm.

The video signals and program control signals received by the set top terminal 220 correspond to specific television

programs and menu selections that each subscriber may access through a subscriber interface. The subscriber interface is a device with buttons located on the set top terminal 220 or on a portable remote control 900. In the preferred system embodiment, the subscriber interface is a combined alpha-character, numeric and iconic remote control device 900, which provides direct or menu-driven program access. The preferred subscriber interface also contains cursor movement and go buttons as well as alpha, numeric and iconic buttons. This subscriber interface and menu arrangement enables the subscriber to sequence through menus by choosing from among several menu options that are displayed on the television screen. In addition, a user may bypass several menu screens and immediately choose a program by selecting the appropriate alpha-character, numeric or iconic combinations on the subscriber interface. In the preferred embodiment, the set top terminal 220 generates the menus that are displayed on the television by creating arrays of particular menu templates, and the set top terminal 220 displays a specific menu or submenu option for each available video signal.

3. Operations Center and Digital Compression System

The operations center 202 performs two primary services, packaging television programs and generating the program control information signal. At the operations center 202, television programs are received from external program sources in both analog and digital form. Figure 2 shows an embodiment of the operations center receiving signals from various external sources 212. Examples of the external program sources are sporting events, children's programs, specialty channels, news or any other program source that

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can provide audio or visual signals. Once the programs are received from the external program sources, the operations center 202 digitizes (and preferably compresses) any program signals received in analog form. The operations center 202 may also maintain an internal storage of programs. The internally stored programs may be in analog or digital form and stored on permanent or volatile memory sources, including magnetic tape or RAM. Subsequent to receiving programming, the operations center 202 packages the programs into the groups and categories which provide the optimal marketing of the programs to subscribers. For example, the operations center 202 may package the same programs into different categories and menus for weekday, prime-time viewing and Saturday afternoon viewing. Also, the operations center 202 packages the television programs in a manner that enables both the various menus to easily represent the programs and the subscribers to easily access the programs through the menus.

The packaging of the digital signals is typically performed at the operations center 202 by computer assisted packaging equipment (CAP). The CAP system normally includes at least one computer monitor, keyboard, mouse, and standard video editing equipment. A programmer packages the signals by entering certain information into the CAP. This information includes the date, time slot, and program category of the various programs. The programmer and the CAP utilize demographic data and ratings in performing the packaging tasks. After the programmer selects the various programs from a pool of available programs and inputs the requisite information, the programmer, with assistance from the CAP, can select the price and allocate transponder space for the various programs. After the

process is complete, the CAP displays draft menus or program schedules that correspond to the entries of the programmer. The CAP may also graphically display allocation of transponder space. The programmer may edit the menus and transponder allocation several times until satisfied with the programming schedule. During the editing, the programmer may direct the exact location of any program name on a menu with simple commands to the CAP.

The packaging process also accounts for any groupings by satellite transponder which are necessary. The operations center 202 may send different groups of programs to different cable headends 208 and/or set top terminals 220. One way the operations center 202 may accomplish this task is to send different program packages to each transponder. Each transponder, or set of transponders, then relays a specific program package to specific cable headends 208 and/or set top terminals 220. The allocation of transponder space is an important task performed by the operations center 202.

The operations center 202 may also "insert" directions for filling local available program time in the packaged signal to enable local cable and television companies to fill the program time with local advertising and/or local programming. Consequently, the local cable headends 208 are not constrained to show only programs transmitted from the operations center 202. New set top converters will incorporate both digital and analog channels. Therefore, the cable headend 208 may combine analog signals with the digital signals prior to transmitting the program signals to the set top terminals 220.

After the CAP packages the programs, it creates a program control information signal to be delivered with the

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program package to the cable headend 208 and/or set top terminal 220. The program control information signal contains a description of the contents of the program package, commands to be sent to the cable headend 208 and/or set top terminal 220, and other information relevant to the signal transmission.

In addition to packaging the signal, the operations center 202 employs digital compression techniques to increase existing satellite transponder capacity by at least a 4:1 ratio, resulting in a four-fold increase in program delivery capability. A number of digital compression algorithms currently exist which can achieve the resultant increase in capacity and improved signal quality desired for the system. The algorithms generally use one or more of three basic digital compression techniques: (1) within-frame (intraframe) compression, (2) frame-to-frame (interframe) compression, and (3) within carrier compression. Specifically, in the preferred embodiment, the MPEG 2 compression method is used. After digital compression, the signals are combined (multiplexed) and encoded. The combined signal is subsequently transmitted to various uplink sites 204.

There may be a single uplink site 204 or multiple uplink sites (represented by 204', shown in phantom in Figure 1) for each operation center 202. The uplink sites 204 may either be located in the same geographical place or may be located remotely from the operations center 202. Once the composite signal is transmitted to the uplink sites 204, the signal may be multiplexed with other signals, modulated, upconverted and amplified for transmission over satellite. Multiple cable headends 208 may receive such transmissions.

In addition to multiple uplinks, the delivery system 200 may also contain multiple operations centers. The preferred method for using multiple operations centers is to designate one of the operations centers as a master operations center and to designate the remaining operations centers as slave operations centers. In this configuration, the master operations center coordinates various functions among the slave operations centers such as synchronization of simultaneous transmissions and distributes the operations workload efficiently.

4. Cable Headend

After the operations center 202 has compressed and encoded the program signals and transmitted the signals to the satellite, the cable headend 208 receives and further processes the signals before they are relayed to each set top terminal 220. Each cable headend site is generally equipped with multiple satellite receiver dishes. Each dish is capable of handling multiple transponder signals from a single satellite and sometimes from multiple satellites.

With reference to Figure 3, as an intermediary between the set top terminals 220 and the operations center 202 and master control uplink site 211 (or other remote site), the cable headend 208 performs two primary functions. First, the cable headend 208 acts as a distribution center, or signal processor, by relaying the program signal to the set top terminal 220 in each subscriber's home. In addition, the cable headend 208 acts as a network controller 214 by receiving information from each set top terminal 220 and passing such information on to an information gathering site such as the operations center 202.

Figure 3 shows an embodiment where the cable headend 208 and the subscriber's home are linked by certain

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communications media 216. In this particular embodiment, analog signals, digitally compressed signals, other digital signals and up-stream/interactivity signals are sent and received over the media 216. The cable headend 208 provides such signaling capabilities in its dual roles as a signal processor 209 and network controller 214.

As a signal processor 209, the cable headend 208 prepares the program signals that are received by the cable headend 208 for transmission to each set top terminal 220. In the preferred system, the signal processor 209 re-routes or demultiplexes and recombines the signals and digital information received from the operations center 202 and allocates different portions of the signal to different frequency ranges. Cable headends 208 which offer different subscribers different program offerings may allocate the program signals from the operations center 202 in various manners to accommodate different viewers. The signal processor 209 may also incorporate local programming and/or local advertisements into the program signal and forward the revised signal to the set top terminals 220. To accommodate this local programming availability, the signal processor 209 must combine the local signal in digital or analog form with the operations center program signals. If the local cable system uses a compression standard that is different than the one used by the operations center 202, the signal processor 209 must also decompress and recompress incoming signals so they may be properly formatted for transmission to the set top terminals 220. This process becomes less important as standards develop (i.e., MPEG 2). In addition, the signal processor 209 performs any necessary signal decryption and/or encryption.

As a network controller 214, the cable headend 208 performs the system control functions for the system. The primary function of the network controller 214 is to manage the configuration of the set top terminals 220 and process signals received from the set top terminals 220. In the preferred embodiment, the network controller 214 monitors, among other things, automatic poll-back responses from the set top terminals 220 remotely located at each subscribers' home. The polling and automatic report-back cycle occurs frequently enough to allow the network controller 214 to maintain accurate account and billing information as well as monitor authorized channel access. In the simplest embodiment, information to be sent to the network controller 214 will be stored in RAM within each subscriber's set top terminal 220 and will be retrieved only upon polling by the network controller 214. Retrieval may, for example, occur on a daily, weekly or monthly basis. The network controller 214 allows the system to maintain complete information on all programs watched using a particular set top terminal 220.

The network controller 214 is also able to respond to the immediate needs of a set top terminal 220 by modifying a program control information signal received from the operations center 202. Therefore, the network controller 214 enables the delivery system to adapt to the specific requirements of individual set top terminals 220 when the requirements cannot be provided to the operations center 202 in advance. In other words, the network controller 214 is able to perform "on the fly programming" changes. With this capability, the network controller 214 can handle sophisticated local programming needs such as, for example, interactive television services, split screen video, and

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selection of different foreign languages for the same video. In addition, the network controller 214 controls and monitors all compressors and decompressors in the system.

The delivery system 200 and digital compression of the preferred embodiment provides a one-way path from the operations center 202 to the cable headend 208. Status and billing information is sent from the set top terminal 220 to the network controller 214 at the cable headend 208 and not directly to the operations center 202. Thus, program monitoring and selection control will take place only at the cable headend 208 by the local cable company and its decentralized network controllers 214 (i.e., decentralized relative to the operations center 202, which is central to the program delivery system 200). The local cable company will in turn be in communication with the operations center 202 or a regional control center (not shown) which accumulates return data from the set top terminal 220 for statistical or billing purposes. In alternative system embodiments, the operations center 202 and the statistical and billing sites are collocated. Further, telephone lines with modems are used to transfer information from the set top terminal 220 to the statistical and billing sites.

5. Set Top Terminal

The set top terminal 220 is the portion of the delivery system 200 that resides in the home of a subscriber. The set top terminal 220 is usually located above or below the subscriber's television, but it may be placed anywhere in or near the subscriber's home as long as it is within the range of the subscriber's remote control device 900. In some aspects, the set top terminal 220 may resemble converter boxes already used by many cable systems. For instance, each set top terminal 220 may include a variety of error detection,

decryption, and coding techniques such as anti-taping encoding. However, it will become apparent from the discussion below that the set top terminal 220 is able to perform many functions that an ordinary converter box cannot perform.

The set top terminal 220 has a plurality of input and output ports to enable it to communicate with other local and remote devices. The set top terminal 220 has an input port that receives information from the cable headend 208. In addition, the unit has at least two output ports which provide communications from the set top terminal 220 to a television and a VCR. Certain menu selections may cause the set top terminal 220 to send control signals directly to the VCR to automatically program or operate the VCR. Also, the set top terminal 220 contains a phone jack which can be used for maintenance, trouble shooting, reprogramming and additional customer features. The set top terminal 220 may also contain stereo/audio output terminals and a satellite dish input port.

Functionally, the set top terminal 220 is the last component in the delivery system chain. The set top terminal 220 receives compressed program and control signals from the cable headend 208 (or, in some cases, directly from the operations center 202). After the set top terminal 220 receives the individually compressed program and control signals, the signals are demultiplexed, decompressed, converted to analog signals (if necessary) and either placed in local storage (from which the menu template may be created), executed immediately, or sent directly to the television screen.

After processing certain signals received from the cable headend 208, the set top terminal 220 is able to store menu

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templates for creating menus that are displayed on a subscriber's television by using an array of menu templates. Before a menu can be constructed, menu templates must be created and sent to the set top terminal 220 for storage. A microprocessor uses the control signals received from the operations center 202 or cable headend 208 to generate the menu templates for storage. Each menu template may be stored in volatile memory in the set top terminal 220. When the set top terminal receives template information it demultiplexes the program control signals received from the cable headend 208 into four primary parts: video, graphics, program logic and text. Each menu template represents a different portion of a whole menu, such as a menu background, television logo, cursor highlight overlay, or other miscellaneous components needed to build a menu. The menu templates may be deleted or altered using control signals received from the operations center 202 or cable headend 208.

Once the menu templates have been stored in memory, the set top terminal 220 can generate the appropriate menus. In the preferred embodiment, the basic menu format information is stored in memory located within the set top terminal 220 so that the microprocessor may locally access the information from the set top terminal instead of from an incoming signal. The microprocessor next generates the appropriate menus from the menu templates and the other menu information stored in memory. The set top terminal 220 then displays specific menus on the subscriber's television screen that correspond to the inputs the subscriber selects.

If the subscriber selects a specific program from a menu, the set top terminal 220 determines on which channel

the program is being shown, demultiplexes and extracts the single channel transmitted from the cable headend 208. The set top terminal 220 then decompresses the channel and, if necessary, converts the program signal to an analog NTSC signal to enable the subscriber to view the selected program. The set top terminal 220 can be equipped to decompress more than one program signal, but this would unnecessarily add to the cost of the unit since a subscriber will generally only view one program at a time. However, two or three decompressors may be desirable to provide picture-on-picture capability, control signal decompression, enhanced channel switching or like features.

In addition to menu information, the set top terminal 220 may also store text transmitted from the cable headend 208 or the operations center 202. The text may inform the subscriber about upcoming events, billing and account status, new subscriptions, or other relevant information. The text will be stored in an appropriate memory location depending on the frequency and the duration of the use of the textual message.

Also, optional upgrades are available to enhance the performance of a subscriber's set top terminal 220. These upgrades may consist of a cartridge or computer card (not shown) that is inserted into an expansion slot in the set top terminal 220 or may consist of a feature offered by the cable headend 208 or operations center 202 to which the user may subscribe. Available upgrades may include on line data base services, interactive multi-media services, access to digital radio channels, and other services.

In the simplest embodiment, available converter boxes such as those manufactured by General Instruments or Scientific Atlanta, may be modified and upgraded to perform

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the functions of a set top terminal 220. The preferred upgrade is a circuit card with a microprocessor which is electronically connected to or inserted into the converter box.

6. Remote Control Device

The primary conduit for communication between the subscriber and the set top terminal 220 is through the subscriber interface, preferably a remote control device 900. Through this interface, the subscriber may select desired programming through the system's menu-driven scheme or by directly accessing a specific channel by entering the actual channel number. Using the interface, the subscriber can navigate through a series of informative program selection menus. By using menu-driven, iconic or alpha-character access, the subscriber can access desired programs by simply pressing a single button rather than recalling from memory and pressing the actual channel number to make a selection. The subscriber can access regular broadcast and basic cable television stations by using either the numeric keys on the remote control 900 (pressing the corresponding channel number), or one of the menu icon selection options.

In addition to enabling the subscriber to easily interact with the cable system 200, the physical characteristics of the subscriber interface 900 should also add to the user friendliness of the system. The remote control 900 should easily fit in the palm of the user's hand. The buttons of the preferred remote control 900 contain pictorial symbols that are easily identifiable by the subscriber. Also, buttons that perform similar functions may be color coordinated and consist of distinguishing textures to increase the user friendliness of the system.

7. Menu-Driven Program Selection

The menu-driven scheme provides the subscriber with one-step access to all major menus, ranging from hit movies to sport specials to specialty programs. From any of the major menus, the subscriber can in turn access submenus and minor menus by cursor or alpha-character access.

There are two different types of menus utilized by the preferred embodiment, the Program Selection menus and the During Program menus. The first series of menus, Program Selection menus, consists of an Introductory, a Home, Major menus, and Submenus. The second series of menus, During Program menus, consists of two primary types, Hidden menus and the Program Overlay menus.

Immediately after the subscriber turns on the set top terminal 220, the Introductory menu welcomes the subscriber to the system. The Introductory menu may display important announcements from the local cable franchise, advertisements from the cable provider, or other types of messages. In addition, the Introductory menu can inform the subscriber if the cable headend 208 has sent a personal message to the subscriber's particular set top terminal 220.

After the Introductory menu has been displayed the subscriber may advance to the next level of menus, namely the Home menu. In the preferred embodiment, after a certain period of time, the cable system will advance the subscriber by default to the Home menu. From the Home menu, the subscriber is able to access all of the programming options. The subscriber may either select a program directly by entering the appropriate channel number from the remote control 900, or the subscriber may sequence through incremental levels of menu options starting from the Home

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menu. The Home menu lists categories that correspond to the first level of menus called Major menus.

If the subscriber chooses to sequence through subsequent menus, the subscriber will be forwarded to the Major menu that corresponds to the chosen category from the Home menu. The Major menus further refine a subscriber's search and help guide the subscriber to the selection of his choice.

From the Major menus, the subscriber may access several submenus. From each submenu, the subscriber may access other submenus until the subscriber finds a desired television program. Similar to the Major menu, each successive level of Submenus further refines the subscriber's search. The system also enables the subscriber to skip certain menus or submenus and directly access a specific menu or television program by entering the appropriate commands on the remote control 900.

The During program menus (including Hidden Menus and Program Overlay Menus) are displayed by the set top terminal 220 only after the subscriber has selected a television program. In order to avoid disturbing the subscriber, the set top terminal 220 does not display the Hidden Menus until the subscriber selects the appropriate option to display a Hidden Menu. The Hidden Menus contain options that are relevant to the program selected by the viewer. For example, a Hidden Menu may contain options that enable a subscriber to enter an interactive mode or escape from the selected program.

Program Overlay Menus are similar to Hidden Menus because they occur during a program and are related to the program being viewed. However, the Program Overlay Menus are displayed concurrently with the program selected by the

subscriber. Most Program Overlay Menus are small enough on the screen to allow the subscriber to continue viewing the selected program comfortably.

B. Operations Center With Computer Assisted Packaging System

Figure 4 broadly shows the configuration for the computer assisted packaging system (CAP) 260 of the Operations Center 202. The primary components of the CAP 260 consist of multiple packager workstations 262, a central processing unit 264, video/audio editing equipment 266, and one or more databases 268 and 269. Additional remotely located databases, such as local video storage database 267, and buffers 271 and controllers 272 for external program feeds make up the peripherals of the CAP system 260.

The heart of the CAP 260 is a central processing unit 264 which communicates with all the component parts of the CAP 260 . The central processing unit 264 can be a powerful PC, a mini-computer, a mainframe or a combination of computing equipment running in parallel. The central processing unit 264 includes all the necessary interconnections to control peripheral equipment such as the external video controls 272. The central processing unit 264 has sufficient memory 274 to store the program instructions of the subroutines which operate the CAP 260.

The CAP 260 receives data from one or more databases, such as the Operations Center Database 268 and the Cable Franchise Information Database 269 shown in Figure 4. In addition, separate databases are maintained of viewer information, such as demographics and programs viewed. The CAP 260 can control the reception of external sources by enabling and disenabling the external video controls 272. The external video controls 272 include buffers to delay as

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necessary external programs received by the Operations Center 202.

The functions of the video/audio equipment 266 include digitizing analog programs, digitizing and compressing analog programs (in a single step, e.g., MPEG), and compressing digital program signals as requested by the central processing unit 264.

The CAP 260 receives video and audio from two sources: internally from a local video storage 267 and externally from external sources through external video controls 272. When necessary, video is manipulated, formatted and/or digitized using video/audio equipment 266 which is controlled by CAP 264.

Referring back to Figure 2, an overview of an operating cable television menu driven program delivery system 200 highlighting various external programming signal sources 212 is depicted. The Operations Center 202 is shown receiving external programming signals which correspond to particular programming categories that are available for a subscriber's viewing. These external signals may be in analog or digital form and may be received via landline, microwave transmission, or satellite. Some of these external signals may be transmitted from the program source 212 to the Operations Center 202 in compressed digital format or other nonstandard digital formats. These external signals are received and packaged with programming that is stored at the Operations Center 202.

Examples of external program sources 212 shown in Figure 2 are: Sporting events, children's programs, documentaries, high definition TV sources, specialty channels, interactive services, weather, news, and other nonfiction or entertainment. Any source that can provide

either audio or video or both may be utilized to provide programming to the Operations Center 202.

In order to achieve the required throughput of video and audio information for the system, digital compression techniques are employed. A television signal is first digitized. The object of digitization is two-fold: First, in the case of an analog signal, like a television picture, digitization allows the signal to be converted from a waveform into a digital binary format. Secondly, through the use of digital compression techniques, standard digital formats are designed to have the resulting pictures or video stills take up less space on their respective storage mediums. Essentially, as described below, a standard digital format will define the method of compression used.

There are three basic digital compression techniques: within-frame (intraframe), frame-to-frame (interframe), and within-carrier. Intraframe compression processes each frame in a television picture to contain fewer visual details and, therefore, the picture contains fewer digital bits. Interframe compression transmits only changes between frames, thus omitting elements repeated in successive frames. Within-carrier compression allows the compression ratio to dynamically vary depending upon the amount of changes between frames. If a large number of changes occur between frames, the compression ratio drops from, for example, sixteen-to-one to eight-to-one. If action is intense, the compression ratio may dip to four to one.

Several standard digital formats representing both digitizing standards and compression standards have been developed. For example, JPEG (joint photographic experts group) is a standard for single picture digitization. Motion picture digitization may be represented by standards such as

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MPEG or MPEG2 (motion picture engineering group specifications). Other proprietary standards have been developed in addition to these. The preferred embodiment uses the MPEG-2 standard of coding and those of ordinary skill in the art are presumed to be familiar with the MPEG-2 standard. The MPEG-2 Systems Working Draft Proposal from the Systems Committee of the International Organization For Standardization, document ISO/IE JT1/SC29/WG11 "N0531" MPEG93 dated September 10, 1993, is hereby incorporated by reference. Although MPEG and MPEG2 for motion pictures are preferred in the present invention, any reliable digital format with compression may be used with the present invention.

Various hybrids of the above compression techniques have been developed by several companies including AT&T, Compression Labs, Inc., General Instrument, Scientific-Atlanta, Phillips, and Zenith. As is known by those skilled in the art, any of the compression techniques developed by these companies, and other known techniques, may be used with the present invention.

With reference to Figure 4, the human intervention in this system is conducted by a programmer or program packager operating from the one or more work stations 262 connected to the system. These work stations 262 are preferably intelligent work stations with large CRT screens. In the preferred embodiment, a suitable keyboard, mouse and color monitor are used with the workstation. From these work stations, the packager can create program lineups, prioritize programs, initiate dynamic menu allocation, initiate dynamic bandwidth allocation, design menus, place program names and descriptions onto menus, create menus with still and live video, move text on menus, change the colors of

objects on menus and perform various other tasks for the program delivery system 200.

Almost any Operations Center 202 function that normally requires human intervention can be conducted at the packager workstation 262. Although data entry for the databases can be performed manually at the workstations 262, it is preferred that the data entry be completed through electronic transfers of information. Alternatively, the data can be loaded from customary portable storage media such as magnetic disks or tape.

An integral part of the Computer Assisting Packaging system is the retrieval of viewer data, and the assimilation of that data into the program packaging method (especially the menu configuration) as discussed in reference to Figure 8 MII 402. This involves two main steps, first, retrieval of raw data from the set top terminals, and then filtering and presenting that data. Each headend 208 compiles the viewer data, and then sends it verbatim to the Operations Center 202. This raw data is necessary because different responsibilities of the Operations Center 202 require different parts of the raw information. Also a record must be kept of overall data. Once the data is assembled at the Operations Center 202, the data is filtered for each application.

The raw data gathered includes but is not limited to:

- What programs a viewer purchased and when it was purchased
- What channel a specific viewer watched and for how long.

This information can then be used to calculate the following:

- How many viewers watched a particular program.

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- Peak viewing times for different categories of shows.
- Buy rates for particular menu positions.

Menu creation, both automatically and manually, is one of the major CAP functions that involves the incorporation of the raw data. An automated software procedure (such as the EIS) analyzes the data and, using certain heuristics, creates the menus.

One heuristic, for example, is that when a show is not ordered frequently, it is moved closer to the top of the menu for greater visibility. The filtering of the data allows it to be sorted and indexed for display to the user. The program data can be filtered into a new database containing program names and indexed by the number of times each program was purchased. The data can also be indexed by buy times and program categories.

Certain metrics are established to help in evaluating the data. Using the EIS or similar software, sales by menu placement, cost, category and lifespan can be pulled up for viewing in graphic presentation. The graphic presentation, in the form of line or bar graphs, help the packager recognize any trends in the data. For example, the first movie on a movie menu might not have sold as well as a second movie listed. A chart can be pulled up to reveal that the first movie has been at the top of the menu for two weeks and buy rates are naturally falling off. Steps can then be taken to move items in the menus to correct this, though many of these steps are automated in the menu creation system. Suggested changes can be displayed to help the user in this task.

The automated procedures create menus that are distinct between headends 208 because of demographic differences in the viewing audience. To help with this, a

separate database of viewer demographics exists and is frequently updated. The headends 208 are able to alter the menu positions in order to further tailor the presentation, or to add local shows. Any changes to the menus are sent back to the Operations Center 202 at the same time as the viewer data, in order to prevent erroneous data analysis. Menu changes at the cable headend are described in detail in co-pending patent application Ser. No. PCT/US93/11616, entitled Network Controller for a Cable Television System, filed by the same assignee.

Another use for the indexed data is creation of marketing reports. Programming changes are helped by accurate information on viewer preference. Also viewer purchasing trends, and regional interests can be tracked.

In the preferred embodiment, an Executive Information System (EIS) is used to give high level access to both "buy" (what the customer purchases) and "access" (when the product was viewed, how often and duration) data. The EIS represents information in both a graphical and summary report format. "Drill down" functions in the EIS help the packager derive the appropriate product (product refers to programs, events or services) mix.

The purpose of the EIS is to provide an on-line software tool that will allow for real-time evaluation of current product positioning. The design of the system consists of user friendly icons to guide the user through available functions. The functionality in the system provides general information on current programming sales status. By working through the tiers in the system, the user has access to more specific information. The system is designed to shield the user from a long learning curve and information overload.

The graphical tools allow for analysis of current data through the use of multiple graph types such as line graphs, bar and pie charts. These tools will allow the user to manipulate independent variables such as time (hour, day of the week, week, month), demographic information, program category information (genre, property, events), headend information and pricing information for determining the appropriate programming mix within the allotted time slots.

The system also allows the packager to derive expected monetary returns through program line-ups by integrating outside industry databases. For instance, the system could be used to determine expected returns from a particular program by correlating buy information from the existing programs in the line up with a viewer ratings service database to determine the outcome of programs within a particular genre not in the current line up.

Report tools within the EIS aggregate buy access at the highest level. Due to the volume of available information statistical analysis methods are used for deriving marketing intelligence within the EIS.

A yield management tool is incorporated within the EIS. The yield management tool encompasses operations research techniques, statistical methods and neural net technology to decide program mix as it pertains to program substitutes, program complements, time slice positioning, repetitions and menu positioning.

This system is automated to the extent of providing viable alternative as to the proposed product mix. The system encompasses a Monte Carlo simulation for developing alternative product mix scenarios. The system feeds from both internal data and external industry data sources to provide expected revenue projections for the different

scenarios. Other software subroutines of the CAP will automatically call upon the EIS to assist the program in important decision making, such as menu configuration and transponder allocation. Human interaction is required to change marketing parameters for fine tuning the desired product scheduling.

Although the packaging of the program information and programs, including the creation of program control information, program lineup and menu designing configuration, is conducted at the CAP 260, all other functions of the Operations Center 202 can be controlled by a second separate processing unit (shown in Figure 5 at 270). This second processing unit 270 is the Delivery Control Processing Unit 270, and can perform the tasks of incorporating the program control information signal from the CAP 260, coordinating the receipt and combining of external program video/audio and internal video/audio and combining the signals as necessary for transmission. This distribution of functions among the CAP 260 and Delivery Control Processing Unit 270 allows for greater speed and ease of use.

Figure 5 shows a more detailed diagram of the CAP 260 and the Delivery Control Processor Unit 270. Once external and stored digital and analog sources have been converted into a standard digital format 274, they are input into standard digital multiplex equipment 273 (of the type manufactured by Scientific Atlanta, General Instruments, and others). Additionally, the Program Control Information Signal 276 is input into the digital multiplex equipment 273. These inputs 274, 276 are multiplexed appropriately under the control of the Delivery Control Processor Unit 270 as commanded by the CPU 264. The Delivery Control Processor

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Unit 270 is also responsible for the generation of the Program Control Information Signal 276 based on information received from the CPU 264. The Delivery Control Processor Unit 270 allows for the off-loading of real-time and near real-time tasks from the CPU 264. The CPU 264, as described earlier, processes information within its database and provides user access to the CAP 260 via multiple user workstations 262 . The high-speed digital output 278 from the digital multiplex equipment 273 is then sent on to the compression (if necessary), multiplexing, modulation and amplification hardware, represented at 279.

C. The Program Control Information Signal

The following table, TABLE A, is an example of some information that can be sent in the program control information signal to the set top terminals 220. The program control information signal generated by the Operations Center 202 provides data on the scheduling and description of programs via the network controller 214 or, in an alternate configuration, directly to the set top terminal 220 for display to the subscriber.

In the preferred embodiment, the program control information signal 276 is stored and modified by the network controller 214 and sent to the set top terminal 220 in the form of a set top terminal control information stream (STTCIS). This configuration accommodates differences in individual cable systems and possible differences in set top converter or terminal devices. The set top terminal 220 of the present invention integrates either the program control signal 276 or the STTCIS, together with data stored in the memory of the set top terminal 220, to generate on-screen menu displays for assisting the subscriber in choosing programs for viewing. (Throughout the description the term

"program control information" is being used to indicate control information coming from the cable headend 208 to the set top terminal 220, whether it is sent directly from the Operations Center 202, processed by the network controller 214, and then forwarded to the set top terminal as STTCIS, or transmitted over telephone lines.)

With further reference to TABLE A below, the types of information that can be sent via the program control signal include: number of program categories, names of program categories, what channels are assigned to a specific category (such as specialty channels), names of channels, names of programs on each channel, program start times, length of programs, description of programs, menu assignment for each program, pricing, whether there is a sample video clip for advertisement for the program, and any other program, menu or product information.

The goal of the menu driven program selection system of the present invention, described in greater detail in a co-pending U.S. Patent application entitled SET TOP TERMINAL FOR CABLE TELEVISION DELIVERY SYSTEM, Ser. No. PCT/US93/11618, owned by the assignee of the present invention is to allow the subscriber to choose a program by touring through a series of menus utilizing a remote control 900 for cursor movement. The final choice in the series of menus will identify one particular channel and one time for activation of that channel. Armed with a channel and activation time the set top terminal 220 can display the selected program on the television for the viewer. To achieve this goal, an intelligent alpha-numeric code is assigned to each program. This alpha-numeric code identifies the category of the program, the menu in which the program should be displayed, its

transmission time(s), and the position on the menu that the program should be displayed. In a preferred embodiment, the program control information, including menu codes, is sent continuously from the Operations Center 202 to the network controller 214, and ultimately to the set top terminal 220. For example, four hours worth of programming information can be sent via the program control information signal continuously in the format shown in TABLE A.

TABLE A

12:00 PM

	*Program name	*Program length	*Menu code	*Description	*Video
1	Cheers	.5	E24	C	N
2	Terminator	2.0	A33	Tx	S
3	PrimeTime	1.0	D14	N	N
4	Football Special	.5	B24	S	N
•					
•					
•					
•					

12:30 PM

	*Program name	*Program length	*Menu code	*Description	*Video
1	Simpsons	.5	E14 & C13	C	S
4	Football Game	3.0	B13	S	N
•					
•					
•					

TABLE A shows the basic information that is needed by the set top terminal 220. The program descriptions shown are coded abbreviations. For example, C stands for comedy, N for news, S for sports, A for cartoons, and TX for text. If

there is a textual description for a program, such as a movie, the description may be given following that program's coded description or may be communicated following the four hours of programming information. As is shown in the coded listing, program descriptions for programs greater than a half hour in length need not be repeated (each half hour). The video description code informs the set top terminal 220 whether there is still or live video available to advertise the program.

For example, a sporting program may be assigned a code of B35-010194-1600-3.25-Michigan St. vs. USC. The letter B would assign the program to category B, sports. The second alpha-numeric character number 3 would assign the program to the third menu of the sports category. The third character of the code, number 5, assigns the program to the fifth program slot on the third menu. The next six characters, 01/01/94, represent the date. The following four characters, 1600 represent the start time which is followed by the length of the program and the program name. This entry represents a sports show, a college football game, which will be aired at 4:00PM on New Years day 1994.

In the 12:30 Channel 1 entry of TABLE A, two menu codes are shown. By allowing two menu codes, programs that may fit under two different category descriptions may be shown in both menus to the subscriber. With this minimal amount of information being communicated to the set top terminal 220 on a regular basis, the terminal is able to determine the proper menu location for each program and the proper time and channel to activate for the subscriber after his menu selection. In the preferred embodiment, the menu codes are generated at the Operations Center 202.

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Table B shows an example Events Table that may be downloaded to a set top terminal 220 using the Event Data file which contains information about events and pricing. As shown in the table, the three columns of the Events Table identify the field number, the field itself and the type of information downloaded in the Event Data file. The first column contains the field numbers 1 through 11. The middle column contains the corresponding field parameters, including the event type, event ID, global channel ID, price, start time, end time, start date, end date, P- icon, name and description. The third column contains corresponding field type information. As shown in this field type information typically consists of an unsigned integer; hours, minutes and seconds; months, day and year; and ASCII character identifier.

TABLE B

Field #	Field	Type
1	Event Type 1 = YCTV 2 = Pay-Per-View 3 = Reg. TV	Unsigned Int
2	Event ID	Unsigned Int
3	Global Channel ID	Unsigned Int
4	Price (in Cents)	Unsigned Int
5	Start Time	HH:MM:SS
6	End Time	HH:MM:SS
7	Start Date	MM/DD/YY
8	End Date	MM/DD/YY
9	P-Icon	ASCIIZ
10	Name	ASCIIZ
11	Description	ASCIIZ

Table C shows an example Event Data data file. In particular, Table C shows two data streams corresponding to two event types. The first data stream identifies a YCTV event in the first field. The second field designates the event ID.

which is 1234 in this example. The third field includes the global channel ID number two. The fourth field indicates the cost of 50 cents for this event. The fifth and sixth fields indicate the respective start and end times of 3:00 a.m. to 3:00 p.m., respectively. The seventh and eighth fields show the corresponding start and end date, designated as 8/25/93 and 8/27/93, respectively. Field nine indicates the P icon set to a graphics file. Finally, fields ten and eleven indicate the name and description of the event selected, which in this case is Sesame Street™ and Barney™. The second data stream in the Event.Dat example shown in Table C includes analogous information for Terminator IV™, which is designated in field one as a pay-per-view event.

TABLE C

Event Data Example

```
1^1234^2^50^03:00:00^15:00:00^08/25/93^08/27/93^pbs.pcx^Sesame Street & Barney's Sesame Street and Barney Abstract
2^1234^2^50^20:00:00^22:00:00^08/25/93^08/25/93^t4.pcx^Terminator 4^Terminator 4 Abstract
```

The program control information signal 276 and STTCIS can be formatted in a variety of ways and the on-screen menus can be produced in many different ways. For instance, if the program control information signal 276 carries no menu format information, the menu format for creating the menus can be fixed in ROM at the set top terminal 220. This method allows the program control signal 276 to carry less information but has the least flexibility since the menu formats cannot be changed without physically swapping the ROM holding the menu format information. In the preferred embodiment, the menu format information is stored at the set top terminal 220 in temporary memory either in a RAM or EPROM. This configuration provides the

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desired flexibility in the menu format while still limiting the amount of information needed to be communicated via the program control information signal 276. New menu format information would be sent via the program control information signal 276 or the STTCIS to the set top terminals 220 each time there was a change to a menu.

In the simplest embodiment, the menus remain fixed and only the text changes. Thus, the program control information signal 276 can be limited to primarily text and a text generator can be employed in the set top terminal 220. This simple embodiment keeps the cost of the set top terminal 220 low and limits the bandwidth necessary for the program control information. Another simple embodiment uses a separate channel full-time (large bandwidth) just for the menu information.

Figures 6a and 6b, particularly Figure 6a, show a data format 920 at the bit-level for one embodiment of a program information signal 276. This frame format consists of six fields, namely: (1) a leading flag 922 at the beginning of the message, (2) an address field 924, (3) a subscriber region designation 926, (4) a set top terminal identifier 928 that includes a polling command/response (or P/F) bit 930, (5) an information field 932, and (6) a trailing flag 934 at the end of the message.

The eight-bit flag sequence that appears at the beginning 922 and end 927 of a frame is used to establish and maintain synchronization. Such a sequence typically consists of a "01111110" bit-stream. The address field 924 designates a 4-bit address for a given set top terminal 220. The subscriber region designation 926 is a 4-bit field that indicates the geographical region in which the subscriber's set top terminal 220 is housed. The set top terminal

identifier 928 is a 16-bit field that uniquely identifies each set top terminal 220 with a 15-bit designation followed by an appended P/F bit 930. Although field size is provided by this example, a variety of sizes can be used with the present invention.

The P/F bit 930 is used to command a polling response 920' (Figure 6b) from the set top terminal 220 addressed. The polling response 920' is substantially similar to the from format 920, and is commonly numbered, but with a prime (') designation appended for clarity. The frame format 920 also provides a variable-length information field 932 for other data transmissions, such as information on system updates. The frame format ends with an 8-bit flag 934 (or trailing flag) that is identical in format to the leading flag 922, as set forth above. Other frame formats, such as MPEG, for example, will be apparent to one skilled in the art and can be easily adapted for use with the system.

D. Software Subroutines

The program control information signal 276 is produced substantially by the CAP CPU 264 and the Delivery Control Processor Unit (DCPU) 270. An overview of the software modules, focusing on the processing of signals and communication between CAP CPU 264 and DCPU 270 is shown in Figure 7. The software modules for the CAP CPU 264 and DCPU 270 include dispatcher 484, processing 486 and communications 488, each of which performs like-named functions, as well as supporting database 490 access. Processing within the CAP CPU 264 is controlled by the dispatcher 484 software module which may generate processing commands based on user command (e.g., do something now), schedule events (e.g., do something at noon) or based on the occurrence of other events (e.g., do

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something when the database is updated). The dispatcher 484 sends messages to the processing software module 486 instructing it to process information within the database 490 and generate control information for the DCPU 270. For example, based on the updating of information associated with a particular headend 208, the dispatcher 484 may command the CAP CPU 264 to regenerate headend 208 parameters, perform any required database integrity checking and send them to the DCPU 270. Also, in the case of headend 208 information processing, a filtering function (not shown) is performed which eliminates any information that does not either directly or indirectly relate to a given headend 208. Information transfer between the CAP CPU 264 and the DCPU 270 is controlled by the DCPU communications software module 488.

Information received by the DCPU 270 from the CAP CPU 264 is processed at the DCPU processing module 496 and put into a form consistent with the DCPU 270. Some of this information is used for DCPU control, while most is data to be integrated into the program control information signal 261. Some of this information is also used for miscellaneous control 494 for such things as external multiplex equipment, source material generation hardware, transmission equipment and so on. Information destined for the program control information signal 261 may be transmitted once or may be scheduled for periodic transmission. This information is integrated by the processing module 496 with other information, both internal and external. The DCPU scheduler module 497 is responsible for scheduling and regulating this data traffic. Also, the scheduler 497 may perform information filtering. For example, imbedded date/time information within the information records of interest can be used for

filtering. External pass-through control information 495 may also be incorporated into the program control information signal 261 to provide external input to this digital data stream. The DCPU multiplexer 498 is responsible for multiplexing external pass-through control information. Finally, a transmission software module 499 in conjunction with appropriate communications hardware (not shown), controls the output of both the program control information signal 261 and the miscellaneous control signals 494.

Figure 8 is a high level diagram of CAP software subroutines and their interrelations. A Main Program (not shown) orchestrates the use of the various subroutines as needed to perform the CAP's tasks. The Packager Data Entry Interface (PDEI) 400, Marketing Information Interface (MII) 402, and Cable Franchise Information Access (CFIA) 404 subroutines perform the interface functions between the CAP Main Program and outside data or information. The remaining subroutines shown in the center column of Figure 8 perform the processing and manipulations necessary to the functioning of the CAP 260.

The Packager Data Entry Interface (PDEI) 400 subroutine includes routines that enable the Packager to interactively enter program selections 410, start times of programs 412, price setting 414, transponder allocation 416, and menu editing 418. The PDEI subroutine 400 controls the keyboard and mouse data entry by the packager and runs in concert with the processing and editing subroutines described later.

The Marketing Information Interface (MII) 402 subroutine interfaces the processing and editing subroutines with marketing data. This interface regularly receives programs watched information from billing sites 420, cable

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headends 208, or set top terminals 220. In addition, other marketing information 422 such as the demographics of viewers during certain time periods may be received by the MII 402. The MII 402 also uses algorithms 424 to analyze the program watched information and marketing data 420, 422, and provides the analyzed information to the processing and editing subroutines. In the preferred embodiment, an Executive Information System (EIS) with a yield management subsystem is included in the MII subroutine as described above.

The Cable Franchise Information Access (CFIA) 404 subroutine receives information on cable franchises, as represented at block 426, such as the particular equipment used in a cable headend 208, the number of set top terminals 220 within a cable franchise, groupings of set top terminals 220 on concatenated cable systems 210, distribution of "high-end" cable subscribers, etc. The CFIA 404 generates a cable franchise control signal 428 which is integrated with the program control information 276 output to generate cable headend 208 specific information to be transmitted. The integration algorithm for accomplishing this resides within the Generator subroutine described herein below.

The process program line-up subroutine 430 uses information from the MII 404 and PDEI 400 to develop a program line-up. Importance weighting algorithms and best fit time algorithms are used to assign programs in time slots.

The process menu configurations subroutine 432 determines appropriate menu formats to be used and positions programs on menu screens. Information from the MII 404 and PDEI 400 are used to determine program positions on menus.

The menu display algorithms 434 displays menus as the menus would be seen by the viewer on a large CRT or color monitor.

The editing of menus subroutine 436 works with the menu display algorithm and PDEI 400 to allow the packager to edit menus on-the-fly during viewing of the menus.

The graphical transponder allocation display 438 sends information obtained from the CFIA 404 and PDEI 400 to create graphical displays enabling the packager to comprehend the allocation of transponder space across the entire television delivery system 200.

In a manner similar to the display and editing of menus represented at blocks 434, 436, the packager may utilize the editing transponder allocation subroutine 440 to interactively reallocate assignment of transponder space. In the preferred embodiment, the EIS with yield management may be used by the packager to assist in decisions on allocating transponder space.

The generator subroutine 442 creates the program control information signal for output. The Generator subroutine receives the cable franchise control signal and uses this signal to help create a custom signal for each cable headend 208.

The Packaging Routine 448 obtains and packages the programs, along with the program control information signal 216, for transmission to the transponders.

With continued reference to Figures 7, 8 and 9, the general software flow of the operations center 202 is depicted. The flow can be broken up into modules that apply to parts of the database to allow viewing, editing, and adding records to the database. The software also accomplishes

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database integrity checking by restricting the user to enter only valid data, and by checking for conflicts.

Figure 9 shows some of the software involved in the creation of programs, events and services. This creation occurs prior to or during the processing of the program line-up 430 shown in Figure 8. With reference to Figure 9, a first step is indicated generally at 461 and includes acquiring source materials for program production at the Operations Center 202 (e.g., tape production). Once the source materials are collected 460, and entered into the database "D", they can be used to create programs 462. These programs are made up of source 'cuts' from various video/audio source materials. Once the programs have been generated and entered into the database "D", events, collections of one or more programs, are created 464. Each event is then schedule onto a service 466, with the software checking for conflicts. Each service is given run times, and days, and checked for conflicts. Once the services and events have been created, the event names can be added to the menus 468. The programs for the events and services may be stored at the Operations Center (as shown in Figure 11 at 286). Processing and manipulation of the events or records is depicted generally at 463.

The packager user interface (a portion of 463) for each of the creation modules works substantially identically to each of the other modules to make the interface easy to use and learn. The packager user interfaces forms a portion of the PDEI 400 shown on Figure 8. The browse system 470 is entered first and allows viewing of records, and selection of specific records. The database can be 'populated' by selection of a button, which activates a populate screen. As represented at block 471, this allows details to be deleted,

added or changed for events, programs, and sources. The browse screen also allows access to the edit screen 472, where fields in a selected record can be modified, with conflicts or errors, in scheduling for example, being checked continuously, as at 473 and 474.

In use, the Operations Center 202 of the present invention performs a variety of management functions which can be broken out into five primary areas: (1) cable headend 208 management, (2) program source management, (3) broadcast program management, (4) internal program storage and management, and (5) marketing, management and customer information. A relational database, such as that represented by Figure 10, can be used to maintain the data associated with these areas.

Customer billing is not included in any of the above five areas for the Operations Center 202. Although billing can be handled by the Operations Center 202 (as shown in the database structure 508, 511), it is preferred that billing is handled at a remote location through traditional channels and methods (such as Cable TV billing provided by Telecorp corporation). Extracts of customer purchases will be provided to the Operations Center 202. These extracts of information will be formatted and correlated with customer demographics for marketing purposes by the Marketing Information Interface (MII) 402.

(1) Cable Headend Management

Management of the cable headend 208 includes the following activities: defining the cable headend site; profiling the viewers; determining available set top equipment; defining the concatenated cable systems connected to the cable headend site. This information may be stored as cable franchise information within the Operations Center 202

database by the Cable Franchise Information Access routine 404. Such information can be compiled and maintained in a relational database (described below and shown as 328 in Figure 11).

(2) Program Source Management

Source programs will be provided by a variety of networks. Information from the contractual records to the actual program tapes should be maintained and includes: tracking of property rights; tracking and profiling source tapes; profiling source providers. A relational database (such as "D" shown in Figure 9) can be used, for example, that identifies and correlates programs sources. Programs may be received from various rights holders, and such a database would track the person or entity that owns the rights to each program at issue. Other data could be maintained relating to program cuts (a program cut is a portion of a program) that specifies, for example, the program from which the cut is taken. Information relating to time slot allocations, menu entries, and categories, and channel assignments are also maintained in the relational database.

Program services represents a purchasable time slice which is occupied by a type of programming. Each time slice has multiple time constraints. Using the purchasing of through time slices allows for great flexibility. An infinite number of program and time slice combinations are possible. Preferably, services are created using the software shown in Figure 9, particularly the service creation routine 466. For a service to become available at a cable headend 208 site, it is mapped to the site. At the time of mapping the program service is assigned a program channel.

Program services are defined by the following fields:

Service ID System generated unique ID

Description	Describes the service. The description will allow the packager to easily assign a service to a broadcast program.
Type	Defines the type of service. Current service types include YCTV™, Grid, Network and Other.
Network ID	Relevant for network services. (examples: ABC, NBC, DISC™)
Broadcast Event	Relevant for a YCTV™ service. Identifies the current YCTV™ broadcast event assigned to the service.
PICON File	Name of the picture icon (PICON) assigned to the service. This picon is displayed for example on the buy screen for a pay per view event.
Expiration Date	Expiration date of the service. Removes the service from the service selection list.
Day Start	Each service is a series of days within a week. This represents the starting day. (example: Monday)
Day Stop	Represents the last day in the interval.
Time Start	Within a day, the service has a time period. This field represents the start of the period.
Time Stop	Represents the end of the time period.
Required Tape	If stored tapes are required, the number of tapes required by the service.

(3) Broadcast Program Management

Broadcast program management is one focal point of the data management system. The issues of product, price, promotion and packaging are addressed at this level.

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Decisions in these areas will affect the actual programming that will be shown to the viewers. Information on description of the content of each program event, program scheduling, broadcast program pricing, TV/set top information flow and information on how broadcast programs will be mapped to viewer channels should be included in the database. Preferably, the EIS system described below will access this data and assist in the Broadcast Program Management.

(4) Internal Program Management

Information on internally stored programs at the Operations Center 202 should also be maintained. This will allow the Operations Center 202 to assemble electronically stored programs, CD stored programs and program tapes, and ensure the quality of programs and location of programs.

(5) Marketing And Customer Information

Last, and important, marketing and customer information should be maintained. In order to effectively manage the operations, information is constantly needed on market conditions. Information is needed on the existence of markets for certain programs. The following type of information must be maintained in a Marketing and Customer Information data base: demographic profile of viewers, viewer buy information; correlation of demographic information with buy information, information rapid restructuring of program mix in response to data analysis. As a subscriber uses the system, this viewer information or viewer log data can be stored and maintained in relational database. The Marketing Information Interface 402 gathers the marketing information and indexes the information for inclusion in the Marketing and Customer Information database. An example of the type of information that is needed in this data base is a viewer profile.

The viewer profile data fields are an example of typical fields required in the databases. Definitions of various fields are listed below. The primary purpose of profiling the viewer is to acquire marketing information on the viewer's response to available selections. Ancillary information will be available including the actual program and channel selections of the viewer. Information tracked within the viewer's profile includes:

Viewer ID	A unique identifier generated by the system.
Set-Top Types	Boolean field which identifies the type of set top used.
Headend ID	Links the viewer to a particular cable site.
Site Assigned ID	Viewer ID assigned by the cable site.
Set-Top ID	ID of the viewer's set top.
Hookup Date	Date physical hardware is connected.
Survey Date	A demographic profile will be conducted on each user. The following fields represent this demographic information. The data represents when the interview survey was completed.
Viewers Age 2-5	Boolean field if the household has viewers between 2 and 5 years of age.
Viewers Age 6-11	Boolean field if the household has viewers between 6 and 11 years of age.

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Viewers Age 12-17	Boolean field if the household has viewers between 12 and 17 years of age.
Tape Rental $	Approximate amount spent on tape rentals on a monthly basis.
PPV $	Household average pay-pre-view expenditures per month.
Income	Annual household income.
Zip Code	Self-explanatory.
Cable Tier	Level of cable service purchased.
Number of TV's	Self-Explanatory.
Years with Cable	Self-Explanatory.
Occupancy	Number of people in household.
Highest Education	Highest level of education of any member of the household.

The compilation of viewer demographic information has an impact on decisions based on marketing. The names of the heads of household are not used due to Privacy Act considerations. Completion of demographic data can be accomplished referencing the cable site assigned ID or the system generated ID. There are numerous variations to the field definitions listed above such as different age groupings.

To maintain the database at the Operations Center 202, a data base server, communications server, user work station or stations 262, or the suitable equivalent thereof, are needed. The database server performs the following functions: it is the repository for data base files, event logging, event scheduling (example, automated download of files to headends 208), multi-user services, data base server services, and data base security access.

The communications server performs the following functions on data base data: integrity check, filtering,

processing, downloading to headends 208, uploading from headends 208, and uploading from remote location.

User work stations 262 perform the following tasks: creation, deletion and access of all database data, system administration and report generation. Database manipulations are performed through the user workstations or remotely. The database structure is designed to support multiple users performing multiple tasks simultaneously. The preferred embodiment includes a network of user workstations 262. The workstations 262, through user interface software, access data within database files on the database server.

For example, once the appropriate database data has been generated for downloading to a cable headend 208, the communications server is instructed to perform the download. Although this may be done manually at the communications server, it is preferred that the communications server automatically send information to the cable headends 208. The communications server retrieves required data from the database server, filters out any data not associated with the specified headend 208, and performs data integrity checks, creates data files to be downloaded and then downloads the data file via modem (or other means such as the DCPU 270). While the communication server is connected with the headend 208, it also requests any data that the headend might be holding for the Operations Center 202. This may consist of cable headend 208 event log information, set top billing and viewer log data on programs watched, etc.

The communications server may also assist in retrieving information from other remote sites such as remote billing and statistic sites. For example, if a location is being used for billing purposes, the communications server may retrieve

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viewer log data. Also, the communications server may retrieve billing and viewer log data from actual set top converters in the field. Once the data is retrieved it is sent to the database server. Thus, in the preferred embodiment the communications server will support incoming information via modem or otherwise.

The basic database structure at the Operations Center 202 consists of multiple tables. Database data tables contain one or more data records, each with multiple fields. Each field contains a piece of data about the particular record. This data may be general information, such as a numeric value, date or text string, or it may be a reference to another database record relating one piece of data to another. Database index files contain information about associated data files to allow for improved data retrieval. The database index file makes retrieval of information much quicker.

In an alternative embodiment where some television programming begins with the procurement of source material in the form of tapes or CDs, additional data about the tapes or CDs may be stored in the Operations Center database. Each tape or CD may have a database record associated with it, source tape data file. Each tape may contain multiple cuts of which each cut has an associated record in a source tape detailed data file. Additionally, a company data file may contain individual records for the rights of the holders of the source tapes as well as company information about cable headends 208. In this alternative embodiment with tapes, programs may be created from multiple tapes using multiple tape source cuts. The programs created by these source cuts may be stored and the individual cuts that make up the programs may be stored in a database record called "program tape detail." Events may be created that consist of more than

one program and details on individual programs that make up these events may be stored in a database file called "event detail." Using this embodiment, events may be sold to subscribers.

Figure 10 and the description below is a more complete example of a database structure that can be used with the present invention. Each database file is listed below along with a description, record field details and explanation of relationships. The software data structures are defined after the description of the database structure.

The SCHEDULE Database file 501 contains scheduling data for a single day. There are many schedule files, one for each day of schedule information. The actual filename for a given days schedule is assigned under computer control. Schedules are broken up into single days so they may be easily created, dispatched and archived. A cross-reference of days to computer generated filenames is kept. Each scheduled event (either a program or a preview) has its own record entry and unique schedule ID This record references the corresponding scheduled program or preview and program type (either program or preview). The service to carry the scheduled program is also referenced. The starting date and time is also specified. Program duration is stored as a program attribute and is not included here. Note that program, preview and service records must be provisioned before they may be referenced in a schedule record.

Another SCHEDULE Database file 500 contains a cross-reference of starting dates data to computer generated filenames.

The PROGRAM Database file 502 contains Program records are contained in another database file 502, with each record representing a source program. Each program has a

unique program ID. If the program has a corresponding preview, it is also referenced. Program category and price are also referenced. The structure of the program category database may be modified if multiple categories per program are desired. Program name, description and duration are also given. Note that preview, program category and price category records must be provisioned before they may be referenced in a program record.

The SERVICE Database file 503 contains service records with each record representing an available service. A service may be thought of as a virtual video channel. Virtual channels are non-existent channels which are mapped or created by hardware and software and is described in co-pending patent application Ser. No. PCT/US93/11606, entitled ADVANCED SET TOP TERMINAL FOR A CABLE TELEVISION DELIVERY SYSTEM, incorporated herein by reference. Services are then mapped into local headend channels. Since initial distribution of video source material may be by "Federal Express" instead of a video channel, a service ID is used to identify the virtual channel being used for the desired service, "60 Minutes" could be distributed and then be mapped into any desired local headend channel. The service database exists at both the national site and at each local headend 208. Every service has a name, call letters and a description of the service. Every service also has an assigned local channel, "A" tape (or CD) machine ID and "B" tape (or CD) machine ID. Note that these last three parameters only apply to the service databases at the local headends 208. The local headend service database performs an equivalent function of a "channel map". For a further description of the cable headend function, see co-pending patent application Ser. No.

PCT/US93/11616, entitled NETWORK CONTROLLER FOR A CABLE TELEVISION DELIVERY SYSTEM, filed by the same assignee.

The PREVIEW Database file 504 contains preview records with each record representing a source preview. A preview is like a program that is scheduled and distributed over a service. It differs from a program in that multiple previews may be distributed over the same service at the same time. Also, previews are free. Each preview specifies its location on the TV screen. This is generally done by selecting from a menu of valid screen positions. Unlike programs, previews do not reference program and price categories or other previews.

The PROGRAM CATEGORY Database file 505 contains program category records with each record representing a valid program category. Examples of program categories are movies, sports, educational and news. Multiple program categories per program may be accommodated if desired with simple changes to the database structure.

The PRICE CATEGORY Database file 506 contains price category records with each record representing a valid price category. Price categories are used to provide pricing consistency throughout the system. It also provides flexibility at the headend 208 to price various categories differently should this be desired. For example, distributed movies may be assigned the price category "movie" at the national site. Each headend 208 could then charge differing amounts for their movies by manipulating their local price category database. If a current price structure needed to be changed, the change would be made once in the price category database instead of in each program record.

The EVENT LOG Database file 510 contains event data for a single day. There are many event files, one for each day of event information. The actual filename for a given days events is assigned under computer control. Events are broken up into single days so they may be easily archived. A cross-reference of days to computer generated filenames is kept.

Each event record contains a unique ID, an event code, ID of the process that generated the event and date/time stamp of the event.

The EVENT LOG FILENAME Database file 507 contains a cross-reference of start date to computer generated filenames.

The VIEWER LOG Database file 512 contains viewer log data for a single day. There are many viewer log files, one for each day of viewer log information. The actual filename for a given days viewer log data is assigned under computer control. Viewer log data is broken up into single days so it may be easily archived. A cross-reference of days to computer generated filenames is kept.

Each event record contains a unique ID, an event code, ID of the process that generated the event and date/time stamp of the event. The Marketing Information Interface 402 accesses the VIEWER LOG Database file as necessary to retrieve "program watched" information 420.

The VIEWER LOG FILENAME Database file 509 contains a cross-reference of date to computer generated filenames.

The BILLING Database file 511 contains billing data for a single day. There are many billing files, one for each day of billing information. The actual filename for a given days billing data is assigned under computer control. Billing data is broken up into single days so it may be easily archived. A

cross-reference of days to computer generated filenames is kept.

Each event record contains a unique ID, an event code, ID of the process that generated the event and date/time stamp of the event.

The BILLING FILENAME Database file 508 contains a cross-reference of start date to computer generated filenames.

The NEWS FILENAME Database file 509 contains a cross-reference of date to computer generated filenames.

The SET TOP Database file 517 contains set top converter records with each record representing a unique set top converter. Each set top is assigned to a headend 208. Set-top type, software version and serial number is also stored. Note that headend records must be provisioned before they may be referenced in a set top record.

The HEAD END Database file 518 contains headend records with each record containing headend 208 data specific to a single headend 208. Each headend 208 has a name, contact name, address, phone number, modem information, time zone (relative to GMT) and daylight savings time flag. This information may be stored in a separate database file called Cable Franchise Configuration (shown as 328 in Figure 11).

The NATIONAL Database file 515 contains a single record containing national site information. This includes site name, contact, modem information, time zone and daylight savings time flag.

The CUSTOMER Database file 516 contains customer records with each record containing customer data specific to a single customer. This includes personal information

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(name, address, phone number, . . .) and assigned set top converter.

The TAPE MACHINE Database file 519 contains video tape or CD machine information. Each machine is assigned a unique ID, its control port address, its A/B switch address (if present), its assigned service and an A/B assignment. This database is only located at the headends 208.

The MESSAGE Database file 514 contains available system messages. They are detailed in nature and are pre-programmed. Each message has an associated function. To schedule a desired function, the appropriate message is referenced in the scheduler task list.

The TASK Database file 513 contains scheduled tasks to be performed periodically. It is used in conjunction with a scheduler process to control computer system functions such as data dispatch and retrieval, archival and database maintenance. Each task is assigned a unique ID, start time, stop time, period in minutes) and task type (single, periodic, round-robin). Functions are actually scheduled by scheduling the appropriate message to be sent to the appropriate process. Available messages are kept in a separate database. Note that these messages must be provisioned before they may be referenced in a task record.

E. System Operations

Figure 11 shows the basic operations that must occur in order for the packaged signal to be sent to the satellite 206. External digital 280 and analog signals 282 must be received from television programming sources and converted to a standard digital format by a converter 284, as described above. Also within the Operations Center 202, stored programs 286 must be accessed using banks of looping tape machines or other video storage/retrieval devices, either

analog or digital, and converted to a standard digital format by the converter 284 prior to use by the CAP 260.

The programmer or program packager utilizing the CAP 260 must input a variety of information, including program information, in order to allow the CAP 260 to perform its function of generating program control information and packaging programs. Some of the information required by the CAP 260 are the date, time slots and program categories desired by the television programmer.

The CAP 260 system includes one or more CPUs and one or more programmer/packager consoles, together identified in Figure 4 as workstations 262. In the preferred embodiment, each packager console includes one or more CRT screens, a keyboard, a mouse (or cursor movement), and standard video editing equipment. In large Operations Centers 202, multiple packager consoles 262 may be needed for the CAP 260.

As shown in Figure 12, the first step in the operation of the CAP 260 is selecting the type of programming 300 which will be packaged. Basically there are six broad categories in which most television programming can be classified: static programming 302, interactive services 304, pay per view 306, live sports specials 308, mini pays 310, and data services 312. Static programs are programs which will show repetitively over a period of time such as a day or week. Static programs include movies showing repetitively on movie channels, children's programs, documentaries, news, entertainment. Program services, with defined start and end time periods, behave like static programs and may be handled in a similar manner.

Interactive services 304 typically include interactive programs using the Vertical Blanking Interval (VBI) or other

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data streams synchronized with the programming to communicate interactive features (such as those used in education), and games. Using this feature, interactive home shopping programs are possible. Pay per view 306 are programs which are individually ordered by the subscriber. After ordering, the subscriber is authorized to access the program for a limited time, (e.g. three hours, two days, etc.). Live sports specials are live events usually related to sports which subscribers are unlikely to watch on taped delay.

Mini pays 310 are channels to which existing set top converter boxes (not shown) and the set top terminals 220 of the present invention may subscribe. The subscriptions for mini pays 310 may be daily, weekly, or monthly. An example would be the Science Fiction channel. Data services 312 are services in which information is interactively presented to the subscriber using a modem or other high rate of speed data transfer. Some examples are Prodigy, services for airline reservations, and TV guide services (e.g. TV Guide X*PRESS™, InSight™, etc.). Data could also include classified or other forms of advertising.

The packager begins the CAP processing using the Packager Data Entry Interface Software 400 and a workstation 262. After selecting the type of programming, the packager must identify a pool of programs (within a category) to be packaged. The next CAP step varies for different program categories. For the category of live sports 308, additional program interstitial elements 314 such as promos and other sports news may be added before further processing. For the live sports 308, static (or program service) 302, interactive services 304 and pay per view 306 categories, the next CAP 260 step is for one television program to be selected 316. This is followed by each program individually being assigned

dates to be played, a start date (for continuous play) and start times 318. Many dates and start times may be assigned to any given program. Using this methodology, programs may be purchased by viewers in time slices (e.g., one week). The program information for these categories may then be processed for allocation of transponder space and setting of prices, as indicated at blocks 320, 322, respectively.

Mini pays 310 and data services 312 require less processing by the CAP 260. After identifying the mini pays 310, the CAP 260 may proceed to allocation of transponder space and pricing, block 320, for the mini pays 310. Data services in the preferred embodiment generally do not require allocation of transponder space and generally do not require price setting. The information for data services 312 may be directly processed for menu configuration, block 324. In alternate embodiments, the data services 312 may be processed through these portions of the CAP 260 program.

The CAP 260 uses an interactive algorithm 416 to allocate transponder space 320 and set prices 322. The factors weighed by the algorithm are: 1. buy rates of the program, 2. margin of profit on the program, 3. length of the program, 4. any contractual requirement which overrides other factors (such as requirement to run a specific football game live in its entirety). The information on buy rates of the program may be obtained by the Marketing Information Interface 400 from a Central Statistical and Billing Site, a Regional Statistical and Billing Site, the cable headend 208 or directly from the set top terminals 220 as will be described later. The CAP 260 must consider the priority levels of programming (e.g., Figure 16) when allocating transponder space. Particularly, as in the preferred embodiment, transponders are assigned to three specific priority levels.

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The CAP may automatically (without packager intervention) access the MII 400 and the EIS to obtain necessary decision making information on transponder allocation.

Following transponder allocation and price setting 320, 322, respectively, the CAP 260 proceeds to menu configuration 324. The positioning of programs within the menu configuration 324 can have an effect on subscriber buy rates for the program. (The processing of menu configurations 432 is also described in reference to Figure 8.) Therefore, an algorithm accounting for either a manually assigned program importance or a calculated weight of the program importance is used to determine each programs position within the menu scheme. For instance, a popular program with a high profit margin may be assigned a high weight of importance and shown in a prominent place in the menu scheme. Alternatively, a high profit program with sagging sales may be manually assigned a prominent place in the program schedule to increase sales.

After a series of entries by the programmer/packager at the Operations Center 202, the CAP 260 displays draft menus 434 or schedules (including priority levels) for programming. The packager may now manipulate the menus and schedules and make changes as necessary 436. After each change, the packager may again display the menus or schedules and determine if any more changes are necessary 436. The packager may use the Executive Information System with yield management as described below to assist in editing the menus and schedules. When the packager is satisfied with the menu configuration 324 and scheduling of television programs, the packager may then instruct the CAP 260 to complete the process.

After menu configuration 324, the CAP 260 may begin the process of generating a program control information signal 326 (see also Figure 8 software description at 442 and 404). In order to generate program control information signals 326 which are specific to a particular cable headend 208 system, the CAP 260 incorporates cable franchise configuration information 328. In the preferred embodiment, unique cable franchise configuration information 328 is stored at the Operations Center 202. The cable franchises upload changes to their specific franchise information 426 from time to time to the Operations Center 202 for storage 328. Preferably, a separate CPU (not shown) handles the management of the cable franchise information 328. From the stored cable franchise information 328, the CAP 260 generates a cable franchise control information signal 330 unique to each franchise.

Using the unique cable franchise control information signals 328 and the menu configuration 324 information, the CAP 260 generates the program control information signal 276, as shown at function block 326. The program control information that is unique to a particular cable franchise may be identified in various ways such as with a header. With the header identification, the cable headend 208 may extract the portions of the program control information signal 276 it needs. Now, the CAP 260 may complete its process by electronically packaging the programs into groupings 280 for the signal transmission and adding the program control information 276 to the packaged programs 334 to form a single signal for transmission. Through manual entries by the packager (PDEI 400) or by comparing against a list of programs, the CAP 260 will determine whether the programs

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are arriving from external sources 280 or sources internal 286 to the Operations Center 202.

Referring back to Figure 11, upon completion of the CAP's functions, the Operations Center 202, or the uplink site 204 (Figure 1), compresses 288 (if necessary), multiplexes 290, modulates 292 and amplifies 294 the signal for satellite transmission 296. In a basic embodiment, the CAP 260 will also allow entry of time slots for local avails where no national programming will occur.

Figure 13 is a more detailed flow chart 340 of some of the functions performed by the CAP 260 after an initial program schedule has been entered and menu configurations generated. This flow chart highlights that some of the functions described earlier in reference to Figures 8, 9, 11 and 12 can be performed in parallel. The flow chart 340 shows six basic functions that are performed by the CAP 260: (1) editing program schedule for local availability 342 (only for non-standard services, i.e., those services that are not national cable services); (2) generating program control information signals 344; (3) processing external programs 346; (4) processing internal programs 348; (5) processing live feeds 350; and, (6) packaging of program information 352. In an alternate embodiment, the CAP 260 is capable of incorporating local programs and accommodating local availability for local television stations.

Following completion of the programming scheduling (accounting for local availability if necessary) and menu generation 342, the CAP 260 may perform three tasks simultaneously, generating program information signals 344, processing external programs 346 and processing internal programs 348.

The CAP 260 automatically identifies external programs feeds 356 and identifies which external feed to request the external program 358. The CAP 260 gathers and receives the external programming information 280, 282 (Figure 11) and converts it to a standard digital format 360 for use. The CAP 260 also identifies internal programs 362 (and defined program services), accesses the internal programs 364 (and program services), and converts them to a standard digital format 366, if necessary. In addition, the CAP 260 identifies live signal feeds 368 that will be necessary to complete the packaged programming signal 370. In its last task depicted in Figure 13 the CAP 260 completes the packaging of the programs and combines the packaged program signal with the program control information signal 352, amplifies the signal 354 and sends it out for further processing prior to uplink.

F. Allocation of Cable System Bandwidth

One of the primary tasks of the Operations Center 202 is, with assistance from the cable headends 208, effective utilization of available bandwidth from the Operations Center 202 to the subscriber homes. Figure 14 shows effective allocation of 750 mHz of bandwidth (1 mHz to 750 mHz) for television programming. In Figure 14, bandwidth is allocated for both analog 226 and digitally compressed 227 signals. In the preferred embodiment, the bandwidth is divided so that each category of programs receives a portion of the bandwidth. These categories correspond with major menus of the set top terminal software. The representative categories shown in Figure 14 include: (1) high definition TV (HDTV) made possible through the use of compression technology, (2) A La Carte Channel category which provides

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specialty channels for subscription periods such as monthly, and (3) pay-per-view.

Figure 15 shows a chart 228 of compressed channel allocation for a variety of programming categories 229 that have been found to be desirable to subscribers. By grouping similar shows or a series of shows into blocks of channels 230, the system 200 is able to more conveniently display similar programming with on-screen television menus. For example, in the movie category, which has the greatest allocation of channels, the same movie may be shown continuously and simultaneously on different channels. Each channel starts the movie at a different time allowing the subscriber to choose a more suitable movie starting time (e.g., every 15 minutes).

In order to accommodate cable TV systems that have different bandwidths and channel capacities, the television programming and television program control information may be divided into parts such as priority one, two and three. The large bandwidth cable TV systems can accommodate all the parts of the television programming and all parts of the television programming control information. Those cable TV systems with a more limited bandwidth are able to use the program delivery system 200 by only accepting the number of parts that the cable system can handle within its bandwidth.

For instance, as is shown in Figure 16, three cable television systems with different bandwidths may use the program delivery system 200 simultaneously with each system accepting only those parts of the information sent which it is capable of handling. Priority one television programming and menus 240 are accepted by all three systems. Priority two television programming and menus 242 are not accepted by the cable television system whose

capacity is the smallest or in this case 330 mHz (40 channels) system. Priority two television programming and menus 242 are accepted and used by the two larger capacity cable television systems shown. Priority three television programming and menus 244 are only used by the largest capacity television system which is capable of handling all three parts -- Priority one, two and three programming and menu information.

With this division of television programming and menus, the program delivery system 200 may be utilized simultaneously by a variety of concatenated cable systems 210 (depicted in Figure 1) with varying system capacities. By placing the heavily watched or more profitable programming and menus in the priority one division 240, both users and owners of the cable TV systems will be accommodated as best as possible within the limited bandwidth.

Figure 17 shows three different cable headend 208 systems, each system receiving the entire satellite signal from the Operations Center 202 and stripping those parts of the signal which cannot be handled by the local cable system due to bandwidth limitations. In this particular embodiment, the three local cable television systems shown have bandwidth limitations which correspond with the bandwidth limitations depicted in the previous Figure 16. As the bandwidth decreases, the programming options available to the viewer in the exemplary on-screen menu decreases. Using this preferred embodiment, the Operations Center 202 is able to send one identical signal to the satellite 206 that is sent to all the cable headends 208. Each cable headend 208 accepts the entire signal and customizes the signal for the local cable system by stripping those portions of the Operations Center signal that are unable to be handled by the local cable system.

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An alternate embodiment (not shown) requires the Operations Center 202 (and uplink sites 204) to send different signals for reception by different capacity cable headends 208.

There are several ways in which a cable headend 208 may strip the unnecessary signal from the Operations Center 202. A person skilled in the art will derive many methods from the three examples discussed below. The first method is for the signal originating from the Operations Center 202 (and uplink site 204) to be sent in portions with each portion having a separate header. The respective cable headend 208 would then recognize the headers and transmit to the concatenated cable system 210 only those signals in which the proper headers are identified. For example, using three concatenated cable systems shown in Figure 17, the headers may be "001," "002," and "003." A wide bandwidth concatenated cable system can accept program signals with all three headers, while the narrowest bandwidth concatenated cable system may only be able to accept signals with a "001" header. For this first method, a central Operations Center 202 must divide the program signal into three parts and send a separate leading header before each signal for each part. This method requires has the additional signal overhead of a header on the program signal. The header would be transmitted from time to time as necessary.

A second method requires a set of transponders to be assigned to each priority level and the cable headend 208 to route signals from the transponders corresponding to the proper priority level for the concatenated cable system 210. For example, if there are three priority levels and eighteen transponders, transponders one through nine may be assigned to priority level one, transponders ten through

fourteen priority level two, and transponders fifteen through eighteen assigned to priority level three. Thus, a concatenated cable system 210 capable of operating only at priority level two, would only receive signals from transponders one through nine, and ten through fourteen from the respective cable headend 208. The program signal from transponders fifteen through eighteen would not be transmitted to the priority level two concatenated cable system. This method requires the Operations Center 202 to properly assign programs to transponders by priority level. This can be accomplished by the CAP using the software described earlier (e.g., Figure 8 at 438 and 440).

The third and the preferred method is for the cable headend 208 to pick and choose programming from each transponder and create a customized priority one, two, and three signal with chosen television programming. The cable headend 208 would then route the appropriate customized signal to each part of the concatenated cable system 210 that the cable headend 208 serves. This third method requires that the cable headend 208 have a component, such as the combiner (described in greater detail in a co-pending U.S. Patent Application entitled Digital Cable Headend For A Cable Television Delivery System, Ser. No. PCT/US93/11615, filed Dec. 2, 1993, owned by the assignee of the present application) which can select among programs prior to combining the signal for further transmission on a concatenated cable system 210. The third method requires the least coordination between Operations Center 202 and the cable headend 208.

In addition to dividing the television programming and menus into parts, the Operations Center 202 of the preferred embodiment is also capable of dynamically changing the

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bandwidth allocation for a particular category of programming. Figure 18 depicts this dynamic change in bandwidth allocation from a typical week day prime time signal 250 to a Saturday afternoon in October signal 252 (during the college football season). Figure 18 highlights the fact that the bandwidth allocated to sports is limited to eight selections 251 during week day prime time 250 but is increased to sixteen selections 253 during a Saturday afternoon in October 252. This dynamic increase in bandwidth allocation allows the system to accommodate changes in programming occurring on an hourly, daily, weekly, monthly, seasonal and annual basis.

In addition to dynamically allocating bandwidth for programming categories, the Operations Center 202 can also dynamically change the menu capacities in order to accommodate the change in programming and bandwidth. For example, on a Saturday afternoon in October 252, the major menu for sports may include a separate subcategory for college football. This subcategory would, in turn, have a separate submenu with a listing of four, six, eight, or more college football games available for viewing. In order to accommodate this dynamic menu change, the Operations Center 202 must add a submenu listing to the major sports menu, create a new or temporary submenu for college football, and allocate the necessary menu space on the college football submenu.

Once the television programs have been packaged and a program control information signal is generated to describe the various categories and programs available, the packaged programs are then digitized, compressed, and combined with the program control information signal. Upon the signal's departure from the Operations Center 202 the breakdown

into categories is insignificant and the signal is treated like any other digitally compressed signal

G. Compressing and Transmitting Program Signals

After packaging, the packaged television program signal is prepared for satellite transmission and sent from the Operations Center 202 to the cable headend 208 via satellite 206. Depending on the specific embodiment, the television program signal may need to be compressed, combined/multiplexed, encoded, mapped, modulated, upconverted and amplified. This system, which is intended to be compatible with existing C and Ku Band satellite transmission technologies, accepts video, audio and data signals ranging in signal quality, and input from a number of sources.

As shown in Figure 3, in the preferred embodiment, the packaged program signal will be treated at a master control uplink site 211 prior to being transmitted to the satellite 206. Following compression the channels must be multiplexed for each transponder carrier and sent to the satellite 206 dish that will provide the uplink. A variety of multiplexing schemes may be used in the system. In some situations, it may be advantageous to use different multiplexing schemes in different parts of the overall system. In other words, one multiplexing scheme may be used for satellite transmission 206 and a second remultiplexing scheme for the land transmission. Various satellite multi-accessing schemes and architectures can be used with the system, including both single channel per carrier (SCPC) frequency division multiplex (FDM) and multiple channel per carrier (MCPC) time division multiplexing (TDM). Time division multiplexing is the more desirable scheme. Once the signal has arrived at the uplink or master control site

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211, it must be modulated, upconverted, and amplified. Various types of satellites and transponders capable of handling digital signals may be used in this cable television packaging and delivery system. One of the achievements of the present invention is effective utilization of digital compression technology by packaging television programs into categories that allow easy access to television programs by consumers. With current digital compression techniques for video, the typical 50-channel capacity cable satellite receiving system can be increased to 300 channels.

Presently, one transponder is used for each satellite delivered channel. The preferred embodiment uses 18 satellite transponders and compression ratios of 4:1 to 8:1 to achieve a capacity of 136 satellite delivered channels. More transponders or higher compression ratios can be used to deliver up to the channel capacity of any existing cable system.

An example of a satellite that may be used is the AT&T Telstar 303. The signal is transmitted from the satellite 206 to the cable headend 208 where a computer system including a digital switch treats the signal and delivers it through cables to a subscriber's home. In alternate embodiments, multiple Operations Center 202 and multiple uplink sites 211 can be simultaneously utilized.

H. Cable System Use of Control Signal

Figures 19 through 21 depict sample menu screens produced by the set top terminal 220 using the program control information signal 276. Figure 19 shows a menu which enables the viewer to select a program category or program service from among a choice of eight program categories. Figure 20 shows a menu for the viewer to select a hit movie from among ten hit movies. Figure 21 provides

information about a movie (or event) and enables a viewer to order the movie for viewing.

Figure 19 through 21 show text generation by the set top terminal 220. This text is generated using information received via the program control information signal. Figure 20 shows the text 380 generated for the hit movies major menu. In the preferred embodiment, text 380 such as that shown in Figures 19 through 21 is generated separately by a text generator (not shown) in the set top terminal unit 220. Those portions of the text that generally remain unchanged for a period of weeks or months may be stored in EEPROM or other local storage. For example, the text "HIT MOVIES from" 382 will consistently appear on each hit movies' major menu. This text may be stored on EEPROM or other local storage. Further, text such as that which appears at the lower center part of the screen "PRESS HERE TO RETURN TO CABLE TV" 384 appears many times throughout the menu sequence. This text may also be stored locally at the set top terminal 220. Text which changes on a regular basis, such as the movie titles (or other program selections), will be transmitted to the set top terminal 220 by either the operations center 202 or the cable headend 208. In this manner, the cable headend 208 may change the program selections available on any major menu modifying the program control information signal sent by the operations center 202 and transmitting the change. The network controller 214 of the cable headend 208 generally modifies the program control information signal and transmits the set top terminal control information signal (STTCIS). It is preferred that the text 380 is generated by the set top terminal 220 separately from the graphics because the text can be stored locally in a more compact manner requiring less storage space at the set

top terminal 220. In addition, it allows for easy communication of text changes from the operations center 202 or cable headend 208 to the set top terminal 220.

Figures 19 through 21 show the use of day, date and time 386 information on menus. This information may be obtained in a variety of ways. The day, date, and time information 386 may be sent from the operations center 202, the cable headend 208 (signal processor or network controller 214), the uplink site, or generated by the set top terminal unit 220 internally. Each manner of generating the day, date, and time information 386 has advantages and disadvantages which may change given the particular embodiment and costs. In the preferred embodiment, the day, date, and time 386 are generated at a central location such as the operations center 202 and are adjusted for regional changes in time at the cable headend 208.

In order for the set top terminal 220 to generate submenus for subcategories of categories shown in Figure 19 (which relate to the content of the programs), and to generate menus for movies such as Figure 21, the terminal must receive information on the content of the programs from the Operations Center 202 (via the cable headend 208). Normally the set top terminal 220 would receive this information in the form of the program control information signal (or STTCIS). As shown figure 21, in addition to the text needed for these program menus, video or program scenes are also necessary.

Live video signals may be used in windows of certain menus such as Figure 21. These video signals can be sent via the program control information signal, STTCIS, or can be taken off channels being transmitted simultaneously with the menu display. If the video signal is taken off a channel, less

information needs to be sent via the program control information signal. However, this technique requires that separate decompression hardware be used for the program control information and the channel carrying the video. Separate decompressors for the video signals and program information signal allows for the greatest flexibility in the system and is therefore the preferred embodiment. A separate decompressor also assists in assuring that the switch from menus to television programming is smooth and without any significant time delay.

Live video for menus, promos or demos may be sent to the set top terminal 220 in several ways: a) on a dedicated channel, b) on a regular program channel and scaled to size, c) sent along with the program control information signal, etc. However, in the preferred embodiment, a great deal of short promos or demo video are sent using a split screen technique on a dedicated channel.

Using a split screen technique, any number of different video clips may be sent (e.g., 2, 4, 6, or 8 video clips). To show the video clip on a menu, the video must either be scaled and redirected to a video window on a menu screen or a masking methodology can be used. Masking involves playing the entire channel of video (all 2, 4, 6, or 8 split screens) in background and masking the unwanted video clip portions of the split screen by playing the menu in foreground and overlaying the unwanted background video. Masking is the least expensive method because it does not require any special hardware and it increases video throughput to the set top terminal 220. However, using the masking technique without any video redirecting causes each video clip to be located in a different position on the screen. It also requires the masking to be different for each video clip and makes

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consistent format difficult. On the other hand, scaling and redirecting video is generally difficult, expensive and requires additional hardware.

In order for the Operations Center 202 to prepare the promo video signal to be sent to the set top terminal 220, the Operations Center 202 must first identify the duration and actual video cut to be used for each promo and its position within the promo video signal. This information is maintained within the Operations Center 202 database. When it is time to produce the promo video signal (either to tape or to broadcast), each promo cut is scaled, positioned and combined with the other promos to form the single promo video signal. This is performed by readily available commercial equipment. Each promo is run repeatedly while the promo video signal is being generated. The audio signals of the individual promo cuts may be combined into the promo video signal audio tracks based upon the number of audio tracks available. The mapping of the audio tracks to the promos is also stored in the Operations Center database. Additionally, the mapping of promos to the programs that they are previewing is also stored in the Operations Center database. All promo database data is made available to the set top terminal 220 through the STTCIS.

In the preferred embodiment, the Operations Center 202 transmits six video/graphic promos for advertising purposes all on one channel. The throughput of the video/graphics on a single channel can be increased through the use of digital compression techniques. The set top terminal 220 uses either video scaling and redirecting techniques or masking to utilize the six video scenes. Although the set top terminal 220 actually performs the manipulation of video as necessary to generate the "live"

menus for the subscriber, the appropriately prepared video signals must be formed and sent by the Operations Center 202 to the set top terminal 220.

If a promo for a given program is available at the set top terminal 220, the viewer may command the set top terminal 220 to display the promo. Generally, this is done through program selection from a menu screen by the subscriber. The selected program is referenced to information about available promos and allows the set top terminal 220 to tune to the proper channel, select the appropriate menu overlay mask based on the promos position and switch on the audio track(s) if they are available. The promos position on the screen dictates the displaying of the "live" text (refer to the video window of Figure 21). The program associated with the currently selected promo may be purchased from this menu screen. Events, services and slices of time may be purchased from promotional menus.

Management of promo video signals at the Operations Center 202 is similar to that of other programs except that more information is needed in order to specify the details of the promo video signal. The broadcasting of the promo video signal is identical to the broadcasting of a video program.

In order to limit the amount of bandwidth needed to transmit the program control information signal, various compression techniques employed for non-video may be used such as block coding, contour coding, blob encoding, and run-length encoding. Further, the program control information signal may be divided into text and graphics, or video, text and graphics and then recombined at the set top terminal 220 using a text generator, graphics decompression, and video decompression as necessary.

As shown in Figure 2, an analog cable TV system 205 can continue to exist alongside and within the digitally compressed system of the present invention. The digital transmissions do not effect the analog system. In fact, the analog cable signal may be transmitted simultaneously on the same cable as the digital signal. Cable headends 208 may continue to supply subscribers with local channels in an analog signal format.

In the preferred embodiment, the Operations Center 202 and uplink 204 (Figure 1) or master control site 211 (Figure 3) are collocated. However, the Operations Center 202 and uplink site 204 may be located in different geographical places. Also, functions and equipment within the Operations Center 202 may be remotely located. For instance, the program storage may be at a different site and the programs may be sent to the CAP 260 via landline.

Alternate embodiments of the system 200 of the present invention may use multiple Operations Centers described above. In such an embodiment, , it is preferred that one Operations Center be designated the Master Operations Center and all other Operations Centers be Slave Operations Centers. The Master Operations Center performs the functions of managing and coordinating the Slave Operations Centers. Depending on the method in which the Slave Operations Centers share functions, the Master Operations Center coordination function may involve synchronization of simultaneous transmissions from multiple Slave Operations Centers. To perform its functions, the Master Operations Center may include a system clock for synchronization.

An efficient method of dividing tasks among multiple Operations Centers is to assign specific satellite transponders

to each Operations Center 202 and to assign external program sources to the nearest Operations Center 202. Of course, this division of resources may not always be possible. Since programming will be grouped into priority levels with each priority level likely to be assigned specific satellite transponders, it is also possible to assign each Operations Center 202 to a priority level. For example, in a three priority level system with two Slave Operations Centers A and B and 18 transponders, the Master Operations Center may be assigned priority level 1 and assigned 9 transponders. Slave Operations Center A may be assigned priority level 2 and 5 transponders, while Slave Operations Center B is assigned priority level 3 and 4 transponders. In a multiple Operations Center configuration dynamic bandwidth allocation and dynamic menu capacity allocation becomes more complex and will be coordinated by the Master Operations Center.

Just as in the alternate embodiment wherein multiple Operations Centers 202 are used, a delivery system may have multiple satellite uplinks. Preferably, each Operations Center 202 has one or more uplink sites. Each Operations Center 202 controls the functions of its assigned uplink sites and may assign one site as a master uplink site.

In another alternative configuration, in regions or areas without cable services, where subscribers might use backyard satellite systems (TV RO) to receive packaged television services, the set top terminal 220 will include the appropriate hardware to allow connection to the backyard satellite reception equipment, i.e., a typical communication port. In this configuration, the backyard satellite system will receive programming signals originating from the Operations Center 202 directly from the satellite transponders. No cable headend 208 is utilized with a backyard satellite system. The

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menu system within the set top terminal 220 will be programmed directly from the Operations Center 202. The Operations Center program signals and control signals arrive at the set top terminal 220 essentially unchanged. Additionally, in this configuration, an upstream communication mechanism must be in place at the subscriber's home (e.g., modem) to communicate information to the Operations Center 202 such as program ordering information. The set top terminals 220 can be equipped with a modem port for this upstream communication to the Operations Center 202. The two alternative embodiments described in the preceding four paragraphs, and other such embodiments not specifically referred to herein but within the understanding of those skilled in the art, incorporate or combine one or more of the components of the system 200 of the present invention.

Although the present invention has been shown and described with respect to preferred embodiments, various changes and modification that are obvious to a person skilled in the art to which the invention pertains are deemed to lie within the spirit and scope of the invention as defined by the following claims.