

AO 120 (Rev. 08/10)

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> P.O. Box 1450 Alexandria, VA 22313-1450	<b>REPORT ON THE                  FILING OR DETERMINATION OF AN                  ACTION REGARDING A PATENT OR                  TRADEMARK</b>
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following  
 Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 14-cv-03106	DATE FILED 4/23/2014	U.S. DISTRICT COURT Central District of California
PLAINTIFF SIGNAL IP, INC.		DEFENDANT FORD MOTOR COMPANY
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 5,463,374	10/31/1995	Signal IP, Inc.
2 5,714,927	2/3/1995	Signal IP, Inc.
3 5,732,375	3/24/1998	Signal IP, Inc.
4 6,012,007	1/4/2000	Signal IP, Inc.
5 6,434,486	8/13/2002	Signal IP, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT Order
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CLERK Terry Nafisi	(BY) DEPUTY CLERK Lori Muraoka	DATE 9/25/2014
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Copy 1—Upon initiation of action, mail this copy to Director    Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director    Copy 4—Case file copy



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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
08/566,029	12/01/1995	ROBERT J. CASHLER	

27571  
Ascenda Law Group, PC  
84 W. Santa Clara St.  
Suite 550  
San Jose, CA 95113

**CONFIRMATION NO. 3996**  
**POA ACCEPTANCE LETTER**



Date Mailed: 02/06/2015

**NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 02/03/2015.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/dtvernon/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
08/566,029	12/01/1995	ROBERT J. CASHLER	H-195546

**CONFIRMATION NO. 3996**

**POWER OF ATTORNEY NOTICE**

MARK A NAVARRE  
DELCO ELECTRONICS CORPORATION  
ERC BUILDING MAIL STOP D 32  
P O BOX 9005  
KOKOMO, IN 46904



Date Mailed: 02/06/2015

**NOTICE REGARDING CHANGE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 02/03/2015.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervned as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/dtvernon/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

**REVOCATION OF PREVIOUS POWERS OF ATTORNEY WITH NEW  
GENERAL POWER OF ATTORNEY TO PROSECUTE APPLICATIONS AND REEXAMINATION  
PROCEEDINGS BEFORE THE UNITED STATES PATENT AND TRADEMARK OFFICE**

I hereby revoke all previous powers of attorney given in the application(s), reexamination proceeding(s) and/or patent(s) listed below and appoint:

Practitioners associated with the Customer Number	<b>27571</b>
---	--------------

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications and reexamination proceedings assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application(s), reexamination proceeding(s) and/or patent(s) listed below to the address associated with Customer Number **27571**.

Assignee Name and Address:

Signal IP, Inc.  
11100 Santa Monica Blvd., Suite 100  
Los Angeles, CA 90025

**A statement under 37 CFR 3.73 is attached.**


List of application(s), reexamination proceeding(s) and/or patent(s):

U.S. Patents  
5,463,374  
5,714,927  
5,732,375  
5,954,775  
6,012,007  
6,434,486  
6,775,601

Reexaminations  
90/013,384  
90/013,385  
90/013,386

**SIGNATURE OF ASSIGNEE OF RECORD**

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date: 02/03/2015
Name	Douglas Croxall	Telephone:
Title	Chief Executive Officer	

**STATEMENT UNDER 37 CFR 3.73(c)**

Applicant/Patent Owner: Signal IP, Inc.  
Application No./Patent No.: 5,732,375 Filed/Issue Date: Mar. 24, 1998  
Titled: METHOD OF INHIBITING OR ALLOWING AIRBAG DEPLOYMENT  
Signal IP, Inc., a Corporation

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1.  The assignee of the entire right, title, and interest.
2.  An assignee of less than the entire right, title, and interest (check applicable box):
- The extent (by percentage) of its ownership interest is \_\_\_\_\_%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
  - There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3.  The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4.  The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- 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 thereof is attached.

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

1. From: INVENTOR To: DELCO ELECTRONICS CORPORATION

The document was recorded in the United States Patent and Trademark Office at Reel 7801, Frame 847, or for which a copy thereof is attached.

2. From: DELCO ELECTRONICS CORPORATION To: DELPHI TECHNOLOGIES, INC.

The document was recorded in the United States Patent and Trademark Office at Reel 17115, Frame 208, or for which a copy thereof is attached.

[Page 1 of 2]

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.*

**STATEMENT UNDER 37 CFR 3.73(c)**

3. From: DELPHI TECHNOLOGIES, INC. To: LOOPBACK TECHNOLOGIES, INC.

The document was recorded in the United States Patent and Trademark Office at Reel 32534, Frame 636, or for which a copy thereof is attached.

4. From: LOOPBACK TECHNOLOGIES, INC. To: SIGNAL IP, INC.

The document was recorded in the United States Patent and Trademark Office at Reel 32534, Frame 803, or for which a copy thereof is attached.

5. From: \_\_\_\_\_ To: \_\_\_\_\_

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

6. From: \_\_\_\_\_ To: \_\_\_\_\_

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).

As required by 37 CFR 3.73(c)(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.

/Tarek N. Fahmi/

2015-02-03

Signature

Date

Tarek N. Fahmi

41402

Printed or Typed Name

Title or Registration Number

## 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.

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	21391082
<b>Application Number:</b>	08566029
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	3996
<b>Title of Invention:</b>	METHOD OF INHIBITING OR ALLOWING AIRBAG DEPLOYMENT
<b>First Named Inventor/Applicant Name:</b>	ROBERT J. CASHLER
<b>Correspondence Address:</b>	MARK A NAVARRE DELCO ELECTRONICS CORPORATION ERC BUILDING MAIL STOP D 32 P O BOX 9005 KOKOMO IN 46904 US - -
<b>Filer:</b>	Tarek N. Fahmi
<b>Filer Authorized By:</b>	
<b>Attorney Docket Number:</b>	H-195546
<b>Receipt Date:</b>	03-FEB-2015
<b>Filing Date:</b>	01-DEC-1995
<b>Time Stamp:</b>	20:30:48
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	no
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### File Listing:

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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		5732375aia0096.pdf	199337 b497a46d8f2a3fe1a04969587267c6eb75fc535c	yes	4
<b>Multipart Description/PDF files in .zip description</b>					
	<b>Document Description</b>	<b>Start</b>	<b>End</b>		
	Power of Attorney	1	1		
	Assignee showing of ownership per 37 CFR 3.73.	2	4		
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			199337		
<p><b>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.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  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.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  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.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  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.</p>					

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3207481

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	SECURITY INTEREST
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
MARATHON PATENT GROUP, INC.	01/29/2015
SIGNAL IP, INC.	01/29/2015
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	DBD CREDIT FUNDING, LLC
<b>Street Address:</b>	1345 AVENUE OF THE AMERICAS - 46TH FLOOR
<b>City:</b>	NEW YORK
<b>State/Country:</b>	NEW YORK
<b>Postal Code:</b>	10105
<b>PROPERTY NUMBERS Total: 7</b>	
<b>Property Type</b>	<b>Number</b>
<b>Patent Number:</b>	5954775
<b>Patent Number:</b>	6434486
<b>Patent Number:</b>	6012007
<b>Patent Number:</b>	5463374
<b>Patent Number:</b>	5714927
<b>Patent Number:</b>	6775601
<b>Patent Number:</b>	5732375
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	2129139878
<b>Email:</b>	jamesfornari@sbcglobal.net
<b>Correspondent Name:</b>	JAMES D. FORNARI
<b>Address Line 1:</b>	1250 BROADWAY, SUITE 3701
<b>Address Line 4:</b>	NEW YORK, NEW YORK 10001
<b>NAME OF SUBMITTER:</b>	JAMES D. FORNARI
<b>SIGNATURE:</b>	/JAMES D. FORNARI/
<b>DATE SIGNED:</b>	02/02/2015



source=Active\_48036969\_2\_Marathon (Fortress) - Patent Security Agreement#page47.tif  
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source=Active\_48036969\_2\_Marathon (Fortress) - Patent Security Agreement#page50.tif  
source=Active\_48036969\_2\_Marathon (Fortress) - Patent Security Agreement#page51.tif

**Patent Security Agreement**

**Patent Security Agreement**, dated as of January 29, 2015 by Marathon Patent Group, Inc. and the undersigned entities (collectively, the “Pledgor”), in favor of DBD Credit Funding LLC, in its capacity as collateral agent pursuant to the Revenue Sharing and Securities Purchase Agreement (in such capacity, the “Collateral Agent”).

WITNESSETH:

WHEREAS, the Pledgor is party to a Security Agreement of even date herewith (the “Security Agreement”) in favor of the Collateral Agent pursuant to which the Pledgor is required to execute and deliver this Patent Security Agreement;

NOW, THEREFORE, in consideration of the premises and to induce the Collateral Agent, for the benefit of the Secured Parties, to enter into the Revenue Sharing and Securities Purchase Agreement, the Pledgor hereby agrees with the Collateral Agent as follows:

SECTION 1. Defined Terms. Unless otherwise defined herein, terms defined in the Security Agreement and used herein have the meaning given to them in the Security Agreement.

SECTION 2. Grant of Security Interest in Patent Collateral. The Pledgor hereby pledges and grants to the Collateral Agent for the benefit of the Secured Parties a lien on and security interest in and to all of its right, title and interest in, to and under all the following Collateral:

- (a) all of the Company’s existing and future acquired Patents, including, but not limited to, the items listed on Schedule A attached hereto; and
- (b) all Proceeds of any and all of the foregoing.

SECTION 3. Security Agreement. The security interests granted to the Collateral Agent pursuant to this Patent Security Agreement are granted in conjunction with the security interests granted to the Collateral Agent pursuant to the Security Agreement, and Pledgor hereby acknowledges and affirms that the rights and remedies of the Collateral Agent with respect to the security interests in the Patents made and granted hereby are set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. In the event that any provision of this Patent Security Agreement is deemed to conflict with the Security Agreement, the provisions of the Security Agreement shall control.

SECTION 4. Counterparts. This Patent Security Agreement may be executed in any number of counterparts, all of which shall constitute one and the same instrument, and any party hereto may execute this Patent Security Agreement by signing and delivering one or more counterparts. Delivery of an executed counterpart of a signature page of this Patent Security Agreement by telecopier or other electronic transmission (i.e. a “pdf” or “tif” document) shall be effective as delivery of a manually executed counterpart of this Patent Security Agreement.

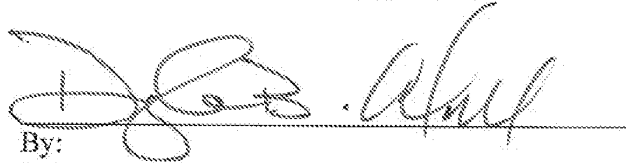
[Signature page follows]

IN WITNESS WHEREOF, the Pledgor has caused this Patent Security Agreement to be executed and delivered by its duly authorized offer as of the date first set forth above.

Very truly yours,

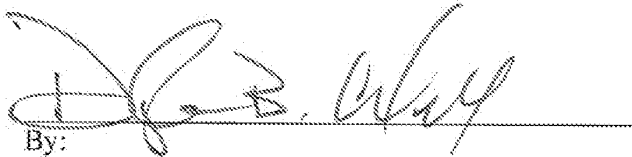
Pledgor:

MARATHON PATENT GROUP, INC.

A handwritten signature in cursive script, appearing to read "J. B. Gray", is written over a horizontal line.

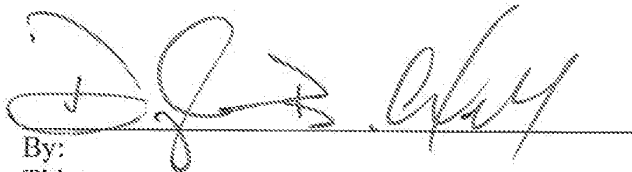
By:  
Title:

SAMPO IP, LLC

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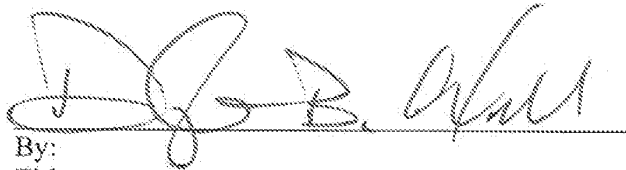
By:  
Title:

RELAY IP, INC.

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By:  
Title:

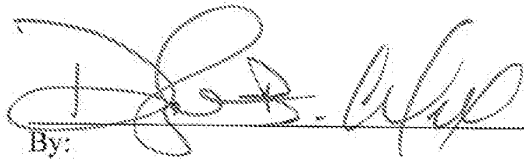
CYBERFONE SYSTEMS, LLC

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By:  
Title:

[Signature Page to Patent Security Agreement]

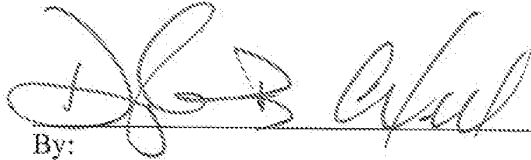
VANTAGE POINT TECHNOLOGY, INC.



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By:  
Title:

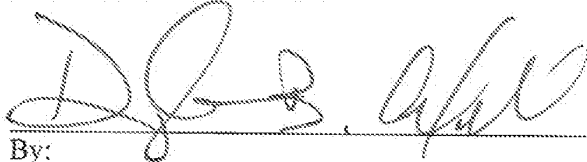
CRFD RESEARCH, INC.



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By:  
Title:

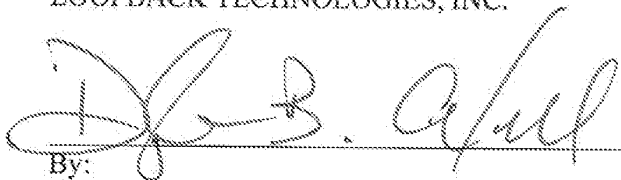
E2E PROCESSING, INC.



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By:  
Title:

LOOPBACK TECHNOLOGIES, INC.

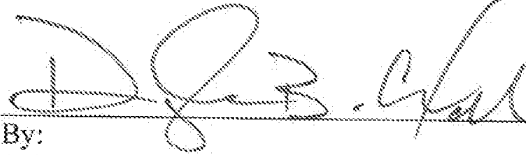


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By:  
Title:

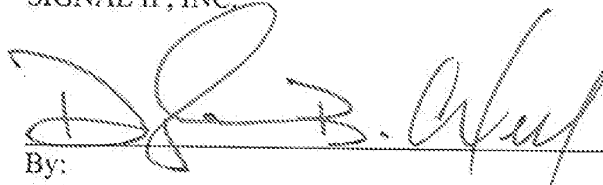
[Signature Page to Patent Security Agreement]

LOOPBACK TECHNOLOGIES II, INC.



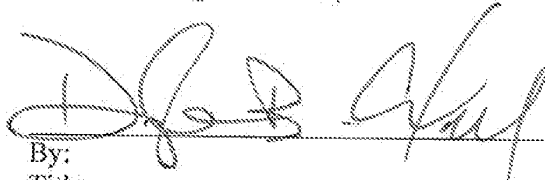
By:  
Title:

SIGNAL IP, INC



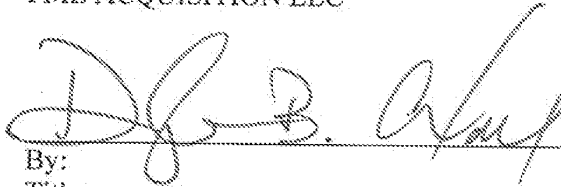
By:  
Title:

HYBRID SEQUENCE IP, INC.



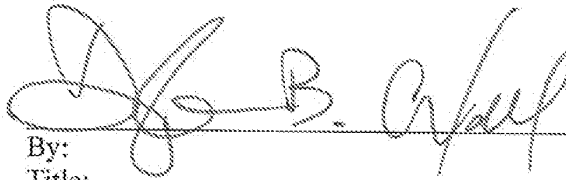
By:  
Title:

PME ACQUISITION LLC



By:  
Title:

SOEMS ACQUISITION CORP.

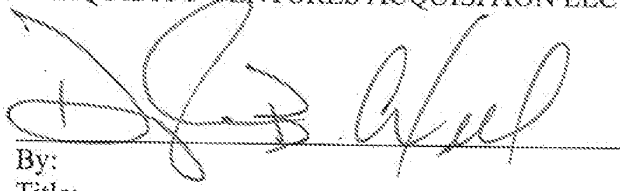


By:  
Title:

[Signature Page to Patent Security Agreement]



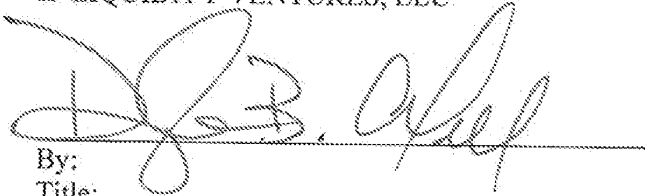
IP LIQUIDITY VENTURES ACQUISITION LLC



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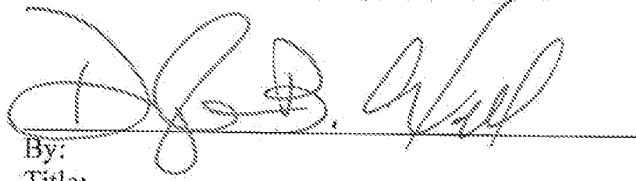
IP LIQUIDITY VENTURES, LLC



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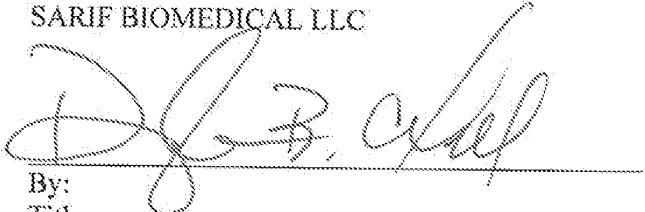
SARIF BIOMEDICAL ACQUISITION LLC



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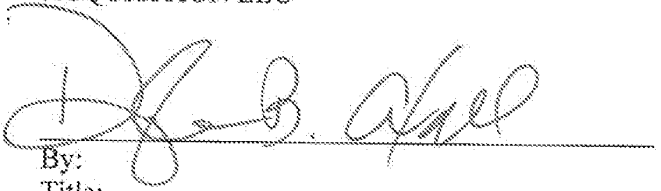
SARIF BIOMEDICAL LLC



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SELENE COMMUNICATION TECHNOLOGIES  
ACQUISITION LLC

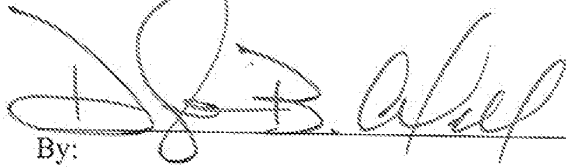


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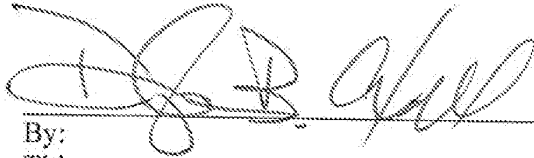
SELENE COMMUNICATION TECHNOLOGIES, LLC



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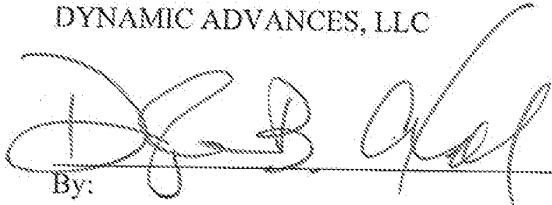
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Title:

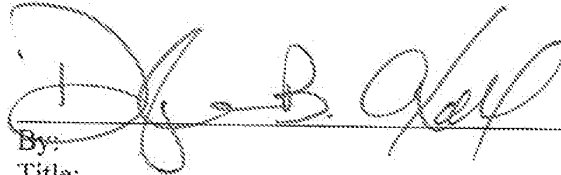
DYNAMIC ADVANCES, LLC



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By:  
Title:

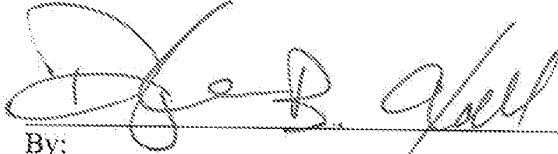
CLOUDING CORP.



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By:  
Title:

TLI ACQUISITION CORP.

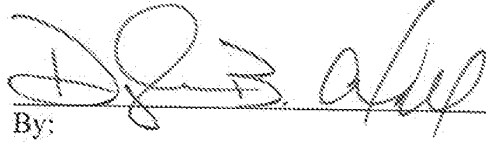


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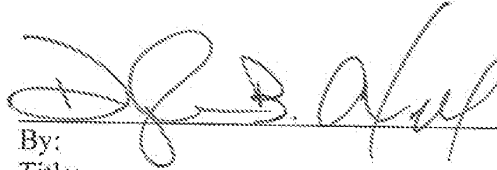
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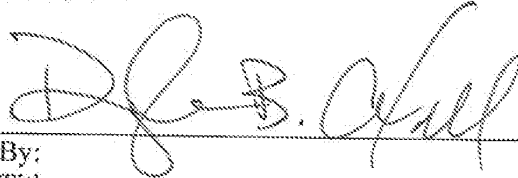
MEDTECH GROUP ACQUISITION CORP.



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By:  
Title:

TLIF, LLC



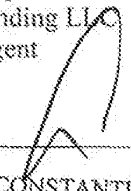
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By:  
Title:

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Accepted and Agreed:  
DBD Credit Funding LLC  
as Collateral Agent

By: \_\_\_\_\_

  
Name: \_\_\_\_\_  
Title: CONSTANTINE M. DAKOLIAS  
PRESIDENT

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SCHEDULE A  
PATENTS

Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Application Status	Publication Number
Dynamic Advances, LLC	5164-DYNAD-004	US	ORD	CALIBRATION-FREE GAZE TRACKING UNDER NATURAL HEAD MOVEMENT	10/787,359	26-Feb-04	7,306,337	11-Dec-07	Issued	20040174496
Dynamic Advances, LLC	5164-DYNAD-003	US	ORD	NATURAL LANGUAGE INTERFACE USING CONSTRAINED INTERMEDIATE DICTIONARY OF RESULTS	09/861,860	21-May-01	7,177,798	13-Feb-07	Issued	20020059069
Dynamic Advances, LLC	5164-DYNAD-002	US	ORD	SYSTEMS FOR PERFORMING CHEMICAL MECHANICAL PLANARIZATION AND PROCESSES FOR CONDUCTING SAME	08/413,487	30-Mar-95	5,637,185	10-Jun-97	Issued	
Dynamic Advances, LLC	5164-DYNAD-001	US	ORD	DETECTION OF CHOLESTEROL DEPOSITS IN ARTERIES	07/962,777	19-Oct-92	5,327,893	12-Jul-94	Issued	
Selene Communication Technologies, LLC	5164-Selene-867	US	ORD	METHOD AND APPARATUS FOR PROVIDING SCALABLE RESOURCE DISCOVERY	10/242,285	12-Sep-02	7,177,867	13-Feb-07	Issued	20030074402
Selene Communication Technologies, LLC	5164-Selene-444	US	ORD	APPLICATION-LAYER ANOMALY AND MISUSE DETECTION	09/996,154	28-Nov-01	7,143,444	28-Nov-06	Issued	20030101358
Selene Communication	5164-Selene-377	US	ORD	SEARCH DATA PROCESSOR	09/218,570	22-Dec-98	6,363,377	26-Mar-02	Issued	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Application Status	Publication Number
Technologies, LLC										
Sarif Biomedical, LLC	5164-SARIF-726FR	FR	ORD	COMPUTER-ASSISTED MICROSURGERY EQUIPMENT AND METHODS AND METHODS FOR USE WITH SAID EQUIPMENT	EP94926960.9	6-Sep-94	EP0722299	12-Jan-00	Expired	EP0722299
Sarif Biomedical, LLC	5164-SARIF-725GB	GB	ORD	COMPUTER-ASSISTED MICROSURGERY EQUIPMENT AND METHODS AND METHODS FOR USE WITH SAID EQUIPMENT	EP94926960.9	6-Sep-94	EP0722299	12-Jan-00	Expired	EP0722299
Sarif Biomedical, LLC	5164-SARIF-725DE	DE	ORD	COMPUTER-ASSISTED MICROSURGERY EQUIPMENT AND METHODS AND METHODS FOR USE WITH SAID EQUIPMENT	EP94926960.9	6-Sep-94	DE69422631.9	12-Jan-00	Issued	EP0722299
Sarif Biomedical, LLC	5164-SARIF-725-EP	EP	PCT	COMPUTER-ASSISTED MICROSURGERY EQUIPMENT AND METHODS FOR USE WITH SAID EQUIPMENT	94926960.9	6-Sep-94	722299	12-Jan-00	Granted	722299
Sarif Biomedical, LLC	5164-SARIF-725	US	ORD	COMPUTER-ASSISTED MICROSURGERY EQUIPMENT AND METHODS AND METHODS FOR USE WITH SAID EQUIPMENT	08/612,932	10-Sep-96	5,755,725	26-May-98	Issued	
Vantage Point Technology, Inc.	5164-VANT-979-Z	US	PRO	HIGH-AVAILABILITY SUPER SERVER	60/011,979	20-Feb-96			Expired	
Vantage Point Technology, Inc.	5164-VANT-932-Z	US	PRO	METHOD AND APPARATUS FOR SIGNAL HANDLING ON	60/011,932	20-Feb-96			Expired	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Application Status	Publication Number
				GTL-TYPE BUSES						
Vantage Point Technology, Inc.	5164-VANT-920-Z	US	PRO	APPARATUS AND METHOD FOR TRANSMITTING DOCUMENTS BETWEEN A SERVER COMPUTER AND A CLIENT COMPUTER	60/074,920	17-Feb-98			Expired	
Vantage Point Technology, Inc.	5164-VANT-876	US	ORD	METHOD AND APPARATUS FOR SPECULATIVE EXECUTION OF INSTRUCTIONS	08/576,876	21-Dec-95	6,185,668	6-Feb-01	Issued	
Vantage Point Technology, Inc.	5164-VANT-870	US	ORD	BYPASSING A NONPAGED POOL CONTROLLER WHEN ACCESSING A REMAINDER PORTION OF A RANDOM ACCESS MEMORY	09/178,870	26-Oct-98	6,032,240	29-Feb-00	Issued	
Vantage Point Technology, Inc.	5164-VANT-845	US	ORD	COMPUTER CHASSIS WITH RETRACTABLE ACCESS DOOR	09/260,845	2-Mar-99	6,219,226	17-Apr-01	Issued	
Vantage Point Technology, Inc.	5164-VANT-832-DE	DE	ORD	VISIBLE LINE PROCESSOR	DE1996615083T		69615083.2	12-Sep-01	Granted	
Vantage Point Technology, Inc.	5164-VANT-827	US	ORD	HIGH-AVAILABILITY SUPER SERVER	08/802,827	19-Feb-97	6,374,329	16-Apr-02	Issued	
Vantage Point Technology, Inc.	5164-VANT-818	US	ORD	METHOD AND APPARATUS FOR TRANSLATING VIRTUAL ADDRESSES IN A DATA PROCESSING SYSTEM HAVING MULTIPLE INSTRUCTION PIPELINES AND	08/146,818	2-Nov-93	5,463,750	31-Oct-95	Issued	



Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Application Status	Publication Number
				SEPARATE TLB'S FOR EACH PIPELINE						
Vantage Point Technology, Inc.	5164-VANT-808	US	ORD	APPARATUS AND METHOD FOR TESTING COMPUTER SYSTEMS	08/985,808	5-Dec-97	6,029,257	22-Feb-00	Granted	
Vantage Point Technology, Inc.	5164-VANT-639-DE	DE	ORD	APPARATUS FOR IMPROVED AIR FLOW THROUGH A COMPUTER CHASSIS	DE1997618639T		DE1997618639T	22-Jan-03	Granted	
Vantage Point Technology, Inc.	5164-VANT-537-NL	NL	ORD	VISIBLE LINE PROCESSOR	EP19960107058		742537	12-Sep-01	Granted	
Vantage Point Technology, Inc.	5164-VANT-537-IT	IT	ORD	VISIBLE LINE PROCESSOR	EP19960107058		742537	12-Sep-01	Granted	
Vantage Point Technology, Inc.	5164-VANT-537-GB	GB	ORD	VISIBLE LINE PROCESSOR	EP19960107058		742537	12-Sep-01	Granted	
Vantage Point Technology, Inc.	5164-VANT-537-FR	FR	ORD	VISIBLE LINE PROCESSOR	EP19960107058		742537	12-Sep-01	Granted	
Vantage Point Technology, Inc.	5164-VANT-496	US	DIV	COMPARATOR CELL FOR USE IN A CONTENT ADDRESSABLE MEMORY	08/385,496	8-Feb-95	5,598,115	28-Jan-97	Issued	
Vantage Point Technology, Inc.	5164-VANT-479	US	ORD	APPARATUS FOR IMPROVED AIR FLOW THROUGH A COMPUTER CHASSIS	08/866,479	30-May-97	5,892,654	6-Apr-99	Issued	
Vantage Point Technology, Inc.	5164-VANT-472-DE	DE	ORD	BYPASSING A NONPAGED POOL CONTROLLER WHEN ACCESSING A REMAINDER PORTION OF A RANDOM ACCESS MEMORY	DE69816472(T2)		DE1998616472T	16-Jul-03	Granted	
Vantage Point	5164-	US	ORD	APPARATUS AND	09/249,403	12-Feb-99	6,615,233	2-Sep-03	Issued	

Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Application Status	Publication Number
Technology, Inc.	VANT-403			METHOD FOR TRANSMITTING DOCUMENTS BETWEEN A SERVER COMPUTER AND A CLIENT COMPUTER						
Vantage Point Technology, Inc.	5164-VANT-239-Z	US	PRO	COMPUTER EXPANSION SYSTEM WITH IMPROVED COMPUTER CHASSIS	60/077,239	9-Mar-98			Expired	
Vantage Point Technology, Inc.	5164-VANT-231	US	CON	MULTI-PROCESSOR DATA COHERENCY	10/886,231	7-Jul-04	7,584,330	1-Sep-09	Granted	2005-0188009
Vantage Point Technology, Inc.	5164-VANT-126-NL	NL	ORD	APPARATUS AND METHOD FOR TRANSMITTING DOCUMENTS BETWEEN A SERVER COMPUTER AND A CLIENT COMPUTER	EP19990908126		1057121	16-Nov-06	Abandoned	
Vantage Point Technology, Inc.	5164-VANT-126-LU	LU	ORD	APPARATUS AND METHOD FOR TRANSMITTING DOCUMENTS BETWEEN A SERVER COMPUTER AND A CLIENT COMPUTER	EP19990908126		1057121	16-Nov-06	Abandoned	
Vantage Point Technology, Inc.	5164-VANT-126-IT	IT	ORD	APPARATUS AND METHOD FOR TRANSMITTING DOCUMENTS BETWEEN A SERVER COMPUTER AND A CLIENT COMPUTER	EP19990908126		1057121	16-Nov-06	Abandoned	
Vantage Point Technology, Inc.	5164-VANT-126-GB	GB	ORD	APPARATUS AND METHOD FOR TRANSMITTING DOCUMENTS BETWEEN	EP19990908126		1057121	16-Nov-06	Abandoned	

Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Application Status	Publication Number
				A SERVER COMPUTER AND A CLIENT COMPUTER						
Vantage Point Technology, Inc.	5164-VANT-126-BE	BE	ORD	APPARATUS AND METHOD FOR TRANSMITTING DOCUMENTS BETWEEN A SERVER COMPUTER AND A CLIENT COMPUTER	EP19990908126		1057121	16-Nov-06	Abandoned	
Vantage Point Technology, Inc.	5164-VANT-121-FR	FR	ORD	APPARATUS AND METHOD FOR TRANSMITTING DOCUMENTS BETWEEN A SERVER COMPUTER AND A CLIENT COMPUTER	EP99908126	12-Feb-99	1057121	4-Oct-06	Issued	EP1057121
Vantage Point Technology, Inc.	5164-VANT-121-DE	DE	PCT	APPARATUS AND METHOD FOR TRANSMITTING DOCUMENTS BETWEEN A SERVER COMPUTER AND A CLIENT COMPUTER	699 33 435.7	12-Feb-99	699 33 435.7		Issued	
Vantage Point Technology, Inc.	5164-VANT-083-NL	NL	ORD	BYPASSING A NONPAGED POOL CONTROLLER WHEN ACCESSING A REMAINDER PORTION OF A RANDOM ACCESS MEMORY	EP19980957531		EP1031083	16-Jul-03	Granted	
Vantage Point Technology, Inc.	5164-VANT-083-LU	LU	ORD	BYPASSING A NONPAGED POOL CONTROLLER WHEN ACCESSING A REMAINDER PORTION OF A RANDOM ACCESS	EP19980957531		EP1031083	16-Jul-03	Granted	

Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Application Status	Publication Number
				MEMORY						
Vantage Point Technology, Inc.	5164-VANT-083-IT	IT	ORD	BYPASSING A NONPAGED POOL CONTROLLER WHEN ACCESSING A REMAINDER PORTION OF A RANDOM ACCESS MEMORY	EP19980957531		EP1031083	16-Jul-03	Granted	
Vantage Point Technology, Inc.	5164-VANT-083-FR	FR	ORD	BYPASSING A NONPAGED POOL CONTROLLER WHEN ACCESSING A REMAINDER PORTION OF A RANDOM ACCESS MEMORY	EP19980957531		EP1031083	16-Jul-03	Granted	
Vantage Point Technology, Inc.	5164-VANT-083-BG	BG	ORD	BYPASSING A NONPAGED POOL CONTROLLER WHEN ACCESSING A REMAINDER PORTION OF A RANDOM ACCESS MEMORY	EP19980957531		EP1031083	16-Jul-03	Granted	
Vantage Point Technology, Inc.	5164-VANT-083-BE	BE	ORD	BYPASSING A NONPAGED POOL CONTROLLER WHEN ACCESSING A REMAINDER PORTION OF A RANDOM ACCESS MEMORY	EP19980957531		EP1031083	16-Jul-03	Granted	
Vantage Point Technology, Inc.	5164-VANT-065-NL	NL	ORD	APPARATUS FOR IMPROVED AIR FLOW THROUGH A COMPUTER CHASSIS	EP19970926796		EP0903065	22-Jan-03	Granted	
Vantage Point Technology, Inc.	5164-VANT-065-IT	IT	ORD	APPARATUS FOR IMPROVED AIR FLOW THROUGH A COMPUTER CHASSIS	EP19970926796		EP0903065	22-Jan-03	Granted	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Application Status	Publication Number
Vantage Point Technology, Inc.	5164-VANT-065-GB	GB	ORD	APPARATUS FOR IMPROVED AIR FLOW THROUGH A COMPUTER CHASSIS	EP19970926796		EP0903065	22-Jan-03	Granted	
Vantage Point Technology, Inc.	5164-VANT-065-FR	FR	ORD	APPARATUS FOR IMPROVED AIR FLOW THROUGH A COMPUTER CHASSIS	EP19970926796		EP0903065	22-Jan-03	Granted	
TLIF, LLC	5164-TLIF-919-CA	CA	ORD	PROSTHETIC IMPLANT ELEMENT	2326919	21-Nov-00	2326919	23-Oct-07	Abandoned	
TLIF, LLC	5164-TLIF-907-PCT	WO	PCT	SPINAL DISC PROSTHESIS	PCT/US1998/021907	16-Oct-98			Expired	
TLIF, LLC	5164-TLIF-900-AU	AU	ORD	Prosthetic implant element	71809/00	24-Nov-00	772817	20-Aug-04	Abandoned	
TLIF, LLC	5164-TLIF-847	US	ORD	PROSTHETIC IMPLANT ELEMENT	09/714,847	16-Nov-00	6,592,624	15-Jul-03	Issued	
TLIF, LLC	5164-TLIF-836-AU	AU	PCT	Spinal disc prosthesis	10952/99	16-Oct-98	730836	28-Jun-01	Abandoned	
TLIF, LLC	5164-TLIF-775-CA	CA	PCT	SPINAL DISC PROSTHESIS	2306775	16-Oct-98	2306775	29-Jan-08	Abandoned	
TLIF, LLC	5164-TLIF-701-AT	AT	EPC	Intervertebral implant	19980121070	6-Nov-98	230245	2-Jan-03	Abandoned	
TLIF, LLC	5164-TLIF-619-JP	JP	PCT	SPINAL DISC PROSTHESIS	20000516619	16-Oct-98			Published	2001520079
TLIF, LLC	5164-TLIF-505-JP	JP	ORD	PROSTHESIS TRANSPLANTING CONSTITUTING ELEMENT	20000356505	22-Nov-00	2001187074	10-Jul-01	Abandoned	
TLIF, LLC	5164-TLIF-354	US	ORD	SPINAL DISC	09/751,354	28-Dec-00			Abandoned	2001-0016773

Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Application Status	Publication Number
TLIF, LLC	5164-TLIF-323-NL	NL	EPC	Intervertebral implant	98121070.1	6-Nov-98	916323	2-Jan-03	Abandoned	916323
TLIF, LLC	5164-TLIF-323-LI	LI	EPC	Intervertebral implant	98121070.1	6-Nov-98	916323	2-Jan-03	Abandoned	916323
TLIF, LLC	5164-TLIF-323-GB	GB	EPC	Intervertebral implant	98121070.1	6-Nov-98	916323	2-Jan-03	Abandoned	916323
TLIF, LLC	5164-TLIF-323-FR	FR	EPC	Intervertebral implant	98121070.1	6-Nov-98	916323	2-Jan-03	Abandoned	916323
TLIF, LLC	5164-TLIF-323-EP	EP	ORD	Intervertebral implant	98121070.1	6-Nov-98	916323	2-Jan-03	Granted	916323
TLIF, LLC	5164-TLIF-323-DE	DE	EPC	Intervertebral implant	59806807.4	6-Nov-98	916323	2-Jan-03	Abandoned	916323
TLIF, LLC	5164-TLIF-323-CH	CH	EPC	Intervertebral implant	98121070.1	6-Nov-98	916323	2-Jan-03	Abandoned	916323
TLIF, LLC	5164-TLIF-323-AT	AT	EPC	Intervertebral implant	98121070.1	6-Nov-98	916323	2-Jan-03	Abandoned	916323
TLIF, LLC	5164-TLIF-293	US	ORD	SPINAL DISC	08/954,293	17-Oct-97	5,824,094	20-Oct-98	Issued	
TLIF, LLC	5164-TLIF-261-KR	KR	ORD	PROSTHESIS TRANSPLANTING ELEMENT	1020000070261	24-Nov-01	KR20010051919	25-Jun-01	Granted	
TLIF, LLC	5164-TLIF-259	US	ORD	SPINAL DISC	10/340,259	10-Jan-03			Abandoned	2003-0100951
TLIF, LLC	5164-TLIF-237-TR	TR	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-TLIF-237-SE	SE	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	

Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Application Status	Publication Number
TLIF, LLC	5164-TLIF-237-PT	PT	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-TLIF-237-NL	NL	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-TLIF-237-MC	MC	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-TLIF-237-LU	LU	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-TLIF-237-LI	LI	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-TLIF-237-IT	IT	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-TLIF-237-IE	IE	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-TLIF-237-GR	GR	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-TLIF-237-GB	GB	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-TLIF-237-FR	FR	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-TLIF-237-FI	FI	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-TLIF-237-ES	ES	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-	EP	ORD	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Granted	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Application Status	Publication Number
	TLIF-237-EP									
TLIF, LLC	5164-TLIF-237-DK	DK	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-TLIF-237-DE	DE	EPC	Prosthetic implant element	60031073	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-TLIF-237-CY	CY	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-TLIF-237-CH	CH	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-TLIF-237-BE	BE	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-TLIF-237-AT	AT	EPC	Prosthetic implant element	20000310412	23-Nov-00	1103237	4-Oct-06	Abandoned	
TLIF, LLC	5164-TLIF-229-DE	DE	ORD	Zwischenwirbelimplantat	19804022.9	2-Feb-98	19804022	19-Sep-02	Abandoned	19804022
TLIF, LLC	5164-TLIF-224-DE	DE	ORD	Zwischenwirbelimplantat	29720022.4	12-Nov-97			Abandoned	DE29720022
TLIF, LLC	5164-TLIF-151	US	ORD	INTERVERTEBRAL IMPLANT	09/190,151	12-Nov-98	6,143,032	7-Nov-00	Issued	
TLIF, LLC	5164-TLIF-111-CA	CA	ORD	INTERVERTEBRAL IMPLANT	2253111	9-Nov-98	2253111	23-Aug-05	Abandoned	
TLIF, LLC	5164-TLIF-107-KR	KR	PCT	SPINAL DISC PROSTHESIS	1020007004107	17-Apr-00			Abandoned	1.02001E+12
TLIF, LLC	5164-TLIF-082	US	ORD	SPINAL DISC	09/921,082	2-Aug-01	6,669,732	30-Dec-03	Issued	2002-0022888
TLIF, LLC	5164-	SE	EPP	SPINAL DISC	98953624.8	16-Oct-98	EP1023011	10-Dec-03	Abandoned	1023011

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	TLIF-011-SE			PROSTHESIS					ed	
TLIF, LLC	5164-TLIF-011-NL	NL	EPP	SPINAL DISC PROSTHESIS	19980953624	16-Oct-98	1023011	10-Dec-06	Abandoned	
TLIF, LLC	5164-TLIF-011-LI	LI	EPP	SPINAL DISC PROSTHESIS	98953624.8	16-Oct-98	EP1023011	10-Dec-03	Abandoned	1023011
TLIF, LLC	5164-TLIF-011-IT	IT	EPP	SPINAL DISC PROSTHESIS	98953624	16-Oct-98	1023011	10-Dec-03	Abandoned	
TLIF, LLC	5164-TLIF-011-IE	IE	EPP	SPINAL DISC PROSTHESIS	98953624.8	16-Oct-98	1023011	10-Dec-03	Abandoned	
TLIF, LLC	5164-TLIF-011-GR	GR	EPP	SPINAL DISC PROSTHESIS	98953624.8	16-Oct-98	EP1023011	10-Dec-03	Abandoned	1023011
TLIF, LLC	5164-TLIF-011-GB	GB	EPP	SPINAL DISC PROSTHESIS	98953624.8	16-Oct-98	1023011	10-Dec-03	Abandoned	
TLIF, LLC	5164-TLIF-011-FR	FR	EPP	SPINAL DISC PROSTHESIS	98953624.8	16-Oct-98	1023011	10-Dec-03	Abandoned	
TLIF, LLC	5164-TLIF-011-FI	FI	EPP	SPINAL DISC PROSTHESIS	98953624.8	16-Oct-98	EP1023011	10-Dec-03	Abandoned	1023011
TLIF, LLC	5164-TLIF-011-ES	ES	EPP	SPINAL DISC PROSTHESIS	98953624.8	16-Oct-98	EP1023011	10-Dec-03	Granted	1023011
TLIF, LLC	5164-TLIF-011-EP	EP	PCT	SPINAL DISC PROSTHESIS	98953624.8	16-Oct-98	EP1023011	10-Dec-03	Granted	1023011
TLIF, LLC	5164-TLIF-011-DK	DK	EPP	SPINAL DISC PROSTHESIS	98953624.8	16-Oct-98	1023011	10-Dec-03	Abandoned	
TLIF, LLC	5164-TLIF-011-CH	CH	EPP	SPINAL DISC PROSTHETIC	98953624	16-Oct-98			Abandoned	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Application Status	Publication Number
	CH									
TLIF, LLC	5164-TLIF-011-BE	BE	EPP	SPINAL DISC PROSTHESIS	98953624.8	16-Oct-98	1023011	10-Dec-03	Abandoned	
TLIF, LLC	5164-TLIF-488	US	ORD	APPARATUS AND METHOD FOR RECORDING, COMMUNICATING AND ADMINISTERING DIGITAL IMAGES	08/877,488	17-Jun-97	6,038,295	14-Mar-00	Issued	
Signal IP, Inc.	5164-SIGIP-999	US	ORD	DUAL RATE COMMUNICATION PROTOCOL	08/795,999	5-Feb-97	5,954,775	21-Sep-99	Issued	
Signal IP, Inc.	5164-SIGIP-972	US	ORD	TECHNIQUE FOR LIMITING THE RANGE OF AN OBJECT SENSING SYSTEM IN A VEHICLE	09/648,972	28-Aug-00	6,434,486	13-Aug-02	Issued	
Signal IP, Inc.	5164-SIGIP-338	US	CIP	OCCUPANT DETECTION METHOD AND APPARATUS FOR AIR BAG SYSTEM	08/868,338	3-Jun-97	6,012,007	4-Jan-00	Issued	
Signal IP, Inc.	5164-SIGIP-322	US	ORD	METHOD AND APPARATUS FOR TIRE PRESSURE MONITORING AND FOR SHARED KEYLESS ENTRY CONTROL	08/208,322	10-Mar-94	5,463,374	31-Oct-95	Issued	
Signal IP, Inc.	5164-SIGIP-090	US	ORD	METHOD OF IMPROVING ZONE OF COVERAGE RESPONSE OF AUTOMOTIVE RADAR	08/762,090	9-Dec-96	5,714,927	3-Feb-98	Issued	
Signal IP, Inc.	5164-SIGIP-048	US	ORD	METHOD AND CONTROL SYSTEM FOR CONTROLLING PROPULSION IN A HYBRID VEHICLE	10/214,048	6-Aug-02	6,775,601	10-Aug-04	Issued	20040030469

Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
Signal IP, Inc.	5164-SIGIP-029	US	ORD	METHOD OF INHIBITING OR ALLOWING AIRBAG DEPLOYMENT	08/566,029	1-Dec-95	5,732,375	24-Mar-98	Issued	
Sampo IP LLC	5164-SAMP-999	US	ORD	SYSTEM FOR COMMUNICATING INFORMATION AMONG MEMBERS OF A DISTRIBUTED DISCUSSION GROUP RECEIVING A CHANNEL IN A NOTICE FOR AUTOMATIC ACCESSING THE INFORMATION	09/041,599	13-Mar-98	6,161,149	12-Dec-00	Issued	
Sampo IP LLC	5164-SAMP-943	US	CON	CENTRIFUGAL COMMUNICATION AND COLLABORATION METHOD	13/188,943	22-Jul-11			Publishe d	20120158869
Sampo IP LLC	5164-SAMP-441	US	ORD	CENTRIFUGAL COMMUNICATION AND COLLABORATION METHOD	09/709,441	13-Nov-00	6,772,229	3-Aug-04	Issued	
Sampo IP LLC	5164-SAMP-358	US	CON	CENTRIFUGAL COMMUNICATION AND COLLABORATION METHOD	10/375,358	28-Feb-03	8,015,495	6-Sep-11	Issued	2003-0149806
Sampo IP LLC	5164-SAMP-326	US	CON	GROUP COMMUNICATION AND COLLABORATION METHOD	10/887,326	9-Jul-04			Abandon ed	2006-0090013
Relay IP, Inc. Relay IP, Inc.	5164-RELAY-634	US	ORD	MULTICAST ROUTING USING CORE BASED TREES	08/100,634	30-Jul-93	5,331,637	19-Jul-94	Issued	
E2E Processing, Inc.	5164-E2E-863	US	ORD	END-TO-END TRANSACTION	09/928,863	13-Aug-01	6,981,222	27-Dec-05	Issued	20020054170

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
E2E Processing, Inc.	5164-E2E-476	US	ORD	PROCESSING AND STATUSING SYSTEM AND METHOD	12/010,476	25-Jan-08	7,818,082	19-Oct-10	Issued	20080140244
E2E Processing, Inc.	5164-E2E-204	US	CON	METHOD AND APPARATUS FOR PLANNING A MANUFACTURING SCHEDULE USING AN ADAPTIVE LEARNING PROCESS	10/846,204	14-May-04	7,043,320	9-May-06	Issued	
E2E Processing, Inc.	5164-E2E-093	US	ORD	METHOD FOR CALCULATING A TRANSITION PREFERENCE VALUE BETWEEN FIRST AND SECOND MANUFACTURING OBJECT ATTRIBUTES	11/382,093	8-May-06	7,406,359	29-Jul-08	Issued	20070073431
Hybrid Sequence IP, Inc.	5164-HYBR-674	US	ORD	SYSTEM AND METHOD FOR PERFORMING NON-DISRUPTIVE DIAGNOSTICS THROUGH A FRAME RELAY CIRCUIT	08/888,410	7-Jul-97	5,898,674	27-Apr-99	Issued	
Hybrid Sequence IP, Inc.	5164-HYBR-082	US	ORD	SYSTEM AND METHOD FOR MULTIPLEXING A FRAME RELAY VIRTUAL CIRCUIT AND FOR PERFORMING NON-DISRUPTIVE	09/079,048	14-May-98	6,269,082	31-Jul-01	Issued	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
IP Liquidity Technologies				DIAGNOSTICS THROUGH A CIRCUIT USING ASYNCHRONOUS TRANSFER MODE						
IP Liquidity Technologies	5164-IPTECH-320	US	ORD	N/A	13/681,320				Pending	
Medtech GmbH	5164-MEDT-431	US	ORD	VASCULAR IMPLANT	10/135,431	30-Apr-02	6790230	14-Sep-04	Issued	20020193871
Medtech GmbH	5164-MEDT-308-DE	DE	EPP	Systems for treating fractured or diseased bone using expandable bodies	69841759.3	1-Jun-98	DE69840721	8-Apr-09	Issued	69841759.3
Medtech GmbH	5164-MEDT-103-DE	DE	EPP	SYSTEMS AND METHODS FOR PLACING MATERIALS INTO BONE	69933037.8	26-Jul-99	DE69933037	17-Oct-13	Issued	69933037.8
Medtech GmbH	5164-MEDT-100-DE	DE	ORD	Replacement heart valve, comprises an anchoring element, and has a starting volume which is opened up to the normal volume using a catheter	10121210	30-Apr-01	DE101212101	14-Nov-02	Issued	
Cyberfone Systems, LLC	5164-CYBF-961-GB	GB	ORD	SYSTEM FOR SECURELY COMMUNICATING AMONGST CLIENT COMPUTER SYSTEMS	1942071	7-Jun-00	1311961	28-Apr-10	Granted	
Cyberfone Systems, LLC	5164-CYBF-961-FR	FR	ORD	SYSTEM FOR SECURELY COMMUNICATING AMONGST CLIENT COMPUTER SYSTEMS	1942071	7-Jun-00	1311961	28-Apr-10	Granted	
Cyberfone Systems, LLC	5164-CYBF-	GB	ORD	TELEPHONE/TRANSACTION ENTRY DEVICE	96915846.8	16-May-96	886954	16-May-95	Granted	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
	954-GB			AND SYSTEM FOR ENTERING TRANSACTION DATA INTO DATABASES						
Cyberfone Systems, LLC	5164-CYBF-954-FR	FR	ORD	TELEPHONE/TRANSACTION ENTRY DEVICE AND SYSTEM FOR ENTERING TRANSACTION DATA INTO DATABASES	96915846.8	15-May-96	886954	19-May-95	Granted	
Cyberfone Systems, LLC	5164-CYBF-952	US	ORD	TELEPHONE/TRANSACTION ENTRY DEVICE AND SYSTEM FOR ENTERING TRANSACTION DATA INTO DATABASES	11/849,952	4-Sep-07	8,019,060	13-Sep-11	Issued	20070297597
Cyberfone Systems, LLC	5164-CYBF-926	US	ORD	Telephone/Transaction Entry Device and System for Entering Transaction Data into Databases	11/849,926	4-Sep-07			Abandoned	20070299808
Cyberfone Systems, LLC	5164-CYBF-895-NL	NL	ORD	DATA TRANSACTION ASSEMBLY SERVER	98931240	20-Jun-97	996895	16-Nov-05	Granted	
Cyberfone Systems, LLC	5164-CYBF-895-MC	MC	ORD	DATA TRANSACTION ASSEMBLY SERVER	98931240	20-Jun-97	996895	16-Nov-05	Granted	
Cyberfone Systems, LLC	5164-CYBF-895-LU	LU	ORD	DATA TRANSACTION ASSEMBLY SERVER	98931240	20-Jun-97	996895	16-Nov-05	Granted	
Cyberfone Systems, LLC	5164-CYBF-895-IE	IE	ORD	DATA TRANSACTION ASSEMBLY SERVER	98931240	20-Jun-97	996895	16-Nov-05	Granted	
Cyberfone Systems, LLC	5164-CYBF-895-GB	GB	ORD	DATA TRANSACTION ASSEMBLY SERVER	98931240	29-Jun-97	996895	16-Nov-05	Granted	
Cyberfone Systems, LLC	5164-CYBF-	FR	ORD	DATA TRANSACTION ASSEMBLY SERVER	98931240	20-Jun-97	996895	16-Nov-05	Abandoned	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
Cyberfone Systems, LLC	895-FR 5164-CYBF-895-CH	CH	ORD	DATA TRANSACTION ASSEMBLY SERVER	98931240	20-Jun-97	996895	16-Nov-14	Granted	
Cyberfone Systems, LLC	5164-CYBF-895-BE	BE	ORD	DATA TRANSACTION ASSEMBLY SERVER	98931240	16-May-96	996895	16-Nov-05	Granted	
Cyberfone Systems, LLC	5164-CYBF-853	US	ORD	Data communication network for processing data transactions	10/947,853	23-Sep-04			Abandon ed	20050119992
Cyberfone Systems, LLC	5164-CYBF-831-DE	DE	ORD	DATA TRANSACTION ASSEMBLY SERVER	98931240	20-Jun-97	69832383.1	16-Nov-05	Granted	
Cyberfone Systems, LLC	5164-CYBF-819-GB	GB	ORD	N/A	8014819	20-Jun-97	2048763		Abandon ed	
Cyberfone Systems, LLC	5164-CYBF-814IL	IL	ORD	SYSTEM FOR SECURELY COMMUNICATING AMONGST CLIENT COMPUTER SYSTEMS	20020153300	5-Dec-02	153300	29-Dec-08	Issued	
Cyberfone Systems, LLC	5164-CYBF-814HK	HK	ORD	SYSTEM FOR SECURELY COMMUNICATING AMONGST CLIENT COMPUTER SYSTEMS	20030104799	7-Jul-03	1052567	17-Dec-10	Issued	
Cyberfone Systems, LLC	5164-CYBF-814EP	EP	ORD	SYSTEM FOR SECURELY COMMUNICATING AMONGST CLIENT COMPUTER SYSTEMS	20010942071	7-Jun-01	1311961	28-Apr-10	Issued	1311961
Cyberfone Systems, LLC	5164-CYBF-814CA	CA	ORD	SYSTEM FOR SECURELY COMMUNICATING AMONGST CLIENT COMPUTER SYSTEMS	20012411458	7-Jun-01	2,411,458	27-Mar-07	Expired	
Cyberfone	5164-	DE	ORD	SYSTEM FOR	1942071	7-Jun-01	60141967.7	8-Apr-10	Issued	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
Systems, LLC	CYBF-814-DE			SECURELY COMMUNICATING AMONGST CLIENT COMPUTER SYSTEMS						
Cyberfone Systems, LLC	5164-CYBF-814	US	ORD	SYSTEM FOR SECURELY COMMUNICATING AMONGST CLIENT COMPUTER SYSTEMS	09/589,814	7-Jun-00	6,973,477	6-Dec-05	Issued	
Cyberfone Systems, LLC	5164-CYBF-813-MX	MX	ORD	DATA TRANSACTION ASSEMBLY SERVER	99011824		217926		Granted	
Cyberfone Systems, LLC	5164-CYBF-798	US	ORD	METHOD FOR ENTERING TRANSACTION DATA INTO DATABASES USING TRANSACTION ENTRY DEVICE	09/390,798	7-Sep-99	6,574,314	3-Jun-03	Issued	
Cyberfone Systems, LLC	5164-CYBF-791	US	ORD	PRINTED CIRCUIT BOARD CIRCUIT CONTROL DEVICE	08/232,791	22-Apr-94	5,414,219	9-May-95	Issued	
Cyberfone Systems, LLC	5164-CYBF-744-KR	KR	ORD	SYSTEM FOR SECURELY COMMUNICATING AMONGST CLIENT COMPUTER SYSTEMS	10-2002-7016744	7-Jun-01	10-0767513-0000	26-Jul-07	Granted	
Cyberfone Systems, LLC	5164-CYBF-730	US	ORD	Telephone/Transaction Entry Device and System for Entering Transaction Data into Databases	11/733,730	10-Apr-07			Abandoned	20070237313
Cyberfone Systems, LLC	5164-CYBF-722	US	ORD	TELEPHONE/TRANSACTION ENTRY DEVICE AND SYSTEM FOR ENTERING TRANSACTION DATA INTO DATABASES	11/734,722	12-Apr-07	7,778,395	17-Aug-10	Issued	20080031434
Cyberfone	5164-	TW	ORD	DATA TRANSACTION	19980109969	22-Jun-98	448364	1-Aug-01	Expired	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
Systems, LLC	CYBF-636TW			ASSEMBLY SERVER						
Cyberfone Systems, LLC	5164-CYBF-636PCT	WO	ORD	DATA TRANSACTION ASSEMBLY SERVER	PCT/US98/12171	22-Jun-98			Closed	9859301
Cyberfone Systems, LLC	5164-CYBF-636IL	IL	ORD	DATA TRANSACTION ASSEMBLY SERVER	19980133496	22-Jun-98	133496	20-Jun-04	Issued	
Cyberfone Systems, LLC	5164-CYBF-636EP	EP	ORD	DATA TRANSACTION ASSEMBLY SERVER	19980931240	22-Jun-98	996895	16-Nov-05	Issued	996895
Cyberfone Systems, LLC	5164-CYBF-636CA	CA	ORD	DATA TRANSACTION ASSEMBLY SERVER	19982295139	22-Jun-98	2,295,139	14-Jun-05	Expired	
Cyberfone Systems, LLC	5164-CYBF-636DE	DE	ORD	DATA TRANSACTION ASSEMBLY SERVER	98931240	22-Jun-98	69832383.1	16-Nov-05	Issued	
Cyberfone Systems, LLC	5164-CYBF-636DE	US	ORD	DATA TRANSACTION ASSEMBLY SERVER	08/877.636	20-Jun-97	6,044,382	28-Mar-00	Issued	
Cyberfone Systems, LLC	5164-CYBF-627-DE	DE	DES	Casing primarily for a computer with telephone	M9505627.0	11-Jul-95			Abandoned	
Cyberfone Systems, LLC	5164-CYBF-546MX	MX	ORD	TELEPHONE/TRANSACTION ENTRY DEVICE AND SYSTEM FOR ENTERING TRANSACTION DATA INTO DATABASES.	19970008955	19-Nov-97	9708955	28-Jun-98	Issued	
Cyberfone Systems, LLC	5164-CYBF-546EPD	EP	DIV	Communication system which transmits data and voice as data transactions	20060009310	16-May-96			Abandoned	1720334
Cyberfone Systems, LLC	5164-CYBF-546EP	EP	ORD	TELEPHONE/TRANSACTION ENTRY DEVICE AND SYSTEM FOR ENTERING TRANSACTION DATA INTO DATABASES	60915846	16-May-96	886954	10-May-06	Issued	886954

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
Cyberfone Systems, LLC	5164-CYBF-546CA	CA	ORD	TELEPHONE/TRANSACT ION ENTRY DEVICE AND SYSTEM FOR ENTERING TRANSACTION DATA INTO DATABASES	19962221853	16-May-96	2,221,853	8-Aug-06	Abandon ed	
Cyberfone Systems, LLC	5164-CYBF-546-DE	DE	ORD	TELEPHONE/TRANSACT ION ENTRY DEVICE AND SYSTEM FOR ENTERING TRANSACTION DATA INTO DATABASES	96915846.8	16-May-96	69636128	10-May-06	Granted	
Cyberfone Systems, LLC	5164-CYBF-546	US	ORD	TELEPHONE/TRANSACT ION ENTRY DEVICE AND SYSTEM FOR ENTERING TRANSACTION DATA INTO DATABASES	08/446,546	19-May-95	5,805,676	8-Sep-98	Issued	
Cyberfone Systems, LLC	5164-CYBF-490	US	DES	COMPUTER WITH INTEGRATED TELEPHONE	29/033,490	13-Jan-95	D371345	2-Jul-96	Issued	
Cyberfone Systems, LLC	5164-CYBF-470	US	ORD	SYSTEM FOR TRANSMISSION OF VOICE AND DATA OVER THE SAME COMMUNICATIONS LINE	11/055,470	10-Feb-05	7,334,024	19-Feb-08	Issued	20050165864
Cyberfone Systems, LLC	5164-CYBF-408	US	ORD	TELEPHONE/TRANSACT ION ENTRY DEVICE AND SYSTEM FOR ENTERING TRANSACTION DATA INTO DATABASES	08/909,408	11-Aug-97	5,987,103	16-Nov-99	Issued	
Cyberfone Systems, LLC	5164-CYBF-386-SG	SG	ORD	LAPSED	1999060386		69659	24-Jan-02	Abandon ed	
Cyberfone	5164-	US	ORD	Telephone/Transaction	11/851,302	6-Sep-07			Abandon	20080056467

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
Systems, LLC	CYBF-302			Entry Device and System for Entering Transaction Data into Databases					ed	
Cyberfone Systems, LLC	5164-CYBF-218	US	ORD	Telephone/Transaction Entry Device and System for Entering Transaction Data into Databases	11/851,218	6-Sep-07			Abandon ed	20080043946
Cyberfone Systems, LLC	5164-CYBF-199	US	ORD	Telephone/Transaction Entry Device and System for Entering Transaction Data into Databases	11/851,199	6-Sep-07			Abandon ed	20070299908
Cyberfone Systems, LLC	5164-CYBF-167-CN	CN	ORD	ABANDONED	95104716.7				Abandon ed	
Cyberfone Systems, LLC	5164-CYBF-130	US	ORD	Apparatus and Method for Cyber Healthcare Monitoring, Diagnosis and Treatment Using Thin Client Communicating Techniques	12/206,130	8-Sep-08			Abandon ed	20090066519
Cyberfone Systems, LLC	5164-CYBF-115-C	US	CON	DATA COMMUNICATION NETWORK FOR PROCESSING DATA TRANSACTION	14/191,112	26-Feb-14			Pending	
Cyberfone Systems, LLC	5164-CYBF-115	US	CON	Data communication network for processing data transactions	13/425,115	20-Mar-12			Publishe d	20120233568
Cyberfone Systems, LLC	5164-CYBF-070-KR	KR	ORD	ABANDONED	95-10070				Abandon ed	
Cyberfone Systems, LLC	5164-CYBF-033	US	DES	COMPUTER WITH INTEGRATED TELEPHONE	29/034,033	25-Jan-95	D372225	30-Jul-96	Issued	
Cyberfone Systems, LLC	5164-CYBF-032	US	DES	COMPUTER WITH INTEGRATED TELEPHONE	29/034,032	25-Jan-95	D371346	2-Jul-96	Issued	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
Cyberfone Systems, LLC	5164-CYBF-022	US	ORD	METHOD AND APPARATUS FOR CAPTURING AND POSITIONING A CABLE System for Automated Device-to-Device Transfer	08/127,022	27-Sep-93	5,427,327	27-Jun-95	Issued	
CRFD Research ,Inc.	5164-CRFD-865	US	ORD	WEB PAGE CONTENT TRANSLATOR	14/147,865	6-Jan-14			Pending	
CRFD Research ,Inc.	5164-CRFD-770	US	ORD	WEB PAGE CONTENT TRANSLATOR	09/707,770	8-Nov-00	7,574,486	11-Aug-09	Granted	
CRFD Research ,Inc.	5164-CRFD-680	US	ORD	SYSTEM FOR AUTOMATED DEVICE-TO-DEVICE TRANSFER	12/458,154	1-Jul-09	8,793,341	29-Jul-14	Issued	
CRFD Research ,Inc.	5164-CRFD-433	US	ORD	SYSTEM FOR AUTOMATED, MID-SESSION, USER-DIRECTED, DEVICE-TO-DEVICE TRANSFER SYSTEM	12/588,433	15-Oct-09	8,650,307	11-Feb-14	Issued	
CRFD Research ,Inc.	5164-CRFD-408	US	ORD	SYSTEM FOR AUTOMATED DEVICE-TO-DEVICE TRANSFER SYSTEM	09/953,408	17-Sep-01	7,191,233	13-Mar-07	Issued	2003-0055977
CRFD Research ,Inc.	5164-CRFD-367	US	ORD	SYSTEM FOR AUTOMATED DEVICE-TO-DEVICE TRANSFER SYSTEM	11/701,367	2-Feb-07	7,624,185	24-Nov-09	Issued	
CRFD Research ,Inc.	5164-CRFD-154	US	ORD	WEB PAGE CONTENT TRANSLATOR	12/458,154	1-Jul-09	8,793,341	29-Jul-14	Issued	
CRFD Research ,Inc.	5164-CRFD-153	US	ORD	Web page content translator	12/458,153	1-Jul-09			Pending	
Clouding Corp.	5164-CLOD-990	US	ORD	SYSTEM FOR CONFIGURATION OF DYNAMIC COMPUTING ENVIRONMENTS USING A VISUAL INTERFACE	09/662,990	15-Sep-00	7,065,637	20-Jun-06	Issued	
Clouding Corp.	5164-CLOD-985	US	ORD	RE-MAPPING A LOCATION-INDEPENDENT ADDRESS IN A COMPUTER NETWORK	10/609,985	30-Jun-03	7,467,194	16-Dec-08	Issued	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
Clouding Corp.	5164-CLOD-973-CA	CA	ORD	DATA STORAGE MANAGEMENT FOR NETWORK INTERCONNECTED PROCESSORS			2183973		Granted	
Clouding Corp.	5164-CLOD-972-PCT	WO	ORD	NETWORK MANAGEMENT SYSTEM HAVING VIRTUAL CATALOG OVERVIEW OF FILES DISTRIBUTIVELY STORED ACROSS NETWORK DOMAIN	PCT/US1994/012972	9-Nov-94			Expired	WO1995/14279
Clouding Corp.	5164-CLOD-971	US	ORD	N/A	10/609,971				Pending	
Clouding Corp.	5164-CLOD-958	US	ORD	METHODS AND APPARATUS FOR FILE SYNCHRONIZATION AND UPDATING USING A SIGNATURE LIST	09/303,958	3-May-99	6,574,657	3-Jun-03	Issued	
Clouding Corp.	5164-CLOD-936-AU	AU	ORD	NETWORK MANAGEMENT SYSTEM HAVING VIRTUAL CATALOG OVERVIEW OF FILES DISTRIBUTIVELY STORED ACROSS NETWORK DOMAIN			1995010936		Granted	
Clouding Corp.	5164-CLOD-919	US	ORD	SYSTEM AND METHOD FOR STORING AND UTILIZING ROUTING INFORMATION IN A COMPUTER NETWORK	10/403,919	31-Mar-03	7,292,585	6-Nov-07	Issued	
Clouding Corp.	5164-CLOD-891	US	ORD	KEY MANAGEMENT FOR NETWORK COMMUNICATION	08/959,919	29-Oct-97	5,825,891	20-Oct-98	Issued	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
Clouding Corp.	5164-CLOD-863	US	ORD	DYNAMIC DISTRIBUTED DATA SYSTEM AND METHOD	10/679,863	6-Oct-03	6,918,014	12-Jul-05	Issued	
Clouding Corp.	5164-CLOD-860	US	PRO	Method and system for transferring application settings, files and other data from one computer to another computer	60/192,860	29-Mar-00			Expired	
Clouding Corp.	5164-CLOD-850-PCT	WO	ORD	METHODS AND APPARATUSES FOR SINGLE-CONNECTION FILE SYNCHRONIZATION AND WORKGROUP FILE UPDAT	PCT/US00/11850	2-May-00			Publishe d	2000/67158
Clouding Corp.	5164-CLOD-831	US	ORD	DYNAMIC DISTRIBUTED DATA SYSTEM AND METHOD	09/972,831	5-Oct-01	6,631,449	7-Oct-03	Issued	
Clouding Corp.	5164-CLOD-811	JP	ORD	< do not have title on file >	2009-063811				Abandon ed	
Clouding Corp.	5164-CLOD-774	US	PRO	Extending snoopy cache consistency to networks	60/238,774	3-Oct-00			Expired	
Clouding Corp.	5164-CLOD-750	US	PRO	FILE SYNCHRONIZATION	60/017,750	15-May-96			Expired	
Clouding Corp.	5164-CLOD-682	US	ORD	Topology and routing model for a computer network	10/326,682	20-Dec-02			Abandon ed	
Clouding Corp.	5164-CLOD-670	US	ORD	REPLICA SYNCHRONIZATION USING COPY-ON-READ TECHNIQUE	10/457,670	9-Jun-03	7,032,089	18-Apr-06	Issued	
Clouding Corp.	5164-CLOD-667-PCT	WO	ORD	KEY MANAGEMENT FOR NETWORK COMMUNICATION	PCT/US1997/000667	16-Jan-97			Expired	WO 1997/26735
Clouding Corp.	5164-CLOD-661	US	ORD	METHOD AND APPARATUS FOR MOVING LARGE NUMBERS OF DATA	08/741,661	31-Oct-96	5,819,296	6-Oct-98	Issued	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
				FILES BETWEEN COMPUTER SYSTEMS USING IMPORT AND EXPORT PROCESSES EMPLOYING A DIRECTORY OF FILE HANDLES						
Clouding Corp.	5164-CLOD-660-PCT	WO	ORD	DATA STORAGE MANAGEMENT FOR NETWORK INTERCONNECTED PROCESSORS	PCT/US95/01660	10-Feb-95			Published	1995/23376
Clouding Corp.	5164-CLOD-658JP	JP	ORD	Data storage management for network interconnected processors	19950522361	10-Feb-95	3786955	21-Jun-06	Expired	H09510806
Clouding Corp.	5164-CLOD-658AU	AU	ORD	Data storage management for network interconnected processors	19142/95	10-Feb-95	693868	9-Jul-98	Issued	
Clouding Corp.	5164-CLOD-658	US	ORD	AUTOMATIC NETWORK MIGRATION OF DATA FILES INTO AND THEIR COLLECTION INTO A TRANSFER UNIT IN SECONDARY STORAGE	08/201,658	25-Feb-94	5,537,585	16-Jul-96	Issued	
Clouding Corp.	5164-CLOD-656-PCT	WO	ORD	NETWORK DISTRIBUTED SYSTEM FOR UPDATING LOCALLY SECURED OBJECTS IN CLIENT MACHINES	PCT/US98/04656	11-Mar-98			Published	1998/44403
Clouding Corp.	5164-CLOD-644	US	ORD	N/A	12/946,448				Pending	
Clouding Corp.	5164-CLOD-637	US	ORD	STORAGE MANAGEMENT SYSTEM	10/821,559	9-Apr-04	7,266,637	4-Sep-07	Issued	
Clouding Corp.	5164-CLOD-618-EP	EP	ORD	NETWORK MANAGEMENT SYSTEM HAVING VIRTUAL			729618		Granted	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica- tion Status	Publication Number
				CATALOG OVERVIEW OF FILES DISTRIBUTIVELY STORED ACROSS NETWORK DOMAIN						
<b>Clouding Corp.</b>	5164-CLOD-609GB	GB	ORD	NETWORK DISTRIBUTED SYSTEM FOR UPDATING LOCALLY SECURED OBJECTS IN CLIENT MACHINES	98910281.9	11-Mar-98	1004069	31-Dec-08	Abandon ed	1004069
<b>Clouding Corp.</b>	5164-CLOD-609FR	FR	ORD	NETWORK DISTRIBUTED SYSTEM FOR UPDATING LOCALLY SECURED OBJECTS IN CLIENT MACHINES	98910281	11-Mar-98	1004069	31-Dec-08	Abandon ed	1004069
<b>Clouding Corp.</b>	5164-CLOD-609EP	EP	ORD	NETWORK DISTRIBUTED SYSTEM FOR UPDATING LOCALLY SECURED OBJECTS IN CLIENT MACHINES	98910281.9	11-Mar-98	EPI004069	31-Dec-08	Issued	EPI004069
<b>Clouding Corp.</b>	5164-CLOD-609DE	DE	ORD	NETWORK DISTRIBUTED SYSTEM FOR UPDATING LOCALLY SECURED OBJECTS IN CLIENT MACHINES	69840409.2	11-Mar-98	69840409	31-Dec-08	Issued	69840409
<b>Clouding Corp.</b>	5164-CLOD-609CA	CA	ORD	NETWORK DISTRIBUTED SYSTEM FOR UPDATING LOCALLY SECURED OBJECTS IN CLIENT MACHINES	2285031	11-Mar-98	CA2285031	20-May-08	Issued	CA2285031
<b>Clouding Corp.</b>	5164-CLOD-609	US	ORD	NETWORK DISTRIBUTED SYSTEM	08/829,609	31-Mar-97	6,029,246	22-Feb-00	Issued	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
				FOR UPDATING LOCALLY SECURED OBJECTS IN CLIENT MACHINES						
Clouding Corp.	5164-CLOD-607	US	ORD	NETWORK MANAGEMENT SYSTEM HAVING VIRTUAL CATALOG OVERVIEW OF FILES DISTRIBUTIVELY STORED ACROSS NETWORK DOMAIN	08/153.011	15-Nov-93	5,495,607	27-Feb-96	Issued	
Clouding Corp.	5164-CLOD-573GB	GB	ORD	SYSTEM AND METHOD FOR AUTOMATICALLY MAINTAINING A COMPUTER SYSTEM	98904874.9	4-Feb-98	968467	22-Jan-03	Abandoned	968467
Clouding Corp.	5164-CLOD-573FR	FR	ORD	SYSTEM AND METHOD FOR AUTOMATICALLY MAINTAINING A COMPUTER SYSTEM	98904874	4-Feb-98	968467	22-Jan-03	Expired	968467
Clouding Corp.	5164-CLOD-573EP	EP	ORD	SYSTEM AND METHOD FOR AUTOMATICALLY MAINTAINING A COMPUTER SYSTEM	98904874.9	4-Feb-98	968467	22-Jan-03	Issued	968467
Clouding Corp.	5164-CLOD-573DE	DE	ORD	SYSTEM AND METHOD FOR AUTOMATICALLY MAINTAINING A COMPUTER SYSTEM	69810910.4	4-Feb-98	69810910	22-Jan-03	Issued	69810910
Clouding Corp.	5164-CLOD-573CA	CA	ORD	SYSTEM AND METHOD FOR AUTOMATICALLY MAINTAINING A COMPUTER SYSTEM	2284214	4-Feb-98	CA2284214	8-Apr-03	Issued	2284214
Clouding Corp.	5164-CLOD-573	US	ORD	SYSTEM AND METHOD FOR AUTOMATICALLY MAINTAINING A COMPUTER SYSTEM	08/820.573	19-Mar-97	5,944,839	31-Aug-99	Issued	
Clouding Corp.	5164-	US	ORD	METHOD SYSTEM AND	09/950.559	10-Sep-01	7,596,784	29-Sep-09	Issued	20020166117

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
	CLOD-559			APPARATUS FOR PROVIDING PAY-PER-USE DISTRIBUTED COMPUTING RESOURCES						
<b>Clouding Corp.</b>	5164-CLOD-548	US	ORD	ENTITY AUTHENTICATION IN A SHARED HOSTING COMPUTER NETWORK ENVIRONMENT	10/071,548	8-Feb-02	7,231,659	12-Jun-07	Issued	20030028762
<b>Clouding Corp.</b>	5164-CLOD-528	US	ORD	NETWORK MANAGEMENT SYSTEM HAVING HISTORICAL VIRTUAL CATALOG SNAPSHOTS FOR OVERVIEW OF HISTORICAL CHANGES TO FILES DISTRIBUTIVELY STORED ACROSS NETWORK DOMAIN	08/590,528	24-Jan-96	5,678,042	14-Oct-97	Issued	
<b>Clouding Corp.</b>	5164-CLOD-509	US	ORD	N/A	12/391,509				Pending	
<b>Clouding Corp.</b>	5164-CLOD-506-IP	JP	ORD	NETWORK MANAGEMENT SYSTEM HAVING VIRTUAL CATALOG OVERVIEW OF FILES DISTRIBUTIVELY STORED ACROSS NETWORK DOMAIN			1995-514506		Granted	
<b>Clouding Corp.</b>	5164-CLOD-505	US	ORD	SYSTEM FOR TRANSFERRING CUSTOMIZED HARDWARE AND SOFTWARE SETTINGS FROM ONE COMPUTER	09/709,505	13-Nov-00	6,963,908	8-Nov-05	Issued	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Application Status	Publication Number
				TO ANOTHER COMPUTER TO PROVIDE PERSONALIZED OPERATING ENVIRONMENTS						
Clouding Corp.	5164-CLOD-487-AU	AU	ORD	KEY MANAGEMENT FOR NETWORK COMMUNICATION	1997017487		1997017487		Abandoned	
Clouding Corp.	5164-CLOD-483	US	ORD	DYNAMIC COMPUTING ENVIRONMENT USING REMOTELY ALLOCABLE RESOURCES	09/861,483	17-May-01	7,278,142	2-Oct-07	Issued	
Clouding Corp.	5164-CLOD-467-GB	GB	ORD	SYSTEM AND METHOD FOR AUTOMATICALLY MAINTAINING A COMPUTER SYSTEM	99703190000		968467	19-Mar-17	Granted	
Clouding Corp.	5164-CLOD-467-FR	FR	ORD	SYSTEM AND METHOD FOR AUTOMATICALLY MAINTAINING A COMPUTER SYSTEM	99703190000		968467		Abandoned	
Clouding Corp.	5164-CLOD-467-EP	EP	ORD	SYSTEM AND METHOD FOR AUTOMATICALLY MAINTAINING A COMPUTER SYSTEM	99703190000		968467		Granted	
Clouding Corp.	5164-CLOD-448JP	JP	ORD	ARCHIVE STREAM BASED INSTALL	JP20090063811	17-Mar-09			Abandoned	JP2009230758
Clouding Corp.	5164-CLOD-448EP	EP	ORD	ARCHIVE STREAM BASED INSTALL	EP09155802.3	20-Mar-09			Published	EP2104039
Clouding Corp.	5164-CLOD-448CN	CN	ORD	ARCHIVE STREAM BASED INSTALL	200910129327.8	20-Mar-09			Abandoned	101576827
Clouding Corp.	5164-CLOD-448	US	ORD	ARCHIVE STREAM BASED INSTALL	12/053,448	21-Mar-08	7,917,902	29-Mar-11	Issued	20090240745

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica- tion Status	Publication Number
Clouding Corp.	5164-CLOD-437	US	ORD	TECHNIQUE FOR ENABLING REMOTE DATA ACCESS AND MANIPULATION FROM A PERVASIVE DEVICE	11/075,437	7-Mar-05	7,254,621	7-Aug-07	Issued	20050216492
Clouding Corp.	5164-CLOD-435CON	US	ORD	METHOD, SYSTEM AND APPARATUS FOR PROVIDING PAY-PER-USE DISTRIBUTED COMPUTING RESOURCES	13/959,807	6-Aug-13			Publishe d	20130317981
Clouding Corp.	5164-CLOD-435	US	ORD	METHOD, SYSTEM AND APPARATUS FOR PROVIDING PAY-PER-USE DISTRIBUTED COMPUTING RESOURCES	12/415,435	31-Mar-09	8,533,674	10-Sep-13	Issued	20090210356
Clouding Corp.	5164-CLOD-419	US	ORD	SYSTEM AND METHOD FOR BUSINESS SYSTEMS TRANSACTIONS AND INFRASTRUCTURE MANAGEMENT	09/681,419	30-Mar-01	7,065,566	20-Jun-06	Issued	20020173997
Clouding Corp.	5164-CLOD-409	US	ORD	SYSTEMS AND METHODS FOR MIGRATION AND RECALL OF DATA FROM LOCAL AND REMOTE STORAGE	09/144,409	31-Aug-98	6,269,382	31-Jul-01	Issued	
Clouding Corp.	5164-CLOD-394	US	ORD	TECHNIQUE FOR ENABLING REMOTE DATA ACCESS AND MANIPULATION FROM A PERVASIVE DEVICE	09/848,394	3-May-01	6,925,481	2-Aug-05	Issued	20020178211
Clouding Corp.	5164-CLOD-384	US	ORD	N/A	08/950,384				Pending	
Clouding Corp.	5164-	AU	ORD	SYSTEM AND METHOD			2002254364		Granted	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
	CLOD-364-AU			FOR BUSINESS SYSTEMS TRANSACTIONS AND INFRASTRUCTURE MANAGEMENT						
<b>Clouding Corp.</b>	5164-CLOD-352	US	ORD	USER INTERFACE FOR DYNAMIC COMPUTING ENVIRONMENT USING ALLOCATEABLE RESOURCES	09/663,252	15-Sep-00	7,082,521	25-Jul-06	Issued	
<b>Clouding Corp.</b>	5164-CLOD-344	US	ORD	DATA STORAGE MANAGEMENT FOR NETWORK INTERCONNECTED PROCESSORS USING TRANSFERRABLE PLACEHOLDERS	08/920,344	27-Aug-97	5,873,103	16-Feb-99	Issued	
<b>Clouding Corp.</b>	5164-CLOD-340-PCT	WO	ORD	METHODS AND APPARATUSES FOR FILE SYNCHRONIZATION AND UPDATING USING A SIGNATURE LIST	PCT/US00/12048	2-May-00			Published	2000/67119
<b>Clouding Corp.</b>	5164-CLOD-332	US	ORD	USER INTERFACE FOR DYNAMIC COMPUTING ENVIRONMENT USING ALLOCATEABLE RESOURCES	11/492,332	25-Jul-06	7,457,944	25-Nov-08	Issued	
<b>Clouding Corp.</b>	5164-CLOD-324	US	ORD	SYSTEM TO PROVIDE COMPUTING AS A PRODUCT USING DYNAMIC COMPUTING ENVIRONMENTS	10/066,324	30-Jan-76	7,036,006	25-Apr-06	Issued	
<b>Clouding Corp.</b>	5164-CLOD-295	US	ORD	METHODS AND APPARATUSES FOR SINGLE-CONNECTION FILE	09/304,295	3-May-99	6,654,746	25-Nov-03	Issued	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
				SYNCHRONIZATION WORKGROUP FILE UPDATE						
Clouding Corp.	5164-CLOD-261	US	ORD	COMMUNICATION SESSIONS FOR A COMPUTER NETWORK	10/403,261	31-Mar-03	7,653,059	26-Jan-25	Issued	
Clouding Corp.	5164-CLOD-247	US	ORD	TOPOLOGY AND ROUTING MODEL FOR A COMPUTER NETWORK	11/763,247	14-Jun-07	7,764,681	27-Jul-10	Issued	
Clouding Corp.	5164-CLOD-232	US	ORD	SYSTEM AND METHOD FOR CORRELATING AND DIAGNOSING SYSTEM COMPONENT PERFORMANCE DATA	10/063,232	2-Apr-02	7,237,023	26-Jun-07	Issued	20020184065
Clouding Corp.	5164-CLOD-231	US	ORD	KEY MANAGEMENT FOR NETWORK COMMUNICATION	08/586,231	16-Jan-96			Abandon ed	
Clouding Corp.	5164-CLOD-215	US	ORD	SYSTEM AND METHOD FOR CORRELATING AND DIAGNOSING SYSTEM COMPONENT PERFORMANCE DATA	11/696,215	4-Apr-07	7,634,563	15-Dec-09	Issued	20080040174
Clouding Corp.	5164-CLOD-214-CA	CA	ORD	SYSTEM AND METHOD FOR AUTOMATICALLY MAINTAINING A COMPUTER SYSTEM	99/703190000		CA 2284214		Abandon ed	
Clouding Corp.	5164-CLOD-204	US	ORD	METHODS FOR OPERATING A LOG DEVICE	08/713,204	12-Sep-96	6,021,408	1-Feb-00	Issued	
Clouding Corp.	5164-CLOD-203	US	PRO	Organizational authentication in shared hosting SSL environments	60/309,203	31-Jul-00			Expired	
Clouding Corp.	5164-CLOD-156	US	ORD	METHODS AND APPARATUS FOR FILE SYNCHRONIZATION AND UPDATING USING	10/452,156	2-Jun-03	6,738,799	18-May-04	Issued	20030200207

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
Clouding Corp.	5164-CLOD-135	US	ORD	A SIGNATURE LIST METHODS FOR AUTOMATICALLY LOCATING URL-CONTAINING OR OTHER DATA-CONTAINING WINDOWS IN FROZEN BROWSER OR OTHER APPLICATION PROGRAM, SAVING CONTENTS, AND RELAUNCHING APPLICATION PROGRAM WITH LINK TO SAVED DATA	09/438,135	10-Nov-99	6,662,310	9-Dec-03	Issued	20020152228
Clouding Corp.	5164-CLOD-134	US	PRO	Method and system for monitoring the performance of a distributed application	60/249,134	16-Nov-00			Expired	
Clouding Corp.	5164-CLOD-129	US	ORD	SYSTEM TO PROVIDE COMPUTING AS A PRODUCT USING DYNAMIC COMPUTING ENVIRONMENTS	11/243,129	4-Oct-05	7,702,892	20-Apr-10	Issued	
Clouding Corp.	5164-CLOD-127	US	ORD	METHOD AND SYSTEM FOR MONITORING THE PERFORMANCE OF A DISTRIBUTED APPLICATION	09/991,127	14-Nov-01	7,600,014	6-Oct-09	Issued	20020099818
Clouding Corp.	5164-CLOD-114IT	IT	ORD	DATA STORAGE MANAGEMENT FOR NETWORK INTERCONNECTED PROCESSORS	95911653.4	10-Feb-95	746819	15-Dec-99	Issued	746819
Clouding Corp.	5164-CLOD-114GB	GB	ORD	DATA STORAGE MANAGEMENT FOR NETWORK INTERCONNECTED	95911653.4	10-Feb-95	746819	15-Dec-99	Issued	746819

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
Clouding Corp.	5164-CLOD-114FR	FR	ORD	PROCESSORS DATA STORAGE MANAGEMENT FOR NETWORK INTERCONNECTED PROCESSORS	95911653.4	10-Feb-95	746819	15-Dec-99	Expired	746819
Clouding Corp.	5164-CLOD-114EP	EP	ORD	DATA STORAGE MANAGEMENT FOR NETWORK INTERCONNECTED PROCESSORS	95911653.4	10-Feb-95	746819	15-Dec-99	Issued	746819
Clouding Corp.	5164-CLOD-114DE	DE	ORD	DATA STORAGE MANAGEMENT FOR NETWORK INTERCONNECTED PROCESSORS	69513956.8	10-Feb-95	69513956	15-Dec-99	Expired	
Clouding Corp.	5164-CLOD-114	US	ORD	DATA STORAGE MANAGEMENT FOR NETWORK INTERCONNECTED PROCESSORS	08/650,114	22-May-96	5,832,522	3-Nov-98	Issued	
Clouding Corp.	5164-CLOD-111	US	ORD	METHOD AND APPARATUS FOR SYNCHRONIZING FILES	08/856,111	14-May-97	5,978,805	2-Nov-99	Expired	
Clouding Corp.	5164-CLOD-105	US	ORD	Dynamic computing environment using allocatable resources	60/228,105	24-Aug-00			Expired	
Clouding Corp.	5164-CLOD-104-DE	DE	ORD	SYSTEM AND METHOD FOR AUTOMATICALLY MAINTAINING A COMPUTER SYSTEM	99703190000		69810910.4		Granted	
Clouding Corp.	5164-CLOD-103-PCT	WO	ORD	METHODS AND APPARATUSES FOR FILE SYNCHRONIZATION AND UPDATING USING A SIGNATURE LIST	PCT/US00/12048	2-May-00			Publicly	2000/67119

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
Clouding Corp.	5164-CLOD-092-DE	DE	ORD	NETWORK DISTRIBUTED SYSTEM FOR UPDATING LOCALLY SECURED OBJECTS IN CLIENT MACHINES	199703310000		69840409.2		Abandon ed	
Clouding Corp.	5164-CLOD-091	US	CIP	NETWORK ACCESS WITH DELAYED DELIVERY	09/840,091	24-Apr-01	7,231,023	12-Jun-07	Issued	
Clouding Corp.	5164-CLOD-078	US	ORD	SYSTEM FOR CONFIGURATION OF DYNAMIC COMPUTING ENVIRONMENTS USING A VISUAL INTERFACE	11/857,078	18-Sep-07	7,836,292	16-Nov-10	Issued	
Clouding Corp.	5164-CLOD-076	US	ORD	METHODS FOR AUTOMATICALLY LOCATING DATA-CONTAINING WINDOWS IN FROZEN APPLICATION PROGRAM AND SAVING CONTENTS	09/438,076	10-Nov-99	6630946	7-Oct-03	Issued	20020169795
Clouding Corp.	5164-CLOD-069-GB	GB	ORD	NETWORK DISTRIBUTED SYSTEM FOR UPDATING LOCALLY SECURED OBJECTS IN CLIENT MACHINES	199703310000		1004069		Abandon ed	
Clouding Corp.	5164-CLOD-069-FR	FR	ORD	NETWORK DISTRIBUTED SYSTEM FOR UPDATING LOCALLY SECURED OBJECTS IN CLIENT MACHINES	199703310000		1004069		Abandon ed	
Clouding Corp.	5164-CLOD-063	US	ORD	SYSTEM FOR CONFIGURATION OF DYNAMIC COMPUTING	11/471,063	20-Jun-06	7,272,708	18-Sep-07	Issued	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
Clouding Corp.	5164-CLOD-061-PCT	WO	ORD	ENVIRONMENTS USING A VISUAL INTERFACE SYSTEM AND METHOD FOR AUTOMATICALLY MAINTAINING A COMPUTER SYSTEM	PCT/US98/02061	4-Feb-98			Pending	
Clouding Corp.	5164-CLOD-038	US	ORD	N/A	12/277,038				Pending	
Clouding Corp.	5164-CLOD-031-CA	CA	ORD	NETWORK DISTRIBUTED SYSTEM FOR UPDATING LOCALLY SECURED OBJECTS IN CLIENT MACHINES	199703310000		2285031		Abandoned	
Clouding Corp.	5164-CLOD-027	US	ORD	METHOD AND SYSTEM FOR MONITORING THE PERFORMANCE OF A DISTRIBUTED APPLICATION	11/863,027	27-Sep-07	8,032,626	4-Oct-11	Issued	
Clouding Corp.	5164-CLOD-019	US	ORD	EVENT MANAGEMENT SYSTEM FOR DISTRIBUTED COMPUTING ENVIRONMENT	08/732,019	16-Oct-96	5,944,782	31-Aug-99	Issued	
Clouding Corp.	5164-CLOD-015	US	ORD	REPLICA SYNCHRONIZATION USING COPY-ON-READ TECHNIQUE	11/406,015	18-Apr-06	7,571,290	4-Aug-09	Issued	
Clouding Corp.	5164-CLOD-012-IP	JP	ORD	Archive stream based install	S07-5012 JP				Pending	
Clouding Corp.	5164-CLOD-012-EP	EP	ORD	Archive stream based install	S07-5012 EP				Pending	
Clouding Corp.	5164-CLOD-012-CN	CN	ORD	Archive stream based install	S07-5012 CN				Pending	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica- tion Status	Publication Number
Clouding Corp.	5164- CLOD-011	US	ORD	SERVER BASED EXTRACTION, TRANSFER, STORAGE AND PROCESSING OF REMOTE SETTINGS, FILES AND DATA	09/852,011	10-May-01	7,032,011	18-Apr-06	Issued	20020104080
Bismark IP, Inc.	5164- BISM-797- DE	DE	ORD	METHOD FOR EVALUATING PERFORMANCE-RELATED MESSAGES IN A PROGRAM-CONTROLLED COMMUNICATION EQUIPMENT	DE19951237 97	29-Jun-95	DE19523797	2-Jan-97	Issued	
Bismark IP, Inc.	5164- BISM-691- EP	EP	ORD	HOW TO DISPLAY ON A TERMINAL EQUIPMENT THE NAMES OF THE OPTIONS OFFERED TO THE USER	EP199809078 53	5-Feb-97	EP0958691	20-Aug-03	Granted	
Bismark IP, Inc.	5164- BISM-494- DE	DE	ORD	METHOD FOR THE INTERPRETATION OF FEATURE PERFORMANCE RELATED MESSAGES IN A PROGRAM CONTROLLED COMMUNICATION SYSTEM	EP199601141 72		DE59610494	10-Jul-03	Granted	
Bismark IP, Inc.	5164- BISM-472- CN	CN	ORD	METHOD FOR EVALUATING PERFORMANCE-RELATED MESSAGES IN A PROGRAM-CONTROLLED COMMUNICATION	DE19951237 97	29-Jun-95	CN1085472	22-May-02	Granted	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
Bismark IP, Inc.	5164-BISM-398-CN	CN	ORD	EQUIPMENT HOW TO DISPLAY ON A TERMINAL EQUIPMENT THE NAMES OF THE OPTIONS OFFERED TO THE USER	EP199809078 53	5-Feb-97	CN1132398	24-Dec-03	Granted	
Bismark IP, Inc.	5164-BISM-355	US	ORD	METHOD FOR EVALUATING PERFORMANCE-RELATED MESSAGES IN A PROGRAM-CONTROLLED COMMUNICATION EQUIPMENT	08/713,355	13-Sep-96	5,734,832	31-Mar-98	Issued	
Bismark IP, Inc.	5164-BISM-340-DE	DE	ORD	HOW TO DISPLAY ON A TERMINAL EQUIPMENT THE NAMES OF THE OPTIONS OFFERED TO THE USER	EP199809078 53		DE59809340	25-Sep-03	Granted	
Bismark IP, Inc.	5164-BISM-233-FR	FR	ORD	METHOD FOR EVALUATING PERFORMANCE-RELATED MESSAGES IN A PROGRAM-CONTROLLED COMMUNICATION EQUIPMENT	DE19951237 97	29-Jun-95	FR2736233	3-Jun-98	Granted	
Bismark IP, Inc.	5164-BISM-225	US	ORD	ARRANGEMENT FOR COUPLING OPTIONAL AUXILIARY DEVICES TO TERMINAL EQUIPMENT OF PRIVATE BRANCH EXCHANGES	08/670,225	21-Jun-96	5,883,896	16-Mar-99	Issued	
Bismark IP, Inc.	5164-	US	ORD	METHOD FOR	09/341,211	7-Jul-99	6,674,848	6-Jan-04	Issued	

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Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica- tion Status	Publication Number
	BISM-211			DISPLAYING PERFORMANCE FEATURE NAMES AT A COMMUNICATION TERMINAL EQUIPMENT						
<b>Bismark IP, Inc.</b>	5164-BISM-210-IT	IT	ORD	METHOD FOR EVALUATING PERFORMANCE-RELATED MESSAGES IN A PROGRAM-CONTROLLED COMMUNICATION EQUIPMENT	IT1996MI01292	29-Jun-95	IT1285210	3-Jun-98	Granted	
<b>Bismark IP, Inc.</b>	5164-BISM-196-PCT	WO	ORD	METHOD FOR DISPLAYING PERFORMANCE FEATURE NAMES AT A COMMUNICATION TERMINAL EQUIPMENT	EP19980907853	5-Feb-97	PCT/DE98/00196		Granted	
<b>Bismark IP, Inc.</b>	5164-BISM-172-EP	EP	ORD	METHOD FOR THE INTERPRETATION OF FEATURE PERFORMANCE RELATED MESSAGES IN A PROGRAM CONTROLLED COMMUNICATION SYSTEM	EP19960114172	15-Sep-95	EP0763954	4-Jun-03	Granted	
<b>Bismark IP, Inc.</b>	5164-BISM-021-GB	GB	ORD	METHOD FOR EVALUATING PERFORMANCE-RELATED MESSAGES IN A PROGRAM-CONTROLLED COMMUNICATION	DE1995123797	29-Jun-95	GB2303021	3-Jun-98	Granted	

A-40

Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
IP Liquidity Ventures	5164-IPL-858	US	ORD	EQUIPMENT ELECTRONIC TIRE MANAGEMENT SYSTEM	09/915,858	26-Jul-01	6,630,885	7-Oct-03	Issued	2002-0126005
IP Liquidity Ventures	5164-IPL-476	US	DIV	METHOD OF MONITORING CONDITIONS OF VEHICLE TIRES	08/454,476	30-May-95	5,562,787	8-Oct-96	Issued	
IP Liquidity Ventures	5164-IPL-346	US	ORD	TREATMENT OF CANCER WITH THALIDOMIDE ALONE OR IN COMBINATION WITH OTHER ANTI-CANCER AGENTS	09/071,813	4-May-98	6,140,346	31-Oct-00	Issued	
IP Liquidity Ventures	5164-IPL-325	US	ORD	TREATMENT OF MELANOMAS WITH THALIDOMIDE ALONE OR IN COMBINATION WITH OTHER ANTI-MELANOMA AGENTS	08/471,353	6-Jun-95	5,731,325	24-Mar-98	Issued	
IP Liquidity Ventures	5164-IPL-155	US	ORD	METHOD FOR TREATING NEUROCOGNITIVE DISORDERS	08/172,155	23-Dec-93	5,434,170	18-Jul-95	Issued	
IP Liquidity Ventures	5164-IPL-028	US	CIP	ELECTRONIC TIRE MANAGEMENT SYSTEM	09/916,028	26-Jul-01	7,161,476	9-Jan-07	Issued	20020075145
Loopback Technologies, Inc.	5164-LPBACK-848	US	ORD	DYNAMIC OCCUPANT POSITION DETECTION SYSTEM AND METHOD FOR A MOTOR VEHICLE	09/309,848	11-May-99	6,151,540	21-Nov-00	Issued	
Loopback Technologies, Inc.	5164-LPBACK-832	US	ORD	EXECUTABLE FILE SYSTEM FOR AN EMBEDDED COMPUTER	10/229,832	27-Aug-02	7,178,139	13-Feb-07	Issued	20040044708
Loopback Technologies, Inc.	5164-LPBACK-814	US	ORD	CONTROL METHOD FOR VARIABLE LEVEL AIRBAG INFLATION	08/695,814	5-Aug-96	5,999,871	7-Dec-99	Issued	
Loopback Technologies, Inc.	5164-LPBACK-	DE	ORD	CONTROL METHOD FOR VARIABLE LEVEL			DE69707601	29-Nov-01	Granted	

A-41

Owner	Atty Docket Number	Country	Case Type	App Title	Application Number	Filing Date	Patent Number	Issue Date	Applica-tion Status	Publication Number
Inc.	601-DE			AIRBAG INFLATION						
Loopback Technologies, Inc.	5164-LPBACK-356-EP	EP	ORD	CONTROL METHOD FOR VARIABLE LEVEL AIRBAG INFLATION	08/927,588	11-Sep-97	5,801,619	1-Sep-98	Issued	
Loopback Technologies, Inc.	5164-LPBACK-588	US	CIP	ANALOG SIGNAL PROCESSING SYSTEM AND DECISION LOGIC FOR CONTROLLING AIRBAG DEPLOYMENT	09/192,523	16-Nov-98	6,219,606	17-Apr-01	Issued	
Loopback Technologies, Inc.	5164-LPBACK-523	US	ORD	RESTRAINT DEPLOYMENT CONTROL METHOD HAVING A DELAYED ADAPTABLE DEPLOYMENT THRESHOLD	08/205,464	4-Mar-94	5,418,722	23-May-95	Issued	
Loopback Technologies, Inc.	5164-LPBACK-464	US	ORD	SIR DEPLOYMENT METHOD WITH ROUGH ROAD IMMUNITY	09/607,302	30-Jun-00	6,369,703	9-Apr-02	Issued	
Loopback Technologies, Inc.	5164-LPBACK-302	US	ORD	Tire pressure monitor and location identification system	08/610,021	4-Mar-96	6,175,299	16-Jan-01	Issued	
Loopback Technologies, Inc.	5164-LPBACK-021	US	ORD	ANALOG SIGNAL PROCESSING SYSTEM FOR DETERMINING AIRBAG DEPLOYMENT	08/438,048	8-May-95	5835095	10-Nov-98	Issued	
Vantage Point Technology, Inc.		US		VISIBLE LINE PROCESSOR	11/767,666	25-June-07	7496920	24-Feb-09	Issued	
Clouding Corp.		US		Dynamic computing environment using remotely allocable resources	11/849,957					
		US		DATA N/A						

A-42

AO 120 (Rev. 08/10)

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following  
 Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 14-cv-03105	DATE FILED 4/23/2014	U.S. DISTRICT COURT Central District of California
PLAINTIFF SIGNAL IP, INC.		DEFENDANT FIAT U.S.A., INC., FIAT NORTH AMERICA LLC and CHRYSLER GROUP LLC
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 5,463,374	10/31/1995	Signal IP, Inc.
2 5,714,927	2/3/1995	Signal IP, Inc.
3 5,732,375	3/24/1998	Signal IP, Inc.
4 6,012,007	1/4/2000	Signal IP, Inc.
5 6,434,486	8/13/2002	Signal IP, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT 10/16/2014 case transferred to USDC, Eastern District of Michigan, Detroit re Order granting Motion to transfer case.	
---	---

CLERK Terry R Nafisi	(BY) DEPUTY CLERK Sharon Hall-Brown	DATE 10/9/2014
-------------------------	--	-------------------

Copy 1—Upon initiation of action, mail this copy to Director    Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director    Copy 4—Case file copy



AO 120 (Rev. 08/10)

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
---	---


In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following  
 Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 14-cv-03105	DATE FILED 4/23/2014	U.S. DISTRICT COURT Central District of California
PLAINTIFF SIGNAL IP, INC.		DEFENDANT FIAT U.S.A., INC., FIAT NORTH AMERICA LLC and CHRYSLER GROUP LLC
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 5,463,374	10/31/1995	Signal IP, Inc.
2 5,714,927	2/3/1995	Signal IP, Inc.
3 5,732,375	3/24/1998	Signal IP, Inc.
4 6,012,007	1/4/2000	Signal IP, Inc.
5 6,434,486	8/13/2002	Signal IP, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY	
	<input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT 10/16/2014 case transferred to USDC, Eastern District of Michigan, Detroit re Order granting Motion to transfer case.	
---	---

CLERK Terry R Nafisi	(BY) DEPUTY CLERK Sharon Hall-Brown	DATE 10/9/2014
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Copy 1—Upon initiation of action, mail this copy to Director    Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director    Copy 4—Case file copy



UNITED STATES PATENT AND TRADEMARK OFFICE  
UNDER SECRETARY OF COMMERCE FOR  
INTELLECTUAL PROPERTY AND  
DIRECTOR OF THE UNITED STATES PATENT  
AND TRADEMARK OFFICE  
Alexandria, Virginia 22313

Patent No. 5732375

Paper No. \_\_\_\_\_

### NOTICE OF *EX PARTE* REEXAMINATION

Notice is hereby given that a request for *ex parte* reexamination of U.S. Patent No.

5732375 was filed on 10-27-14 under 35 U.S.C. 302 and

37 CFR 1.510(a).

The reexamination proceeding has been assigned Control No. 90/013386.

This Notice incorporates by reference into the patent file, all papers entered into the reexamination file.

**Note: This Notice should be entered into the patent file and given a paper number.**

AO 120 (Rev. 08/10)

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> P.O. Box 1450 Alexandria, VA 22313-1450	<b>REPORT ON THE                  FILING OR DETERMINATION OF AN                  ACTION REGARDING A PATENT OR                  TRADEMARK</b>
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:14-cv-2454	DATE FILED 4/1/2014	U.S. DISTRICT COURT Central District of California
PLAINTIFF SIGNAL IP, INC.		DEFENDANT AMERICAN HONDA MOTOR CO., INC. and HONDA OF AMERICA MFG., INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 5,714,927	2/3/1998	Signal IP, Inc.
2 6,012,007	1/4/2000	Signal IP, Inc.
3 5,732,375	3/24/1998	Signal IP, Inc.
4 6,434,486	8/13/2002	Signal IP, Inc.
5 6,775,601	8/10/2004	Signal IP, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1			
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
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CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director    Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director    Copy 4—Case file copy



1100 Glendon Avenue, 14th Floor  
Los Angeles, CA 90024-3505  
t. 310.500.3500 f. 310.500.3501

Yvonne Fide  
yfide@linerlaw.com  
Direct Dial: (310) 500-3518

April 3, 2014

Director  
U.S. Patent and Trademark Office  
Mail Stop 8  
P.O. Box 1450  
Alexandria, VA 22313-1450

Re: Signal IP, Inc. v. American Honda Motor Co., Inc., et al.; U.S. District Court Case No. 2:14-cv-2454-JAK (JEMx)

Dear Director:

Enclosed please find a copy of the Report on the Filing of an Action Regarding a Patent in the above referenced matter related to Signal IP, Inc. Patent Nos. 5,714,927 dated 2/3/1998, 6,012,007 dated 1/4/2000, 5,732,375 dated 3/24/1998, 6,434,486 dated 8/13/2002 and 6,775,601 dated 8/10/2004.

Very truly yours,

LINER LLP

Yvonne Fide  
Assistant to Ryan E. Hatch

YF  
Enclosure

AO 120 (Rev. 08/10)

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:14-cv-02462	DATE FILED 4/1/2014	U.S. DISTRICT COURT Central District of California
PLAINTIFF SIGNAL IP, INC.		DEFENDANT MITSUBISHI MOTORS NORTH AMERICA, INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 5,463,374	10/31/1995	Signal IP, Inc.
2 6,012,007	1/4/2000	Signal IP, Inc.
3 5,732,375	3/24/1998	Signal IP, Inc.
4 6,434,486	8/13/2002	Signal IP, Inc.
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
--------------------

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

UNITED STATES DISTRICT COURT  
CENTRAL DISTRICT OF CALIFORNIA

SIGNAL IP, INC.

PLAINTIFF(S)

v.

MITSUBISHI MOTORS NORTH AMERICA, INC.

DEFENDANT(S).

CASE NUMBER

2:14-CV-2462

NOTICE OF INTRA-DISTRICT TRANSFER  
BY CLERK OF COURT

To: All Counsel Appearing of Record

Due to clerical error, this case was improperly assigned to the  Western  Southern  Eastern Division of this District. Pursuant to General Order  98-3  02-06, this case is hereby transferred to the  Western  Southern  Eastern Division for all further proceedings.

Case was opened in the CM/ECF System by counsel, and provisionally assigned to a division of this Court. After review of the pleadings, pursuant to the General Orders of the Court, this case is hereby transferred to the  Western  Southern  Eastern Division.

This case has been reassigned to case number 8:14-CV-497 and has been  assigned  reassigned to Judge David O. Carter for all further proceedings.

Any matters that are or may be referred to a Magistrate Judge are hereby  assigned  reassigned to Magistrate Judge Douglas F. McCormick for:

any discovery and/or post-judgment matters that may be referred.  
 for all proceedings in accordance with General Order 05-07.

All documents filed in this case must reflect the new case number and newly assigned Judge/Magistrate Judge initials so that the new case number will read: 8:14-cv-497-DOC (DFMx). This is very important because any documents presented to the Clerk for filing in paper format are routed by the initials.

Documents exempted from electronic filing that are presented to the Clerk for filing in paper format must be filed at the following location:

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Western Division           | <input checked="" type="checkbox"/> Southern Division | <input type="checkbox"/> Eastern Division |
| <input type="checkbox"/> 312 N. Spring St., Rm. G-8 | 411 West Fourth St., Rm. 1-053                        | 3470 Twelfth St., Rm. 134                 |
| <input type="checkbox"/> 255 E. Temple St., Rm 178  | Santa Ana, CA 92701-4516                              | Riverside, CA 92501                       |
| Los Angeles, CA 90012                               |   |   |

Failure to file at the proper location will result in your documents being returned to you.

Clerk, U.S. District Court

By: MDAVIS  
Deputy Clerk

cc: Previously assigned Judge/Magistrate Judge; Deputy-In-Charge; Intake Coordinator; Statistics Clerk



1100 Glendon Avenue, 14th Floor  
Los Angeles, CA 90024-3505  
t. 310.500.3500 f. 310.500.3501

Yvonne Fide  
yfide@linerlaw.com  
Direct Dial: (310) 500-3518

April 3, 2014

Director  
U.S. Patent and Trademark Office  
Mail Stop 8  
P.O. Box 1450  
Alexandria, VA 22313-1450

Re: Signal IP, Inc. v. Mitsubishi Motors North America, Inc.; U.S. District Court Case No. 8:14-cv-497-DOC (DFMx)

Dear Director:

Enclosed please find a copy of the Report on the Filing of an Action Regarding a Patent in the above referenced matter related to Signal IP, Inc. Patent Nos. 5,463,374 dated 10/31/1995, 6,012,007 dated 1/4/2000, 5,732,375 dated 3/24/1998 and 6,434,486 dated 8/13/2002. Also enclosed is a copy of the Notice of Intra-District Transfer which indicates the new case number referenced above.

Very truly yours,

LINER LLP



Yvonne Fide

YF  
Enclosures

AO 120 (Rev. 08/10)

<b>TO:</b> <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:14-cv-02459	DATE FILED 4/1/2014	U.S. DISTRICT COURT Central District of California
PLAINTIFF SIGNAL IP, INC.		DEFENDANT MAZDA MOTOR OF AMERICA, INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 5,463,374	10/31/1995	Signal IP, Inc.
2 5,714,927	2/3/1998	Signal IP, Inc.
3 5,732,375	3/24/1998	Signal IP, Inc.
4 6,012,007	1/4/2000	Signal IP, Inc.
5 6,434,486	8/13/2002	Signal IP, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
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CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy



UNITED STATES DISTRICT COURT  
CENTRAL DISTRICT OF CALIFORNIA

Signal IP, Inc. a California corporation

PLAINTIFF(S)

v.

Mazda Motor of America, Inc. a California corporation

DEFENDANT(S).

CASE NUMBER

2:14-02459

NOTICE OF INTRA-DISTRICT TRANSFER  
BY CLERK OF COURT

To: All Counsel Appearing of Record

Due to clerical error, this case was improperly assigned to the  Western  Southern  Eastern Division of this District. Pursuant to General Order  98-3  02-06, this case is hereby transferred to the  Western  Southern  Eastern Division for all further proceedings.

Case was opened in the CM/ECF System by counsel, and provisionally assigned to a division of this Court. After review of the pleadings, pursuant to the General Orders of the Court, this case is hereby transferred to the  Western  Southern  Eastern Division.

This case has been reassigned to case number 8:14-cv-00491 and has been  assigned  reassigned to Judge James V. Selna for all further proceedings.

Any matters that are or may be referred to a Magistrate Judge are hereby  assigned  reassigned to Magistrate Judge Douglas F. McCormick for:

any discovery and/or post-judgment matters that may be referred.  
 for all proceedings in accordance with General Order 05-07.

All documents filed in this case must reflect the new case number and newly assigned Judge/Magistrate Judge initials so that the new case number will read: 8:14-cv-00491 JVS (DFMx). This is very important because any documents presented to the Clerk for filing in paper format are routed by the initials.

Documents exempted from electronic filing that are presented to the Clerk for filing in paper format must be filed at the following location:

<input type="checkbox"/> Western Division	<input checked="" type="checkbox"/> Southern Division	<input type="checkbox"/> Eastern Division
<input type="checkbox"/> 312 N. Spring St., Rm. G-8	411 West Fourth St., Rm. 1-053	3470 Twelfth St., Rm. 134
<input type="checkbox"/> 255 E. Temple St., Rm 178	Santa Ana, CA 92701-4516	Riverside, CA 92501
Los Angeles, CA 90012		

Failure to file at the proper location will result in your documents being returned to you.

Clerk, U.S. District Court

By: E. TAMAYO

Deputy Clerk

cc: Previously assigned Judge/Magistrate Judge; Deputy-In-Charge;  
Intake Coordinator; Statistics Clerk



1100 Glendon Avenue, 14th Floor  
Los Angeles, CA 90024-3505  
t. 310.500.3500 f. 310.500.3501

Yvonne Fide  
yfide@linerlaw.com  
Direct Dial: (310) 500-3518

April 3, 2014

Director  
U.S. Patent and Trademark Office  
Mail Stop 8  
P.O. Box 1450  
Alexandria, VA 22313-1450

Re: Signal IP, Inc. v. Mazda Motor of America, Inc.; U.S. District Court Case No. 8:14-cv-00491  
JVS (DFMx)

Dear Director:

Enclosed please find a copy of the Report on the Filing of an Action Regarding a Patent in the above referenced matter related to Signal IP, Inc. Patent Nos. 5,463,374 dated 10/31/1995, 5,714,927 dated 2/3/1998, 6,012,007 dated 1/4/2000, 5,732,375 dated 3/24/1998 and 6,434,486 dated 8/13/2002. Also enclosed is a copy of the Notice of Intra-District Transfer which indicates the new case number referenced above.

Very truly yours,

LINER LLP

Yvonne Fide  
Assistant to Ryan E. Hatch

YF  
Enclosures

AO 120 (Rev. 08/10)

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:14-cv-02457	DATE FILED 4/1/2014	U.S. DISTRICT COURT Central District of California
PLAINTIFF SIGNAL IP, INC.		DEFENDANT KIA MOTORS AMERICA, INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 5,714,927	2/3/1998	Signal IP, Inc.
2 6,012,007	1/4/2000	Signal IP, Inc.
3 5,732,375	3/24/1998	Signal IP, Inc.
4 6,434,486	8/13/2002	Signal IP, Inc.
5 6,775,601	8/10/2004	Signal IP, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
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CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director    Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director    Copy 4—Case file copy



1100 Glendon Avenue, 14th Floor  
Los Angeles, CA 90024-3505  
t. 310.500.3500 f. 310.500.3501

Yvonne Fide  
yfide@linerlaw.com  
Direct Dial: (310) 500-3518

April 3, 2014

Director  
U.S. Patent and Trademark Office  
Mail Stop 8  
P.O. Box 1450  
Alexandria, VA 22313-1450

Re: Signal IP, Inc. v. Kia Motors America, Inc.; U.S. District Court Case No. 2:14-cv-02457-DMG (VBKx)

Dear Director:

Enclosed please find a copy of the Report on the Filing of an Action Regarding a Patent in the above referenced matter related to Signal IP, Inc. Patent Nos. 5,714,927 dated 2/3/1998, 6,012,007 dated 1/4/2000, 5,732,375 dated 3/24/1998, 6,434,486 dated 8/13/2002 and 6,775,601 dated 8/10/2004.

Very truly yours,

LINER LLP

Yvonne Fide  
Assistant to Ryan E. Hatch

YF  
Enclosure

AO 120 (Rev. 08/10)

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> P.O. Box 1450 Alexandria, VA 22313-1450	<b>REPORT ON THE                  FILING OR DETERMINATION OF AN                  ACTION REGARDING A PATENT OR                  TRADEMARK</b>
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following  
 Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 2:14-cv-02962	DATE FILED 4/17/2014	U.S. DISTRICT COURT Central District of California	
PLAINTIFF SIGNAL IP, INC.		DEFENDANT NISSAN NORTH AMERICA, INC.	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1 5,463,374	10/31/1995	Signal IP, Inc.	
2 5,714,927	2/3/1998	Signal IP, Inc.	
3 6,012,007	1/4/2000	Signal IP, Inc.	
4 5,732,375	3/24/1998	Signal IP, Inc.	
5 6,434,486	8/13/2002	Signal IP, Inc.	

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY	<input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading			
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK			
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
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Copy 1—Upon initiation of action, mail this copy to Director    Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director    Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE                  FILING OR DETERMINATION OF AN                  ACTION REGARDING A PATENT OR                  TRADEMARK</b>
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:14-cv-03113	DATE FILED 4/23/2014	U.S. DISTRICT COURT Central District of California
PLAINTIFF Signal IP, Inc.		DEFENDANT Volkswagen Group of America, Inc., d/b/a. Audi of America, Inc.; Audi of America, LLC; and Bentley Motors, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 5,714,927	2/3/1995	Signal IP, Inc.
2 5,732,375	3/24/1998	Signal IP, Inc.
3 5,954,775	9/21/1999	Signal IP, Inc.
4 6,012,007	1/4/2000	Signal IP, Inc.
5 6,434,486	8/13/2002	Signal IP, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY	
	<input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT		
CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director    Copy 3—Upon termination of action, mail this copy to Director  
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AO 120 (Rev. 08/10)

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following  
 Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 14-cv-03105	DATE FILED 4/23/2014	U.S. DISTRICT COURT Central District of California
PLAINTIFF SIGNAL IP, INC.		DEFENDANT FIAT U.S.A., INC., FIAT NORTH AMERICA LLC and CHRYSLER GROUP LLC
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 5,463,374	10/31/1995	Signal IP, Inc.
2 5,714,927	2/3/1995	Signal IP, Inc.
3 5,732,375	3/24/1998	Signal IP, Inc.
4 6,012,007	1/4/2000	Signal IP, Inc.
5 6,434,486	8/13/2002	Signal IP, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
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CLERK	(BY) DEPUTY CLERK	DATE
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 Copy 2—Upon filing document adding patent(s), mail this copy to Director    Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 14-cv-03106	DATE FILED 4/23/2014	U.S. DISTRICT COURT Central District of California
PLAINTIFF SIGNAL IP, INC.		DEFENDANT FORD MOTOR COMPANY
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 5,463,374	10/31/1995	Signal IP, Inc.
2 5,714,927	2/3/1995	Signal IP, Inc.
3 5,732,375	3/24/1998	Signal IP, Inc.
4 6,012,007	1/4/2000	Signal IP, Inc.
5 6,434,486	8/13/2002	Signal IP, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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DECISION/JUDGEMENT
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AO 120 (Rev. 08/10)

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following  
 Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 2:14-cv-03111	DATE FILED 4/23/2014	U.S. DISTRICT COURT Central District of California
PLAINTIFF SIGNAL IP, INC.		DEFENDANT BMW OF NORTH AMERICA, LLC, a Delaware limited liability company; BMW (US) HOLDING CORP., a Delaware corporation
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 5,714,927	2/3/1995	Signal IP, Inc.
2 5,732,375	3/24/1998	Signal IP, Inc.
3 5,954,775	9/21/1999	Signal IP, Inc.
4 6,012,007	1/4/2000	Signal IP, Inc.
5 6,434,486	8/13/2002	Signal IP, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
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AO 120 (Rev. 08/10)

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> P.O. Box 1450 Alexandria, VA 22313-1450	<b>REPORT ON THE                  FILING OR DETERMINATION OF AN                  ACTION REGARDING A PATENT OR                  TRADEMARK</b>
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 Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:14-cv-03113	DATE FILED 4/23/2014	U.S. DISTRICT COURT Central District of California
PLAINTIFF Signal IP, Inc.		DEFENDANT Volkswagen Group of America, Inc., d/b/a. Audi of America, Inc.; Audi of America, LLC; and Bentley Motors, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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2 5,732,375	3/24/1998	Signal IP, Inc.
3 5,954,775	9/21/1999	Signal IP, Inc.
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

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AO 120 (Rev. 08/10)

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE                  FILING OR DETERMINATION OF AN                  ACTION REGARDING A PATENT OR                  TRADEMARK</b>
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:14-cv-02962	DATE FILED 4/17/2014	U.S. DISTRICT COURT Central District of California	
PLAINTIFF SIGNAL IP, INC.		DEFENDANT NISSAN NORTH AMERICA, INC.	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1 5,463,374	10/31/1995	Signal IP, Inc.	
2 5,714,927	2/3/1998	Signal IP, Inc.	
3 6,012,007	1/4/2000	Signal IP, Inc.	
4 5,732,375	3/24/1998	Signal IP, Inc.	
5 6,434,486	8/13/2002	Signal IP, Inc.	

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
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CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director    Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director    Copy 4—Case file copy

3-24-1998

PTO UTILITY GRANT

Paper Number 6

The Commissioner of Patents and Trademarks

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the U.S. filing date, subject to an statutory extension. If the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121 or 365(c), the term of the patent is twenty years from the date on which the earliest application was filed, subject to any statutory extension.

Bruce Lehman  
Commissioner of Patents and Trademarks

Attest Mary J. Green

The United States of America



Form PTO-1584 (Rev. 2/77)

(RIGHT INSIDE)

E.N.

Best Available Copy  
PART B - ISSUE FEE TRANSMITTAL

**MAILING INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE. Blocks 2 through 6 should be completed where appropriate. All further correspondence including the Issue Fee Receipt, the Patent, advance orders and notification of maintenance fees will be mailed to addressee entered in Block 1 unless you direct otherwise, by: (a) specifying a new correspondence address in Block 3 below; or (b) providing the PTO with a separate "FEE ADDRESS" for maintenance fee notifications with the payment of Issue Fee or thereafter. See reverse for Certificate of Mailing.

1. CORRESPONDENCE ADDRESS	2. INVENTOR(S) ADDRESS CHANGE (Complete only if there is a change)
MARK A NAVARRE DELCO ELECTRONICS CORPORATION ERC BUILDING MAIL STOP D 32 P O BOX 9005 KOKOMO IN 46904	INVENTOR'S NAME
	Street Address
	City, State and ZIP Code
	CO-INVENTOR'S NAME
	Street Address
	City, State and ZIP Code
	<input type="checkbox"/> Check if additional changes are on reverse side

RECEIVED  
Publishing Division  
NOV 14 1997  
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B3M1/0910

EV

SERIES CODE/SERIAL NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/566,029	12/01/95	019	NGUYEN, T. 2304	09/10/97
First Named Applicant	CASHLER, ROBERT J.			

TITLE OF INVENTION: METHOD OF INHIBITING OR ALLOWING AIRBAG DEPLOYMENT

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2 H-195546	701-045.000	R44	UTILITY	NO	\$1290.00	12/10/97

#1320.00

3. Correspondence address change (Complete only if there is a change)	4. For printing on the patent front page, list the names of not more than 3 registered patent attorneys or agents OR, alternatively, the name of a firm having as a member a registered attorney or agent. If no name is listed, no name will be printed.
	1 <u>Mark A. Navarre</u>
	2 _____
	3 _____

12/02/1997 CASHBY 00000068 DAB:040549 08566029  
01 FC:142 1320.00 CH

DO NOT USE THIS SPACE

5. ASSIGNMENT DATA TO BE PRINTED ON THE PATENT (print or type)	6a. The following fees are enclosed:
(1) NAME OF ASSIGNEE: Delco Electronics Corp.	<input type="checkbox"/> Issue Fee <input type="checkbox"/> Advance Order - # of Copies _____
(2) ADDRESS: (CITY & STATE OR COUNTRY) Kokomo, IN USA	6b. The following fees should be charged to: DEPOSIT ACCOUNT NUMBER 04-0549 (ENCLOSE PART C) <input checked="" type="checkbox"/> Issue Fee <input type="checkbox"/> Advance Order - # of Copies _____ <input type="checkbox"/> Any Deficiencies in Enclosed Fees

A.  This application is NOT assigned.  
 Assignment previously submitted to the Patent and Trademark Office.  
 Assignment is being submitted under separate cover. Assignments should be directed to Box ASSIGNMENTS.  
**PLEASE NOTE:** Unless an assignee is identified in Block 5, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the PTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

The COMMISSIONER OF PATENTS AND TRADEMARKS is requested to apply the Issue Fee to the application identified above.  
 (Authorized Signature) Jimmy J. Zinke (Date) 11/11/97  
 NOTE: The Issue Fee 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 Patent and Trademark Office.

1. TRANSMIT THIS FORM WITH FEE-CERTIFICATE OF MAILING ON REVERSE.

**Certificate of Mailing**

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

Box ISSUE FEE  
Commissioner of Patents and Trademarks  
Washington, D.C. 20231

on November 11, 1997  
(Date)

Carole J. Murdock  
(Name of person making deposit)

Carole J. Murdock  
(Signature)

November 11, 1997  
(Date)

Note: If this certificate of mailing is used, it can only be used to transmit the Issue Fee. 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.

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Burden Hour Statement: This form is estimated to take .2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Office of Information Systems, Patent and Trademark Office, Washington, D.C. 20231, and to the Office of Information and Regulatory Affairs, Office of Management and Budget, (Project 0651-0033), Washington, D.C. 20503. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner of Patents and Trademarks, Box Issue Fee, Washington, DC 20231.

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UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

Address: Box ISSUE FEE  
COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

B0M1/0910

MARK A NAVARRE  
DELCO ELECTRONICS CORPORATION  
ERC BUILDING MAIL STOP D 32  
P O BOX 9005  
FLORHAM IN 45304

**NOTICE OF ALLOWANCE  
AND ISSUE FEE DUE**

- Note attached communication from the Examiner
- This notice is issued in view of applicant's communication filed \_\_\_\_\_

SERIES CODE/SERIAL NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/566,029	12/01/95	019	NGUYEN, T	2304 09/10/97
First Named Applicant	CASHLER, ROBERT J.			

TITLE OF INVENTION METHOD OF INHIBITING OR ALLOWING AIRBAG DEPLOYMENT

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2 H-195546	701-045.000	R44	UTILITY	NO	\$1290.00	12/10/97

**THE APPLICATION IDENTIFIES ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.**

**THE ISSUE FEE 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.**

**HOW TO RESPOND 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 changed, pay twice the amount of the FEE DUE shown above and notify the patent and Trademark Office of the change in status, or
  - B. If the Status is the same, pay the FEE DUE shown above.

- If the SMALL ENTITY is shown as NO:
  - A. Pay FEE DUE shown above, or
  - B. File verified statement of Small Entity Status before, or with, pay of 1/2 the FEE DUE shown above.

- II. Part B of this notice should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B should be completed and returned. If you are charging the ISSUE FEE to your deposit account, Part C of this notice should also be completed and returned.

- III. All communications regarding this application must give series code (or filing date), serial number and batch number. Please direct all communication prior to issuance to Box ISSUE FEE unless advised to contrary.

**IMPORTANT REMINDER: 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.**

08/566,029

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UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

ISSUE NUMBER B3M1/0910	FILING DATE 12/01/95	CASHIER CASHIER	FIRST NAMED APPLICANT R	ATTORNEY DOCKET NO. H-195546
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MARK A NAVARRE  
DELCO ELECTRONICS CORPORATION  
ERC BUILDING MAIL STOP D 32  
P O BOX 9005  
KOKOMO IN 46904

B3M1/0910

EXAMINER NGUYEN, T
-----------------------

ART UNIT 2304	PAPER NUMBER 5
------------------	-------------------

09/10/97

DATE MAILED:

NOTICE OF ALLOWABILITY

PART I

- This communication is responsive to the amendment filed on 06/13/1997
- All the claims being allowable. PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice Of Allowance And Issue Fee Due or other appropriate communication will be sent in due course.
- The allowed claims are 1-14, 16, 20-21, 23-24 (now renumbered as 1-19)
- The drawings filed on 12/01/95 are acceptable.
- Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has [-] been received. [-] not been received. [-] been filed in parent application Serial No. \_\_\_\_\_ filed on \_\_\_\_\_
- Note the attached Examiner's Amendment.
- Note the attached Examiner Interview Summary Record, PTOL-413.
- Note the attached Examiner's Statement of Reasons for Allowance.
- Note the attached NOTICE OF REFERENCES CITED, PTO-892.
- Note the attached INFORMATION DISCLOSURE CITATION, PTO-1449.

PART II

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

- Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
- APPLICANT MUST MAKE THE DRAWING CHANGES INDICATED BELOW IN THE MANNER SET FORTH ON THE REVERSE SIDE OF THIS PAPER.
  - Drawing informalities are indicated on the NOTICE RE PATENT DRAWINGS, PTO-948, attached hereto or to Paper No. \_\_\_\_\_. CORRECTION IS REQUIRED.
  - The proposed drawing correction filed on \_\_\_\_\_ has been approved by the examiner. CORRECTION IS REQUIRED.
  - Approved drawing corrections are described by the examiner in the attached EXAMINER'S AMENDMENT. CORRECTION IS REQUIRED.
  - Formal drawings are now REQUIRED.

Any response to this letter should include in the upper right hand corner, the following information from the NOTICE OF ALLOWANCE AND ISSUE FEE DUE: ISSUE BATCH NUMBER, DATE OF THE NOTICE OF ALLOWANCE, AND SERIAL NUMBER.

Attachments:

- Examiner's Amendment
- Examiner Interview Summary Record, PTOL-413
- Reasons for Allowance
- Notice of References Cited, PTO-892
- Information Disclosure Citation, PTO-1449
- Notice of Informal Application, PTO-152
- Notice re Patent Drawings, PTO-948
- Listing of Bonded Draftsmen
- Other

*Tan Q. Nguyen*  
TAN Q. NGUYEN  
PATENT EXAMINER  
GROUP 2300



1. **EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE**

2. This communication is an Examiner's reasons for allowance in response to application filed on December 01, 1995, assigned serial 08/566,029 and titled "METHOD OF INHIBITING OR ALLOWING AIR BAG DEPLOYMENT".

3. The following is the Examiner's statement of reasons for the indication of allowable subject matter:

a. After carefully reviewing the application in light of the prior art of record, the amended claims and additional search of all the possible areas relevant to the present application, a set of related prior art references has been found, but those prior art references are not deemed strong to make the application unpatentable. Thus, it is found that the application is now in condition for allowance.

b. Although the prior art disclose several claimed limitations, none of the references teaches a method of airbag control in a vehicle having an array of force sensors on the passenger seat coupled to a controller for determining whether to allow airbag deployment based on the sensed force and the force distribution which includes the steps of defining a plurality of seat area in which each area includes at least one sensor, determining the existence of a local pressure area when the calculated total

force of the sensor array is concentrated in one of the seat areas, calculating a local force as the sum of forces sensed by each sensor located in the seat area in which the total force is concentrated, and allowing deployment if the local force is greater than a predefined seat area threshold force (claim 1). Also, neither references teaches the steps of assigning a load rating to each sensor based on its measured force, wherein the load ratings being limited to maximum value, summing the assigned load ratings for all the sensors to derive a total load rating, and allowing deployment if the total load rating is above a predefined total load threshold, even if the calculated total force of the sensor array is less than the total threshold force (claim 11).

c. The limitations “if the total force is not above the total threshold force, determining a fuzzy total force contribution value based on the calculated total force; defining a plurality of seat areas, at least one sensor located in each seat area, calculating a local force for each seat area as the sum of forces sensed by each sensor located in that seat area, determining a fuzzy local force contribution value based on each of the calculated local forces, summing the fuzzy total force and fuzzy local force contribution values, and allowing deployment if the summed contribution values exceed a predetermined fuzzy threshold” in claim 13 render the claim nonobvious over the prior art of record.

d. In the Schousek reference (5,474,327), the total weight and weight

distribution are calculated and are used to distinguish the presence of an adult, an infant seat facing forward, or an infant seat facing rearward, and the inhibition deployment of the airbag is based on the presence of an adult, presence and position of an infant seat. However, Schousek does not disclose the steps of determining the local force as the sum of forces sensed by each sensor located in the seat area, and allowing deployment if the local force is greater than a predefined seat area. Moreover, the Barrus reference (5,570,301) neither teaches the use of pattern recognition to identify the presence of an infant seat, nor the comparison of the sum of the fuzzy local force and the fuzzy total force contribution values with a predefined fuzzy threshold.

e. Claims 1-14, 16, 20, 21, 23, and 24 allowable over the prior art of record (now renumbered as 1-19).

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Tan Nguyen, whose telephone number is (703) 305-9755. The examiner can normally be reached on Monday-Thursday from 7:30 AM-6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin J. Teska, can be reached on (703) 305-9704.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

Serial No.: 08/566,029  
Art Unit: 2304

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

**Or:**

(703) 308-5357 (for informal or draft communications, please label  
"PROPOSED" or "DRAFT")

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

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

/tqn  
September 09, 1997

  
TAN Q. NGUYEN  
PATENT EXAMINER  
GROUP 2300

INFORMATION DISCLOSURE CITATION WITH DOCUMENT COPIES	
Submitted by: <i>Jimmy L. Funke</i> Jimmy L. Funke	Attorney Docket No. H-195546
Registration No. 34,166	Serial No. 08/566,029
Applicant Cashler	
Filing Date 12/1/95	Group Art Unit 2304



U.S. PATENT DOCUMENTS						
Exam. Init.	Document Number	Date	Name	Class	Subclass	Filing Date (if approp.)

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FOREIGN PATENT DOCUMENTS							
Exam. Init.	Document Number	Date	Country	Class	Subclass	Translation	
						Yes	No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)	
<i>TN</i>	Research Disclosure - January 1994 #357 - "Method for Sensing Occupant Mass and Position." Disclosed Anonymously

Examiner <i>Jan Nyuya</i>	Date Considered <i>09/04/1997</i>
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\*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-FB-A820 (also PTO-1449) Patent & Trademark Office - U.S. Department of Commerce

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231 on:	Date <i>June 23, 1997</i>
	Signature <i>Carole J. Murdock</i>
	Name <u>Carole J. Murdock</u>

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June 23, 1997  
Carole J. Murdock  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Robert L. Cashler

Group Art Unit 2304

Method of Inhibiting or Allowing  
Air Bag Deployment

Examiner: Tan Nguyen

U. S. Serial No. 08/566,029

Filed: December 1, 1995

REQUEST/PETITION ACCOMPANYING  
INFORMATION DISCLOSURE STATEMENT

Applicant(s) hereby request the Examiner to consider the record of the reference(s) and/or information on the attached PTO 1449.

CHECK ONE: (A, B OR C)

- A. This statement is submitted within 1) three months after the filing date (even if after the first action); or 2) to the best of my knowledge, before the mailing date of certification is required.
- B. This statement is submitted after the period specified in Paragraph A, but before Final Office Action or Notice of Allowance.

CHECK ONE: (1, 2, OR 3)

- 1. I certify that each item of information contained in the attached material was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement; or

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U. S. Serial No. 08/566,029-- 2

2. I certify that no item of information contained in the attached material was cited in a communication from a foreign patent office in a communication from a foreign patent office in a counterpart foreign application, or to the knowledge of the person signing the certification after making reasonable inquiry, was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of this statement; or
3. Charge a petition fee of \$230 to Delco Electronics Corporation Deposit Account No. 04-0549. Two additional copies of this letter are enclosed.
- C. This statement is submitted after a Final Office Action or Notice of Allowance, but before payment of the issue fee. Charge a petition fee of \$130 to Delco Electronics Corporation Deposit Account No. 04-0549. Two additional copies of this letter are enclosed.

CHECK ONE (1 OR 2)

1. I certify that each item of information contained in the attached material was cited in a communication from a foreign patent office in a counterpart foreign patent application not more than three months prior to the filing of this statement; or
2. I certify that no item of information contained in the attached material was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the person signing the certification after making reasonable inquiry, was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of this statement.

Respectfully submitted,

  
Jimmy L. Funke  
Patent Attorney  
Registration No. 34,166  
Telephone: 765/451-3481





airbag deployment based on sensed force and force distribution comprising the steps of:

measuring the force detected by each sensor;

calculating the total force of the sensor array;

allowing deployment if the total force is above a [first] total threshold force [and inhibiting deployment if the total force is below a second threshold];

defining a plurality of seat areas [each having a group of sensors] , at least one sensor located in each seat area;

determining the existence of a local pressure area when the calculated total force is concentrated in [a] one of said seat [area] areas;

[for each group] calculating [the group] a local force as the sum of [sensor] forces sensed by each sensor located in the seat area in which the total force is concentrated; and

[for a group in a local pressure area,] allowing deployment if the [group] local force is greater than a predefined seat area threshold force [for that group;]

[determining a fuzzy value for the array; and]

[allowing deployment if the fuzzy value exceeds a threshold].

2. (amended) The [invention] method of airbag control as defined in claim 1 including:

determining a pattern of sensor loading;

determining from the pattern of sensor loading whether an infant seat is [present] on the passenger seat;

then determining from the total force and force distribution whether the infant seat is facing forward or rearward;

allowing deployment for a forward facing seat; and

inhibiting deployment for a rearward facing seat.

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3. (amended) The [invention] method of airbag control as defined in claim 1 including:

determining a pattern of sensor loading;

prior to the step of allowing deployment if the total force is above a [first] total threshold force, determining from the pattern of sensor loading whether an infant seat is [present] on the seat;

then determining from the total force and force distribution whether the infant seat is facing forward or rearward;

allowing deployment for a forward facing seat; and  
inhibiting deployment for a rearward facing seat.

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4. (amended) The [invention] method of airbag control as defined in claim 2 wherein the step of determining a pattern of sensor loading comprises detecting which sensors are below a first load threshold and which sensors are above a second load threshold.

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5. (amended) The [invention] method of airbag control as defined in claim 2 wherein the step of determining from the pattern of loaded sensors whether an infant seat is present comprises:

establishing a table of loaded and unloaded sensor patterns which result from the configuration of the bottom of an infant seat; and

deciding that an infant seat is present when the pattern of sensor loading matches one of the table patterns.

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6. (amended) The [invention] method of airbag control as defined in claim 2 wherein the step of determining whether the infant seat is facing forward or rearward comprises:

deciding that the seat is facing forward when

1) the total force is greater than a first value, or

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2) sensors in the front of the seat are loaded and the total force is greater than a second value; and

deciding that the seat is facing rearward when both the conditions 1) and 2) are not true.

7. (amended) The [invention] method of airbag control as defined in claim 1 wherein the defined seat areas [are overlapping] overlap so that some sensors are included in more than one [group] seat area, the [groups] seat areas including a front area [group], a rear area [group], a right area [group] and a left area [group].

8. (amended) The [invention] method of airbag control as defined in claim 1 wherein each [area] of said seat areas includes a secondary group of sensors peculiar to that seat area and the method includes:

calculating a modified local force for each secondary group located in a seat area in which the total force is concentrated; and

allowing deployment if the modified local force for [any secondary group] exceeds a threshold for that secondary group [and the secondary group is in a local pressure area].

9. (amended) The [invention] method of airbag control as defined in claim 8 wherein each secondary group of sensors comprises a pair and the step of calculating a modified local force comprises limiting the higher sensor force to a maximum delta above the lower sensor force and adding the higher sensor force, as limited, to the lower sensor force.

10. (amended) The [invention] method of airbag control as defined in claim 1 [wherein] including the steps of:

defining a center seat area [includes] including a [center] group of sensors located in the center of the passenger seat, [and the step of]

calculating a [group] local force for the center seat area [comprises summing] as the sum of the [measured] forces [of] sensed by the sensors in the center [group] seat area; and

allowing deployment if the local force for the center seat area is greater than a predefined center seat area threshold force.

11. (amended) [The invention as defined in claim 1 including the steps of:] A method of airbag control in a vehicle having an array of force sensors on the passenger seat coupled to a controller for determining whether to allow airbag deployment based on sensed force and force distribution comprising the steps of:

measuring the force sensed by each sensor;

calculating the total force of the sensor array;

allowing deployment if the total force is above a total threshold force;

[calculating] assigning a load rating [for] to each sensor [from the] based on its measured force, said load ratings being limited to maximum value;

summing the assigned load ratings for all the sensors to derive a total load rating; and

allowing deployment if the total load rating is above a [maximum value; and] predefined total load threshold, whereby deployment is allowed if the sensed forces are distributed over the passenger seat, even if the total force is less than the total threshold force

[inhibiting deployment if the total load rating is below a minimum value].

12. (amended) The [invention] method of airbag control as defined in claim 11 wherein the step of [calculating] assigning a load rating [for] to each sensor comprises[;]:  
establishing a base force; and  
assigning a load rating according to the measured force minus the base force [and limiting the load rating to a maximum value].

13. (amended) [The invention as defined in claim 1 including the steps of:] A method of airbag control in a vehicle having an array of force sensors on the passenger seat coupled to a controller for determining whether to allow airbag deployment based on sensed force and force distribution comprising the steps of:

measuring the force sensed by each sensor;  
calculating the total force of the sensor array;  
allowing deployment if the total force is above a total threshold force; and

[calculating a total load rating for the sensor array;]  
if the total force is not above the total threshold force, determining a fuzzy total force contribution value based on the calculated total force;

defining a plurality of seat areas, at least one sensor located in each seat area, calculating a local force for [a plurality of groups of sensors in local areas of the] each seat area as the sum of forces sensed by each sensor located in that seat area, and determining a fuzzy local force contribution value based on each of the calculated local forces; and

[wherein the step of determining a fuzzy value includes assigning a contribution amount to each of the total force, the total load, and each group as a function of the respective forces and load rating, and] summing the fuzzy total force and fuzzy local force contribution [amounts] values, and allowing

deployment if the summed contribution values exceed a predefined fuzzy threshold.

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14. (amended) The [invention] method of airbag control as defined in claim ~~13~~<sup>17</sup> wherein the [step] steps of [assigning a] determining the fuzzy total and local force contribution [amount to the total force] values comprises:

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setting a minimum and maximum force threshold for each total and local force; and

subtracting the minimum force [threshold] thresholds from the respective total and local [force] forces and limiting [the] each difference to the respective maximum force threshold, [wherein the limited difference is the contribution amount]; and

determining the fuzzy total and local force contribution values based on the respective limited differences.

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16. (amended) The [invention] method of airbag control as defined in claim ~~13~~<sup>17</sup> wherein

[the groups include pairs] a pair of sensors are located in each seat area, and wherein:

[a pair] the step of calculating the local force for each [pair is calculated by] seat area comprises the steps of:

limiting the higher force of the [two] respective pair of sensors to a set amount greater than the lower force of the respective pair of sensors, and

summing the lower force and the higher force, as limited, to derive [a pair] the local force;

and the step of [assigning] determining a fuzzy local force contribution amount [to the pair force] comprises the steps of:

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setting a maximum pair force threshold, and

setting the [pair force] fuzzy local force contribution amount equal to the [pair] local force limited to the maximum pair force threshold.

<sup>13</sup>  
~~20~~. (amended) The [invention] method of airbag control as defined in claim [18] 11 further including the steps of:

defining a plurality of seat areas [each having a group of sensors] , at least one sensor located in each seat area;

determining the existence of a local pressure area when the calculated total force is concentrated in [a] one of said seat [area] areas;

[for each group] calculating [the group] a local force as the sum of [sensor] forces sensed by each sensor located in the seat area in which the total force is concentrated; and

[for a group in a local pressure area,] allowing deployment if the [group] local force is greater than a predefined seat area threshold force [for that group].

<sup>14</sup>  
~~21~~. (amended) The [invention] method of airbag control as defined in claim ~~20~~<sup>13</sup> further including the steps of:

determining [a] individual fuzzy [value for the array] values based on the total force, the [group] local forces for each seat area, and total load [ratings] rating; [and]

summing said fuzzy values; and

allowing deployment if the summed fuzzy [value exceeds] values exceed a threshold.

<sup>15</sup>  
~~23~~. (new) A method of airbag control as set forth in Claim 11, including the steps of:

determining a fuzzy total force contribution value based on the calculated total force;

determining a fuzzy total loading contribution value based on the total load rating; and

summing the fuzzy total force and fuzzy total loading contribution values, and allowing deployment if the summed contribution values exceed a predefined fuzzy threshold.

<sup>16</sup>  
~~24~~ (new) The method of airbag control as defined in claim <sup>15</sup>~~23~~ wherein the steps of determining the fuzzy total force and total loading contribution values comprises:

setting minimum and maximum thresholds for the total force and total load rating; and

subtracting the minimum thresholds from the respective total force and total load rating, and limiting each difference to the respective maximum threshold; and

determining the fuzzy total and total loading contribution values based on the respective limited differences.

REMARKS

In the subject Office Action, the examiner rejected Claim 18 under 35 USC 102(e) in view of Schousek `327, and rejected Claims 1-7 and 10-22 under 35 USC 103(a) over Schousek in view of Barrus `301. Claims 8-9 were indicated to be allowable but were objected to as depending from a rejected base claim. Applicant requests reconsideration of his application in view of this response which cancels Claims 15, 17-19 and 22, amends Claims 1-14, 16 and 20-21, adds new Claims 23-24, and provides argument in support of the allowability of the pending claims. For the convenience of the examiner, Applicant has set forth in an attachment to this amendment Claims 1-14, 16, 20-21 and 23-24, as amended herein.

Allowable Subject Matter

Applicant gratefully acknowledges the indication of allowability in respect to Claims 8-9, but defers the re-writing of such claims in independent format until this

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amendment is considered by the examiner. Applicant believes, as explained below, that base Claim 1, particularly as amended herein, is allowable over the prior art of record, obviating the need to re-write Claims 8-9 in independent format. The above amendments to Claims 8-9 are intended to improve clarity and consistency of terminology.

Summary of Claims

Claim 1 has been amended to recite a method of airbag control in which deployment is allowed based on total force above a threshold or a local concentrated force above a threshold.

Claims 2-10 depend directly or indirectly from independent Claim 1.

Claim 11 has been re-written in independent format, and recites a method of airbag control in which deployment is allowed based on total force above a threshold or a total load rating above a threshold.

Claim 12 depends directly from re-written independent Claim 11.

Claim 13 has been re-written in independent format, and recites a method of airbag control in which deployment is allowed based on fuzzy total and local force contribution values above a predefined fuzzy threshold.

Claim 14 depends directly from re-written independent Claim 13.

Claim 15 has been canceled.

Claim 16 depends directly from re-written independent Claim 13.

Claims 17-19 have been canceled.

Claim 20-21 depend directly or indirectly from re-written independent Claim 11.

Claim 22 has been canceled.

Claims 23-24 depend directly or indirectly from re-written independent Claim 11.

A

The Rejection Under 35 USC 102(e)

The rejection of Claim 18 under 35 USC 102(e) is rendered moot by the cancellation of such claim. Accordingly, Applicant respectfully requests that the rejection be withdrawn.

The Rejection Under 35 USC 103(a)

The rejection of Claims 1-7 and 10-22 under 35 USC 103(a) is respectfully traversed in view of the amendments made herein and the following argumentation. It is thus respectfully submitted that the currently pending Claims 1-14, 16, 20-21 and 23-24 patently define over Schousek and Barrus, taken individually, or in combination.

Schousek is similar to Applicant's disclosed control method in that (1) it is directed to a method of determining whether to allow deployment of airbags based upon the sensed force on a passenger seat, (2) deployment is allowed if a total of the sensed forces exceeds a threshold, and (3) the total force is used to discriminate between adults and children. However, that is where the similarity ends. The additional aspects of Schousek -- such as the discrimination between front and rear facing infant seats (or out of position occupant) based on a calculated center of weight relative to a reference line -- are irrelevant to, or teach away from, Applicant's claimed invention. Thus, Schousek clearly does **not**, as stated by examiner, disclose the method of determining a local pressure area when the total force is concentrated in a seat area and calculating a local force as the sum of forces sensed by sensors located in that seat area; the portions of Schousek referenced by the examiner teach only that center of weight calculations should be used to distinguish between front and rear facing infant seats.

Barrus is directed to a seat sensor array and processing method in which sensed force patterns are compared with predetermined patterns to identify known occupant positions

for the purpose of display. Alternatively, it is suggested that a neural network could be trained through the use of example data to recognize positions corresponding to a sensed force pattern.

In view of the above, a supposed combination of the teachings of Schousek and Barrus -- if in fact such references are properly combinable under 35 USC 103(a) -- might result in an airbag deployment method in which the measured forces are compared to predetermined force patterns for the recognition of occupant position, or alternatively, in which a neural network is used to recognize occupant positions corresponding to a given patterns of detected force. However, Applicant's claimed invention is not obviated by such a supposed combination, as explained below.

Applicant's invention is particularly directed to an airbag deployment method in which various techniques are used to determine if an occupant is suitably positioned on a passenger seat. These techniques do not utilize center of weight calculations as taught by Schousek, nor do they utilize neural networks as taught by Barrus. Although Applicant has disclosed the use of pattern recognition to identify the presence of an infant seat, pattern recognition is not used to identify the position of an occupant, as taught by Barrus.

In general, Applicant's claims set forth a method of allowing deployment even though the total force sensed by the seat sensors is less than a total threshold force. This situation arises primarily when a child is sitting on the seat. As set forth above in the claim summary, the subject application now contains three independent claims: 1, 11 and 13. Such claims, and their dependent claims are discussed briefly below.

Claim 1, as amended herein, recites:

1. (amended) A method of airbag control in a vehicle having an array of force sensors on the passenger seat coupled to a controller for determining whether to allow airbag deployment based on sensed force and force distribution comprising the steps of:

measuring the force detected by each sensor;  
calculating the total force of the sensor array;

allowing deployment if the total force is above a total threshold force;

*defining a plurality of seat areas, at least one sensor located in each seat area;*

*determining the existence of a local pressure area when the calculated total force is concentrated in one of said seat areas;*

*calculating a local force as the sum of forces sensed by each sensor located in the seat area in which the total force is concentrated; and*

*allowing deployment if the local force is greater than a seat area threshold force.*

As indicated above in italics, Applicant's Claim 1 defines a method wherein the controller determines the existence of a local pressure area when the total force is concentrated in one of the predefined seat areas, and in such event, sums the forces of the sensors located in that seat area for comparison with a seat area threshold force to determine if deployment should be allowed. There is no teaching of this sort in either Schousek or Barrus. According to Schousek, the controller computes the center of weight from all of the sensors, and compares it with a reference line;

according to Barrus, the controller would look for a recognizable occupant force pattern from all of the sensors. Since neither Schousek nor Barrus contain a teaching that suggests the claimed invention, no combination of Schousek and Barrus can be said to obviate the claimed invention. Accordingly, the rejection of Claim 1 and its dependent Claims 2-7 and 10 should be withdrawn.

Further to Claim 1, dependent Claims 2-6 recite, in various levels of detail, the recognition of an infant seat based on the pattern of sensor loading. As set forth above, Applicant's position is that Barrus does not obviate this functionality because Barrus simply teaches the use of pattern recognition per se, and does not teach the use of pattern recognition to identify the presence of an infant seat, as claimed by Applicant. Dependent Claim 7 requires that the defined seat areas overlap so that some sensors are included in more than one seat area. Dependent Claim 10 provides that deployment is also allowed if the sensors located in a center seat area of the passenger seat indicate a center seat area force in excess of a center seat area threshold force. Although these claimed features provide additional bases of patentability, Applicant reiterates that Claims 2-7 and 10 depend from Claim 1, and are therefore additionally patentable over Schousek and Barrus for the reasons given above in respect to Claim 1.

Claim 11, as amended herein, recites:

11. (amended) A method of airbag control in a vehicle having an array of force sensors on the passenger seat coupled to a controller for determining whether to allow airbag deployment based on sensed force and force distribution comprising the steps of:

measuring the force sensed by each sensor;

calculating the total force of the sensor array;

allowing deployment if the total force is above a total threshold force;

*assigning a load rating to each sensor based on its measured force, said load ratings being limited to maximum value;*

*summing the assigned load ratings for all the sensors to derive a total load rating; and*

*allowing deployment if the total load rating is above a predefined total load threshold, whereby deployment is allowed if the sensed forces are distributed over the passenger seat, even if the total force is less than the total threshold force.*

As indicated above in italics, Applicant's Claim 11 defines a method wherein the controller assigns a load rating to each sensor, sums the load ratings and compares the total load rating to a total load threshold to determine whether deployment should be allowed. As claimed, the assigned load ratings are limited to a maximum value. This limits the contribution of any individual sensor to the total load rating so that the total load rating provides an indication as to whether the sensed forces are distributed over the passenger seat, as noted in the claim. Again, there is no teaching of this sort in either Schousek or Barrus. According to Schousek, the controller computes only total force and center of weight, as described above. According to Barrus, the controller simply looks for recognizable occupant force patterns from all of the sensors. Since neither Schousek nor Barrus contain a teaching that suggests the claimed load rating method, no combination of Schousek and Barrus can be

said to obviate the claimed method. Accordingly, the rejection of Claim 11 and its dependent Claims 12, 20-21 and 23-24 should be withdrawn.

Claim 12 recites additional detail as to the assignment of load ratings. Claim 20 additionally recites the method of allowing deployment based on the detection of a concentrated local force in excess of a threshold, as discussed above in respect to independent Claim 1. Claim 21 additionally recites a fuzzy contribution method, as applied to the method of Claim 20, and Claims 23-24 recite fuzzy contribution methods, as applied to the method of Claim 11. The uniqueness of the claimed fuzzy contribution methods per se is discussed in detail below in reference to independent Claim 13.

Claim 13, as amended herein, recites:

13. (amended) A method of airbag control in a vehicle having an array of force sensors on the passenger seat coupled to a controller for determining whether to allow airbag deployment based on sensed force and force distribution comprising the steps of:

    measuring the force sensed by each sensor;  
    calculating the total force of the sensor array;

    allowing deployment if the total force is above a total threshold force; and

*if the total force is not above the total threshold force, determining a fuzzy total force contribution value based on the calculated total force;*

*defining a plurality of seat areas, at least one sensor located in each seat area, calculating a local force for each seat area as the sum of forces*

*sensed by each sensor located in that seat area, and determining a fuzzy local force contribution value based on each of the calculated local forces; and summing the fuzzy total force and fuzzy local force contribution values, and allowing deployment if the summed contribution values exceed a predefined fuzzy threshold.*

As indicated above in italics, Applicant's Claim 13 sets forth a method wherein the controller defines a plurality of seat areas, calculates a local force for each seat area as the sum of forces sensed by each sensor located in that seat area, determines and sums fuzzy contribution values for the total force and for each of the local seat area forces, and allows deployment if the summed fuzzy contribution values exceed a fuzzy threshold. This technique allows deployment when the various occupant force measurements fail to exceed their individual thresholds. If the various force measurements come close to their respective thresholds, the summed fuzzy contribution values will, in turn, exceed the fuzzy threshold, allowing deployment. Claims 14 and 16 provide additional detail as to how the fuzzy local force contribution values are determined. Once again, there is no teaching of this sort in either Schousek or Barrus. According to Schousek, the controller only computes a total force measure and compares it to a threshold; if the threshold is not exceeded, deployment is not allowed, and there is no measurement of how close the sensed force came to the threshold. And of course, Barrus is not even concerned with threshold achievement.

The examiner's emphasis on Barrus' neural network is misplaced because it assumes that a neural network is equivalent to fuzzy logic; this is simply untrue. If one were



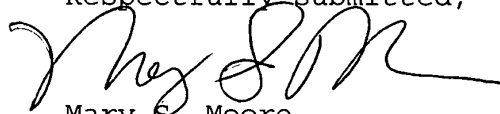
USSN 08/566,029--18

motivated to apply Barrus' neural network teachings to Schousek, the result would not be Applicant's claimed fuzzy contribution values. Barrus' neural network is used for pattern recognition, not for determining how close various diverse measurements of occupancy came to their respective thresholds. Since neither Schousek nor Barrus contain a teaching that suggests the claimed fuzzy contribution method, no combination of Schousek and Barrus can be said to obviate the claimed invention. Accordingly, the rejection of Claim 13 and its dependent Claims 14 and 16 should be withdrawn.

Summary

For the above reasons, Applicant submits that his Claims 1-14, 16, 20-21 and 23-24 are now in condition for allowance, and therefore respectfully requests such allowance.

Respectfully submitted,



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CLAIMS OF USSN 08/566,029 AS AMENDED IN THIS PAPER NO. 3

1. (amended) A method of airbag control in a vehicle having an array of force sensors on the passenger seat coupled to a controller for determining whether to allow airbag deployment based on sensed force and force distribution comprising the steps of:

- measuring the force detected by each sensor;
- calculating the total force of the sensor array;
- allowing deployment if the total force is above a total threshold force;
- defining a plurality of seat areas, at least one sensor located in each seat area;
- determining the existence of a local pressure area when the calculated total force is concentrated in one of said seat areas;
- calculating a local force as the sum of forces sensed by each sensor located in the seat area in which the total force is concentrated; and
- allowing deployment if the local force is greater than a seat area threshold force.

2. (amended) The method of airbag control as defined in claim 1 including:

- determining a pattern of sensor loading;
- determining from the pattern of sensor loading whether an infant seat is on the passenger seat;
- then determining from the total force and force distribution whether the infant seat is facing forward or rearward;
- allowing deployment for a forward facing seat; and
- inhibiting deployment for a rearward facing seat.

3. (amended) The method of airbag control as defined in claim 1 including:

*COPY*

determining a pattern of sensor loading;  
prior to the step of allowing deployment if the total force is above a total threshold force, determining from the pattern of sensor loading whether an infant seat is on the seat;

then determining from the total force and force distribution whether the infant seat is facing forward or rearward;

allowing deployment for a forward facing seat; and  
inhibiting deployment for a rearward facing seat.

4. (amended) The method of airbag control as defined in claim 2 wherein the step of determining a pattern of sensor loading comprises detecting which sensors are below a first load threshold and which sensors are above a second load threshold.

5. (amended) The method of airbag control as defined in claim 2 wherein the step of determining from the pattern of loaded sensors whether an infant seat is present comprises:

establishing a table of loaded and unloaded sensor patterns which result from the configuration of the bottom of an infant seat; and

deciding that an infant seat is present when the pattern of sensor loading matches one of the table patterns.

6. (amended) The method of airbag control as defined in claim 2 wherein the step of determining whether the infant seat is facing forward or rearward comprises:

deciding that the seat is facing forward when

- 1) the total force is greater than a first value, or
- 2) sensors in the front of the seat are loaded and the

total force is greater than a second value; and

deciding that the seat is facing rearward when both the conditions 1) and 2) are not true.

7. (amended) The method of airbag control as defined in claim 1 wherein the defined seat areas overlap so that some sensors are included in more than one seat area, the seat areas including a front area, a rear area, a right area and a left area.

8. (amended) The method of airbag control as defined in claim 1 wherein each of said seat areas includes a secondary group of sensors peculiar to that seat area and the method includes:

calculating a modified local force for each secondary group located in a seat area in which the total force is concentrated; and

allowing deployment if the modified local force for exceeds a threshold for that secondary group.

9. (amended) The method of airbag control as defined in claim 8 wherein each secondary group of sensors comprises a pair and the step of calculating a modified local force comprises limiting the higher sensor force to a maximum delta above the lower sensor force and adding the higher sensor force, as limited, to the lower sensor force.

10. (amended) The method of airbag control as defined in claim 1 including the steps of:

defining a center seat area including a group of sensors located in the center of the passenger seat,

calculating a local force for the center seat area as the sum of the [measured] forces sensed by the sensors in the center seat area; and

allowing deployment if the local force for the center seat area is greater than a predefined center seat area threshold force.

11. (amended) A method of airbag control in a vehicle having an array of force sensors on the passenger seat coupled

to a controller for determining whether to allow airbag deployment based on sensed force and force distribution comprising the steps of:

- measuring the force sensed by each sensor;
- calculating the total force of the sensor array;
- allowing deployment if the total force is above a total threshold force;

- assigning a load rating to each sensor based on its measured force, said load ratings being limited to maximum value;

- summing the assigned load ratings for all the sensors to derive a total load rating; and

- allowing deployment if the total load rating is above a predefined total load threshold, whereby deployment is allowed if the sensed forces are distributed over the passenger seat, even if the total force is less than the total threshold force.

12. (amended) The method of airbag control as defined in claim 11 wherein the step of assigning a load rating to each sensor comprises,

- establishing a base force; and

- assigning a load rating according to the measured force minus the base force.

13. (amended) A method of airbag control in a vehicle having an array of force sensors on the passenger seat coupled to a controller for determining whether to allow airbag deployment based on sensed force and force distribution comprising the steps of:

- measuring the force sensed by each sensor;

- calculating the total force of the sensor array;

- allowing deployment if the total force is above a total threshold force; and

if the total force is not above the total threshold force, determining a fuzzy total force contribution value based on the calculated total force;

defining a plurality of seat areas, at least one sensor located in each seat area, calculating a local force for each seat area as the sum of forces sensed by each sensor located in that seat area, and determining a fuzzy local force contribution value based on each of the calculated local forces; and

summing the fuzzy total force and fuzzy local force contribution values, and allowing deployment if the summed contribution values exceed a predefined fuzzy threshold.

14. (amended) The method of airbag control as defined in claim 13 wherein the steps of determining the fuzzy total and local force contribution values comprises:

setting a minimum and maximum force threshold for each total and local force; and

subtracting the minimum force thresholds from the respective total and local forces and limiting each difference to the respective maximum force threshold,; and

determining the fuzzy total and local force contribution values based on the respective limited differences.

16. (amended) The method of airbag control as defined in claim 13 wherein a pair of sensors are located in each seat area, and wherein:

the step of calculating the local force for each seat area comprises the steps of:

limiting the higher force of the pair of sensors to a set amount greater than the lower force of the respective pair of sensors, and

summing the lower force and the higher force, as limited, to derive the local force;

and the step of determining a fuzzy local force contribution amount comprises the steps of:

setting a maximum pair force threshold, and  
setting the fuzzy local force contribution amount  
equal to the local force limited to the maximum pair force  
threshold.

20. (amended) The method of airbag control as defined in  
claim 11 further including the steps of:

defining a plurality of seat areas, at least one sensor  
located in each seat area;

determining the existence of a local pressure area when  
the calculated total force is concentrated in one of said seat  
areas;

calculating a local force as the sum of forces sensed by  
each sensor located in the seat area in which the total force  
is concentrated; and

allowing deployment if the local force is greater than a  
predefined seat area threshold force.

21. (amended) The method of airbag control as defined in  
claim 20 further including the steps of:

determining individual fuzzy values based on the total  
force, the local forces for each seat area, and total load  
rating;

summing said fuzzy values; and

allowing deployment if the summed fuzzy values exceed a  
threshold.

23. (new) A method of airbag control as set forth in  
Claim 11, including the steps of:

determining a fuzzy total force contribution value based  
on the calculated total force;

determining a fuzzy total loading contribution value  
based on the total load rating; and

summing the fuzzy total force and fuzzy total loading  
contribution values, and allowing deployment if the summed  
contribution values exceed a predefined fuzzy threshold.

24. (new) The method of airbag control as defined in claim 23 wherein the steps of determining the fuzzy total force and total loading contribution values comprises:

setting minimum and maximum thresholds for the total force and total load rating; and

subtracting the minimum thresholds from the respective total force and total load rating, and limiting each difference to the respective maximum threshold; and

determining the fuzzy total and total loading contribution values based on the respective limited differences.



08/566,029



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

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Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/566,029 12/01/95 CASHLER

R H-195546

EXAMINER

B3M1/0411

ATTORNEY PAPER NUMBER

MARK A NAVARRE  
DELCO ELECTRONICS CORPORATION  
ERC BUILDING MAIL STOP D 32  
P O BOX 9005  
KOKOMO IN 46904

2304

2

DATE MAILED: 04/11/97

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

- This application has been examined  Responsive to communication filed on \_\_\_\_\_  This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

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

- Notice of References Cited by Examiner, PTO-892.
- Notice of Draftsman's Patent Drawing Review, PTO-948.
- Notice of Art Cited by Applicant, PTO-1449.
- Notice of Informal Patent Application, PTO-152.
- Information on How to Effect Drawing Changes, PTO-1474.
- \_\_\_\_\_

Part II SUMMARY OF ACTION

1.  Claims 1-22 are pending in the application.

Of the above, claims \_\_\_\_\_ are withdrawn from consideration.

- Claims \_\_\_\_\_ have been cancelled.
- Claims \_\_\_\_\_ are allowed.
- Claims 1-7, 10-22 are rejected.
- Claims 8-9 are objected to.
- Claims \_\_\_\_\_ are subject to restriction or election requirement.
- This application has been filed with Informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
- Formal drawings are required in response to this Office action.
- The corrected or substitute drawings have been received on \_\_\_\_\_ Under 37 C.F.R. 1.84 these drawings are  acceptable;  not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
- The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_ has (have) been  approved by the examiner;  disapproved by the examiner (see explanation).
- The proposed drawing correction, filed \_\_\_\_\_, has been  approved;  disapproved (see explanation).
- Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has  been received  not been received  been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
- Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
- Other

EXAMINER'S ACTION

**Part III DETAILED ACTION**

*Notice to Applicant(s)*

1. This application has been examined. Claims 1-22 are pending.
2. The drawings are approved by the draftsman and examiner.

*Claim Rejections - 35 USC § 102*

3. 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 --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claim 18 is rejected under 35 U.S.C. § 102(e) as being anticipated by Schousek (5,474,327).

Schousek discloses the invention as claimed (see at least the abstract) including the steps of measuring the force detected by each of sensor (see figure 1 and figure 5, step 64), calculating the total force of the sensor array (see figure 5A, step 68),

calculating a load rating for each sensor from measure force and summing the load ratings for all the sensor to derive total load rating, and allowing deployment based on a high value of the total force or of the total load rating, and inhibiting deployment based on a low value of the total force or of the total load rating (see figure 5A, column 3, line 64 to column 4, line 21).

Therefore, all of the limitations of claim 1 are met by Schousek.

***Claim Rejections - 35 USC § 103***

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

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

6. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schousek (5,474,327) in view of Barrus (5,570,301).

a. With respect to claims 1, 19, and 21, Schousek discloses a method of airbag control in a vehicle having an array of force sensors on the passenger seat

coupled to controller for determining permission for airbag deployment based on sensed force and force distribution comprising the steps of measuring the force detected by each sensor calculating the total force of the sensor array, allowing deployment if the total force is above a first threshold and inhibiting deployment if the total force is below a second threshold; defining seat areas each having a group of sensors (see figure 5A and the related text). Schousek also discloses that the method includes the steps of determining a local pressure area when the total force is concentrated in a seat area and calculating the group force as the sum of sensor forces, and allowing deployment if the group force is greater than a threshold for that group (see figure 5A, steps 70, 82, 64, 86 and the related text).

Schousek does not disclose that the method includes a step of determining a fuzzy value for the array and allowing deployment if the fuzzy value exceeds a threshold. However, Barrus suggests a system for unencumbered measurement and reporting of body structure which using a trained neural network (fuzzy logic) for estimating positional attitude by comparing the outputs of the array sensors (see figures 5 and 6) to pre-determined outputs of the sensors corresponding to a plurality of pre-determined postures (see figures 7A to 9; column 3, lines 29-36; and column 6, lines 50-66). The suggestion of the Barrus patent in figures 5-9 and columns 3 and 6 would have motivated one of ordinary skill in the art to combine the teaching of Barrus with

the system of Schousek in order to provide an accurate determination of the condition of the occupancy seat in a vehicle, thereby improve the safeness of the airbag deployment.

Thus, because of the motivation set forth above, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Barrus and Schousek.

b. With respect to claims 2-4, Schousek discloses the steps of determining a pattern of sensor loading, determining from the pattern of sensor loading whether an infant seat is present; then determining from the total force and force distribution whether the infant seat is facing forward or rearward, allowing deployment for a forward facing seat, and inhibiting deployment for a rearward facing seat (see figure 5A-5B and the related text).

c. With respect to claim 5, Schousek does not explicitly disclose that the step of determining from the pattern of loaded sensors whether an infant seat is present comprises the steps of establishing a table of loaded and unloaded sensor patterns which result from the configuration of the bottom of an infant seat, and deciding that an infant seat is present when the pattern of sensor loading matches one of the table patterns. However, such features are suggests in the Barrus teaching through the figure 8 and the related text. It would have been obvious to incorporate the teaching of the Barrus into

the system of Schousek because such combination would provide the system with the enhanced capability of determining an accurate the present of an infant seat in the passenger seat, thereby deciding whether to activate of deactivate the airbag.

d. With respect to claim 6, Schousek also discloses the steps of determining whether the infant seat is facing forward or rearward (see figure 5A, steps 82, 84 and 86).

e. With respect to claim 7, Schousek discloses that wherein the areas are overlapping so that some sensors are included in more than one group, the groups including a front area group, a rear area group, a right area group and a left area group (see figure 2 and column 3, line 64 to column 4, line 21).

f. With respect to claim 10, Schousek discloses that wherein a center seat area includes a center group and the step of calculating a group force comprises summing the measured forces of the sensors in the center group (see at least figure 5A).

g. With respect to claims 11-17 and 22, the limitations of these claims have been noted in the rejection above. They are therefore considered rejected as set forth above.

7. Claims 8 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations

of the base claim and any intervening claims.

a. After carefully reviewing the application in light of the search of all the possible areas relevant to the present application, a set of related prior art references has been found, but those prior art references are not deemed strong to make claims 8 and 9 unpatentable.

b. Although the prior art disclose several claimed limitations, none of the references teach a method of airbag control in a vehicle having an array of force sensors on the passenger seat coupled with a controller for determining permission for airbag deployment based on the sensed force and force distribution which includes, in each area a secondary group of sensors peculiar to that area and the method includes: calculating a modified force for each secondary group; and allowing deployment if the modified force for any secondary group exceeds a threshold for that secondary group and the secondary group is in a local pressure area (claim 8). Furthermore, none of the references teach that wherein each secondary group of sensors comprises a pair and the step of calculating a modified force comprises limiting the higher sensor force to a maximum delta above the lower sensor force and adding the higher sensor force, as limited, to the lower sensor force (claim 9).

*Conclusion*

8. Claims 1-7 and 10-22 are rejected. Claims 8 and 9 are objected.
9. The following references are cited as being of general interest: Kikuo et al. (5,010,774), Vollmer (5,61,820), Blackburn et al. (5,232,243), Araki et al. (5,384,716), Mazur et al. (5,454,591), Blackburn et al. (5,491,311), Meister et al. (5,570,903), Blackburn et al. (5,605,348), and Zeidler et al. (5,612,876).
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Tan Nguyen, whose telephone number is (703) 305-9755. The examiner can normally be reached on Monday-Thursday from 7:30 AM-5:00 PM. The examiner can also be reached on alternate Fridays.
- If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin J. Teska, can be reached on (703) 305-9704. The fax phone number for this Group is (703) 308-5357.
- Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3800.

  
**TAN Q. NGUYEN  
PATENT EXAMINER  
GROUP 2300**

March 27, 1997



FORM PTO-892 (REV. 2-82)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	SERIAL NO. 08/566,029	GROUP/UNIT 2304	ATTACHMENT TO PAPER NUMBER 2
NOTICE OF REFERENCES CITED		APPLICANT(S) CASTLER		

U.S. PATENT DOCUMENTS

*	DOCUMENT NO.	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
A	5010774	07/1991	KIKO ET AL.	73	862042	
B	5161820	11/1992	VOLLNER	280	7301	
C	5232243	08/1993	BLACKBURN ET AL.	280	732	
D	5384713	01/1995	ARAKI ET AL.	364	557	
E	5454591	10/1995	MAZUR ET AL.	280	735	
F	5474327	12/1995	SCHOUSEK	180	268	01/1995
G	5494311	02/1996	BLACKBURN ET AL.	280	735	04/1991
H	5570301	10/1996	BARRUS	364	559	07/1994
I	5570903	11/1996	MEISTER ET AL.	280	735	02/1995
J	5605348	02/1997	BLACKBURN ET AL.	280	735	11/1993
K	5612876	03/1997	ZETDLER ET AL.	364	424.055	03/1995

FOREIGN PATENT DOCUMENTS

*	DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB-CLASS	PERTINENT SHTS. DWG.	PP. SPEC.
L								
M								
N								
O								
P								
Q								

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

R	
S	
T	
U	

EXAMINER Jan Nguyen	DATE 03/27/1997
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\* A copy of this reference is not being furnished with this office action.  
(See Manual of Patent Examining Procedure, section 707.05 (a).)



OMB NO. 0651-0011(12/31/86)

INFORMATION DISCLOSURE CITATION WITH DOCUMENT COPIES

Submitted by:

*Mark A. Navarre*

MARK A. NAVARRE  
Registration No. 29572

Atty. Docket No.  
H-195546

Serial No.  
08/566,029

Applicant ROBERT JOHN CASHLER

Filing Date  
12/01/95

Group Art Unit  
2304

U.S. PATENT DOCUMENTS

Exam. Init.	Document Number	Date	Name	Class	Subclass	Filing Date (if approp.)
TN	5,474,327	12/12/95	SCHOUSEK	180	268	01/1995

FOREIGN PATENT DOCUMENTS

Exam. Init.	Document Number	Date	Country	Class	Subclass	Translation	
						Yes	No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

Examiner

*Jan Nguyen*

Date Considered

*03/20/1997*

\*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-FB-A820 (also PTO-1449) Patent & Trademark Office - U.S. Dept. of Commerce

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

*December 1, 1995*  
Date  
*Janita C. Beall*  
Signature  
Janita C. Beall  
Name

NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW

PTO Draftpersons review all originally filed drawings regardless of whether they are designated as formal or informal. Additionally, patent Examiners will review the drawings for compliance with the regulations. Direct telephone inquiries concerning this review to the Drawing Review Branch, 703-305-8404.

The drawings filed (insert date) 12/1/95 are not objected to by the Draftsperson under 37 CFR 1.84 or 1.152. View and enlarged view not labeled separately or properly. Fig(s) \_\_\_\_\_

A. not objected to by the Draftsperson under 37 CFR 1.84 or 1.152 as indicated below. The Examiner will require submission of new, corrected drawings when necessary. Corrected drawings must be submitted according to the instructions on the back of this Notice. Sectional views. 37 CFR 1.84 (h) 3

B. not objected to by the Draftsperson under 37 CFR 1.84 or 1.152 as indicated below. The Examiner will require submission of new, corrected drawings when necessary. Corrected drawings must be submitted according to the instructions on the back of this Notice. Hatching not indicated for sectional portions of an object. Fig(s) \_\_\_\_\_

1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings:  
 Black ink. Color. \_\_\_\_\_  
 Not black solid lines. Fig(s) \_\_\_\_\_  
 Color drawings are not acceptable until petition is granted. Fig(s) \_\_\_\_\_

2. PHOTOGRAPHS. 37 CFR 1.84(b):  
 Photographs are not acceptable until petition is granted. Fig(s) \_\_\_\_\_  
 Photographs not properly mounted (must use brylston board or photographic double-weight paper). Fig(s) \_\_\_\_\_  
 Poor quality (half-tone). Fig(s) \_\_\_\_\_

3. GRAPHIC FORMS. 37 CFR 1.84 (d)  
 Chemical or mathematical formula not labeled as separate figure. Fig(s) \_\_\_\_\_  
 Group of waveforms not presented as a single figure, using common vertical axis with time extending along horizontal axis. Fig(s) \_\_\_\_\_  
 Individuals waveform not identified with a separate letter designation adjacent to the vertical axis. Fig(s) \_\_\_\_\_

4. TYPE OF PAPER. 37 CFR 1.84(c)  
 Paper not flexible, strong, white, smooth, nonshiny, and durable. Sheet(s) \_\_\_\_\_  
 Erasures, alterations, overwritings, interlineations, cracks, creases, and folds copy machine marks not accepted. Fig(s) \_\_\_\_\_  
 Mylar, velum paper is not acceptable (too thin). Fig(s) \_\_\_\_\_

5. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable sizes:  
 21.6 cm. by 35.6 cm. (8 1/2 by 14 inches)  
 21.6 cm. by 33.1 cm. (8 1/2 by 13 inches)  
 21.6 cm. by 27.9 cm. (8 1/2 by 11 inches)  
 21.0 cm. by 29.7 cm. (DIN size A4)  
 All drawing sheets not the same size. Sheet(s) \_\_\_\_\_  
 Drawing sheet not an acceptable size. Sheet(s) \_\_\_\_\_

6. MARGINS. 37 CFR 1.84(g): Acceptable margins:  
 Paper size  

21.6 cm. X 35.6 cm.	21.6 cm. X 33.1 cm.	21.6 cm. X 27.9 cm.	21.0 cm. X 29.7 cm.
(8 1/2 X 14 inches)	(8 1/2 X 13 inches)	(8 1/2 X 11 inches)	(DIN Size A4)
T .51 cm. (2")	2.5 cm. (1")	2.5 cm. (1")	2.5 cm.
L .64 cm. (1/4")	.64 cm. (1/4")	.64 cm. (1/4")	2.5 cm.
R .64 cm. (1/4")	.64 cm. (1/4")	.64 cm. (1/4")	1.5 cm.
B .64 cm. (1/4")	.64 cm. (1/4")	.64 cm. (1/4")	1.0 cm.

 Margins do not conform to chart above.  
 Sheet(s) \_\_\_\_\_  
 Top (T) \_\_\_\_\_ Left (L) \_\_\_\_\_ Right (R) \_\_\_\_\_ Bottom (B) \_\_\_\_\_

7. VIEWS. 37 CFR 1.84(h)  
 REMINDER: Specification may require revision to correspond to drawing changes.  
 All views not grouped together. Fig(s) \_\_\_\_\_  
 Views connected by projection lines or lead lines. Fig(s) \_\_\_\_\_  
 Partial views. 37 CFR 1.84(h) 2 \_\_\_\_\_

8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i)  
 Words do not appear on a horizontal, left-to-right fashion when page is either upright or turned so that the top becomes the right side, except for graphs. Fig(s) \_\_\_\_\_

9. SCALE. 37 CFR 1.84(k)  
 Scale not large enough to show mechanism with crowding when drawing is reduced in size to two-thirds in reproduction. Fig(s) \_\_\_\_\_  
 Indication such as "actual size" or scale 1/2" not permitted. Fig(s) \_\_\_\_\_

10. CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(l)  
 Lines, numbers & letters not uniformly thick and well defined, clean, durable, and black (except for color drawings). Fig(s) \_\_\_\_\_

11. SHADING. 37 CFR 1.84(m)  
 Solid black shading areas not permitted. Fig(s) \_\_\_\_\_  
 Shade lines, pale, rough and blurred. Fig(s) \_\_\_\_\_

12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR 1.84(p)  
 Numbers and reference characters not plain and legible. 37 CFR 1.84(p)(1) Fig(s) \_\_\_\_\_  
 Numbers and reference characters not oriented in same direction as the view. 37 CFR 1.84(p)(1) Fig(s) \_\_\_\_\_  
 English alphabet not used. 37 CFR 1.84(p)(2) Fig(s) \_\_\_\_\_  
 Numbers, letters, and reference characters do not measure at least .32 cm. (1/8 inch) in height. 37 CFR(p)(3) Fig(s) \_\_\_\_\_

13. LEAD LINES. 37 CFR 1.84(q)  
 Lead lines cross each other. Fig(s) \_\_\_\_\_  
 Lead lines missing. Fig(s) \_\_\_\_\_

14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(l)  
 Sheets not numbered consecutively, and in Arabic numerals, beginning with number 1. Sheet(s) \_\_\_\_\_

15. NUMBER OF VIEWS. 37 CFR 1.84(u)  
 Views not numbered consecutively, and in Arabic numerals, beginning with number 1. Fig(s) \_\_\_\_\_  
 View numbers not preceded by the abbreviation Fig. Fig(s) \_\_\_\_\_

16. CORRECTIONS. 37 CFR 1.84(w)  
 Corrections not made from prior PTO-948. Fig(s) \_\_\_\_\_

17. DESIGN DRAWING. 37 CFR 1.152  
 Surface shading shown not appropriate. Fig(s) \_\_\_\_\_  
 Solid black shading not used for color contrast. Fig(s) \_\_\_\_\_

COMMENTS:

ATTACHMENT TO PAPER NO. 2

REVIEWER: [Signature]

DATE: 2/22/96

PTO COPY

**REMINDER**

Drawing changes may also require changes in the specification, e.g., if Fig. 1 is changed to Fig. 1A, Fig. 1B, Fig. 1C, etc., the specification, at the Brief Description of the Drawings, must likewise be changed. Please make such changes by 37 CFR 1.312 Amendment at the time of submitting drawing changes.

**INFORMATION ON HOW TO EFFECT DRAWING CHANGES**

**1. Correction of Informalities--37 CFR 1.85**

File new drawings with the changes incorporated therein. The application number or the title of the invention, inventor's name, docket number (if any), and the name and telephone number of a person to call if the Office is unable to match the drawings to the proper application, should be placed on the back of each sheet of drawings in accordance with 37 CFR 1.84(c). Applicant may delay filing of the new drawings until receipt of the Notice of Allowability (PTOL-37). Extensions of time may be obtained under the provisions of 37 CFR 1.136. The drawing should be filed as a separate paper with a transmittal letter addressed to the Drawing Review Branch.

**2. Timing of Corrections**

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

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

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

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

d his

(FILE 'USPAT' ENTERED AT 08:27:57 ON 27 MAR 1997)

L1 4 S (FUZZY OR NEURAL) (P) (SEAT? (5A) (OCCUPAN? OR SENSOR OR  
CO  
L2 10811 S (WEIGHT OR FORCE) (P) SEAT? (P) (OCCUPAN? OR CONDITION O  
R S  
L3 1 S L2 (P) (FUZZY OR NEURAL?)  
L4 13 S L2 (L) (FUZZY OR NEURAL?)  
=> d l1 1-4;d l3;d 1-13

1. 5,582,400, Dec. 10, 1996, Device for conveying sheets to a sheet pile; Michael Seydel, 271/176, 183, 195, 204 [IMAGE AVAILABLE]
2. 4,933,224, Jun. 12, 1990, Method for adapting separable fasteners for attachment to other objects; Richard N. Hatch, 428/100; 24/306, 444; 428/120, 192, 308.4, 311.11, 329, 900 [IMAGE AVAILABLE]
3. 4,881,997, Nov. 21, 1989, Method for adapting separable fasteners for attachment to other objects; Richard N. Hatch, 156/66; 24/306, 444; 156/73.1, 78, 245, 292; 264/46.4, 46.7; 297/DIG.1, DIG.6; 428/100, 120, 308.4, 900 [IMAGE AVAILABLE]
4. 4,059,909, Nov. 29, 1977, Neural receptor augmented G seat system; Gerald Joseph Kron, 434/59; 297/180.12, DIG.3 [IMAGE AVAILABLE]
1. 5,019,979, May 28, 1991, Control for automatic transmission; Hiroshi Takahashi, 364/424.086; 395/900, 905; 477/121, 127 [IMAGE AVAILABLE]
1. 5,586,561, Dec. 24, 1996, Back guard with tunnel for spinal column; Shreve M. Archer, III, 128/846; 602/19 [IMAGE AVAILABLE]
2. 5,577,816, Nov. 26, 1996, Method of and system for controlling brakes; Osamu Suzuki, et al., 303/174, 163 [IMAGE AVAILABLE]
3. 5,573,313, Nov. 12, 1996, Method of and system for controlling brakes; Osamu Suzuki, et al., 303/115.2, 137, 150 [IMAGE AVAILABLE]
4. 5,570,301, Oct. 29, 1996, System for unencumbered measurement and reporting of body posture; John W. Barrus, 364/559; 73/172, 865.4; 364/550 [IMAGE AVAILABLE]
5. 5,536,059, Jul. 16, 1996, Seat suspension system using human body responses; Farid M. L. Amirouche, 296/65.1; 188/299; 248/550, 566; 267/131; 280/707 [IMAGE AVAILABLE]
6. 5,480,221, Jan. 2, 1996, Rear wheel braking force control method and an apparatus therefor; Takao Morita, et al., 303/113.5, 116.1, 119.1,

NEW

159, DIG.2 [IMAGE AVAILABLE]

7. 5,400,801, Mar. 28, 1995, Back guard; Shreve M. Archer, III, 128/846; 2/92, 467 [IMAGE AVAILABLE]

8. 5,365,444, Nov. 15, 1994, Method of estimating vehicle velocity and method of and system for controlling brakes; Osamu Suzuki, et al., 364/426.018; 180/170, 197; 364/565 [IMAGE AVAILABLE]

9. 5,321,617, Jun. 14, 1994, System for accommodating sitting attitude of vehicle occupant; Takakazu Mori, et al., 364/424.059; 296/65.1 [IMAGE AVAILABLE]

10. 5,319,555, Jun. 7, 1994, Vehicle automatic transmission control system for controlling the speed change ratio based on driving resistance; Yoshihisa Iwaki, et al., 364/424.086; 395/900; 477/98, 120, 902, 903, 904 [IMAGE AVAILABLE]

11. 5,302,007, Apr. 12, 1994, Rear wheel braking force control method and an apparatus therefor; Takao Morita, et al., 303/9.73, 113.5 [IMAGE AVAILABLE]

12. 5,019,979, May 28, 1991, Control for automatic transmission; Hiroshi Takahashi, 364/424.086; 395/900, 905; 477/121, 127 [IMAGE AVAILABLE]

13. 4,059,909, Nov. 29, 1977, Neural receptor augmented G seat system; Gerald Joseph Kron, 434/59; 297/180.12, DIG.3 [IMAGE AVAILABLE]

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fuzzy

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(FILE 'USPAT' ENTERED AT 08:21:45 ON 21 MAR 1997)

L1 0 S (AIRBAG OR AIR(W)BAG) AND (FUZZY OR NEURAL) AND (PASSENGER  
 ER  
 L2 1515 S (SEAT? (5A) (CONDITION OR POSITION? OR STATUS) OR OCCUPANT?)  
 L3 6967 S FUZZY OR NEURAL  
 L4 12 S L2 AND L3  
 => d 1-12

1. 5,579,994, Dec. 3, 1996, Method and control system for adaptively controlling an automotive HVAC system; Leighton I. Davis, Jr., et al., 236/49.3, 91C [IMAGE AVAILABLE]
2. 5,562,707, Oct. 8, 1996, Garment for applying controlled electrical stimulation to restore motor function; Arthur Prochazka, et al., 607/2, 48 [IMAGE AVAILABLE]
3. 5,481,615, Jan. 2, 1996, Audio reproduction system; Graham P. Eatwell, et al., 381/71, 72, 74, 103 [IMAGE AVAILABLE]
4. 5,422,544, Jun. 6, 1995, Lighting controller with compensation for eye adaptability characteristics; Richard V. Giddings, et al., 315/156, 151, 158, DIG.4 [IMAGE AVAILABLE]
5. 5,394,934, Mar. 7, 1995, Indoor air quality sensor and method; Alan D. Rein, et al., 165/200; 73/23.21; 236/49.3; 454/256 [IMAGE AVAILABLE]
6. 5,384,716, Jan. 24, 1995, Occupant condition determining apparatus; Shoichi Araki, et al., 364/557; 374/112 [IMAGE AVAILABLE]
7. 5,321,617, Jun. 14, 1994, System for accommodating sitting attitude of vehicle occupant; Takakazu Mori, et al., 364/424.059; 296/65.1 [IMAGE AVAILABLE]
8. 5,319,248, Jun. 7, 1994, Automotive vehicle seat adjusting system; Yoshimi Endou, 307/10.1; 318/468, 568.1; 364/424.059 [IMAGE AVAILABLE]
9. 5,291,748, Mar. 8, 1994, Air condition control apparatus; Matsuei Ueda, 62/179; 236/78D; 395/22 [IMAGE AVAILABLE]
10. 5,282,134, Jan. 25, 1994, Slant transform/signal space crash discriminator; Tony Gioutsos, et al., 364/424.055; 180/274 [IMAGE AVAILABLE]

AVAILABLE]

11. 5,261,596, Nov. 16, 1993, Air quality conditioning system; Hirokazu Tachibana, et al., 236/49.3; 165/248; 454/229, 256 [IMAGE AVAILABLE]

12. 4,059,909, Nov. 29, 1977, \*\*Neural\*\* receptor augmented G seat system; Gerald Joseph Kron, 434/59; 297/180.12, DIG.3 [IMAGE AVAILABLE]

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Ad => d his
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(5      (FILE 'USPAT' ENTERED AT 08:29:14 ON 20 MAR 1997)
(9
(1      DEL HIS
(1 L1      2559 S (AIRBAG OR AIR (A) BAG) (P) (INGIT? OR DEPLOY? OR FIR?)
(2 L2      222525 S SEAT?
(2 L3      1081 S L1 AND L2
(2 L4      957 S PRESSURE AND FORC? AND FUZZ?
(3 L5      1357287 S THRESHOLD OR LIMIT?
(3 L6      9510 S INFANT?
(4 L7      74 S PRESSURE (P) SENSOR (P) PASSENGER (P) SEAT?
(4 L8      35169 S SEAT? (P) (FORWARD? OR BACKWARD? OR REARWARD?)
(4 L9      421 S L1 AND (FUZZY OR PATTERN OR LEARN? OR NEURAL?)
(5 L10     178 S L9 AND L2
(5 L11     49 S L8 AND L10
(6 L12     38 S L11 AND (L5 OR L6 OR L7 OR L4)
(6 L13     4908 S PASSENGER (3A) SEAT?
(6 L14     76 S L9 AND L13
(7 L15     27 S L14 AND L8
(7      SET PAGELength 62
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(FILE 'USPAT' ENTERED AT 12:46:49 ON 20 MAR 1997)

L1 1121 S (PASSENGER OR CHILD? OR INFANT) (10A) (SIDE OR SEAT? OR  
OCC  
L2 268872 S (DEPLOY? OR INFLAT? OR FIR? OR IGNI?) AND (INHIBIT? OR D  
IAB  
L3 3386 S SIR OR SUPPLEMENT? (3A) INFLAT? (3A) RESTRAINT  
L4 9 S L1 AND L2 AND L3  
=> d 1-9

1. 5,574,427, Nov. 12, 1996, Method and apparatus for detecting **\*\*air\*\***  
**\*\*bag\*\*** **\*\*deployment\*\***; Eric S. Cavallaro, 340/436; 280/735; 340/426,  
438; 364/424.055 [IMAGE AVAILABLE]

2. 5,527,574, Jun. 18, 1996, Reinforced **\*\*air\*\*** **\*\*bag\*\*** door cover and  
method for making same; Peter J. Iannazzi, et al., 428/43; 280/728.3;  
428/76 [IMAGE AVAILABLE]

3. 5,501,890, Mar. 26, 1996, Invisible tear seam for an **\*\*air\*\*** **\*\*bag\*\***  
**\*\*deployment\*\*** opening cover; Daniel H. Mills, 428/68; 280/728.3, 743.1;  
428/35.7, 36.5, 71, 76, 212, 213, 220 [IMAGE AVAILABLE]

4. 5,496,060, Mar. 5, 1996, One piece detachable cover fastener; Timothy  
J. Whited, et al., 280/728.3; 24/297; 411/509 [IMAGE AVAILABLE]

5. 5,474,327, Dec. 12, 1995, Vehicle occupant restraint with seat  
pressure sensor; Theresa J. Schousek, 280/735; 180/268; 280/730.1 [IMAGE  
AVAILABLE]

6. 5,443,777, Aug. 22, 1995, Method for producing an invisible tear seam  
for an **\*\*air\*\*** **\*\*bag\*\*** **\*\*deployment\*\*** opening cover; Daniel H. Mills,  
264/255, 265; 280/732; 425/434, 435 [IMAGE AVAILABLE]

7. 5,432,385, Jul. 11, 1995, **\*\*Supplemental\*\*** **\*\*inflatable\*\***  
**\*\*restraint\*\*** energy management and **\*\*deployment\*\*** system; Kevin D.  
Kincaid, et al., 307/10.1; 280/735; 340/436 [IMAGE AVAILABLE]

8. 5,429,784, Jul. 4, 1995, Method for making a reinforced **\*\*air\*\***  
**\*\*bag\*\*** door cover; Peter J. Iannazzi, et al., 264/126, 138, 139, 163,  
255, 257, 310 [IMAGE AVAILABLE]

9. 5,211,421, May 18, 1993, **\*\*Air\*\*** **\*\*bag\*\*** cover door retainer; Roger  
W. Catron, et al., 280/728.2, 732 [IMAGE AVAILABLE]

=>

*Gordon*

MAYA Search Report Summary for 566029

Sales Order Summary:

Customer ID: 681  
Sales Transaction Nbr: 34888  
Date Posted: March 3, 1997  
Product: E003  
Quantity: 50

E003 WORD FREQUENCY SEARCH REPORT

Top Referenced Classes (up to 50):

1. 280/735	Total=24	ORs=13	XR=11
2. 280/730.1	Total=10	ORs=5	XR=5
3. 180/273	Total=7	ORs=1	XR=6
4. 280/732	Total=7	ORs=2	XR=5
5. 307/10.1	Total=6	ORs=1	XR=5
6. 280/730.2	Total=5	ORs=2	XR=3
7. 297/238	Total=5	ORs=0	XR=5
8. 180/282	Total=3	ORs=0	XR=3
9. 280/736	Total=3	ORs=1	XR=2
10. 280/739	Total=3	ORs=0	XR=3
11. 297/216.11	Total=3	ORs=2	XR=1

Top Closest Patents:

5474327	5482314	5570903	5528698	5525843
5454591	5232243	5494311	5602734	5605348
5602425	5547149	5492361	5564736	5542742
5161820	4733956	5439249	5505485	5324071
5222761	5484166	5466001	5515933	5338062
4712892	5524962	5390952	5375908	5118134
5553909	5039169	5574427	5516194	5468047
5326133	4900079	5531472	5538284	5328233
5390977	5511820	5468044	5330226	5184844
4702572	5564739	5389751	4969687	5209510

### APPLICATION TRANSFER REQUEST

**Section I. APPLICATION TRANSFER REQUEST**

Date 3/1/96 S.N. 08/566,029

TO: Receiving A.U. 2304 Class/sub 364 Examiner \_\_\_\_\_

FROM: Originating A.U. 3106 Class/Sub 280 Examiner Callen

REASON: *Claims directed to calculating and summing values (computer functions)*

Request for Reconsideration  
(Return to Classification)

**Section II. DISPOSITION BY RECEIVING A.U.**

Date 03/25/96 Ex'r TEN

Accepted (keep in receiving A.U.)

Not Accepted  Forward to \_\_\_\_\_ Classification Group

Return to Originating A.U. \_\_\_\_\_ Nonclassification issue only:

REASON:  Restriction

Other

**Section III. DISPOSITION BY \_\_\_\_\_ Classification Group. Date \_\_\_\_\_**

Transfer Approved-Forward to A.U. \_\_\_\_\_ Class/sub \_\_\_\_\_ Classifier \_\_\_\_\_

Transfer Disapproved-Forward to Originating A.U. \_\_\_\_\_ Concurring \_\_\_\_\_  
Classifier \_\_\_\_\_

REASON: Nonclassification issue raised:  Restriction

Other



REV. 8/31/95

H-195546

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

ROBERT JOHN CASHLER

METHOD OF INHIBITING OR ALLOWING AIRBAG DEPLOYMENT

POWER OF ATTORNEY AND  
DESIGNATION OF CORRESPONDENCE ADDRESS

As an agent of Delco Electronics Corporation, who is the assignee of this patent application, I hereby appoint the following attorney employed by Delco Electronics Corporation to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

MARK A. NAVARRE (Reg. No. 29572)

Address all communications to

MARK A. NAVARRE  
Delco Electronics Corporation - P.O. BOX 9005  
ERC Building - Mail Stop D-32 - Kokomo, IN 46904  
Telephone: 317/451-3480

I hereby declare and certify that I am an agent of Delco Electronics Corporation and Delco Electronics Overseas Corporation and am empowered to make the above appointment, that the assignee's ownership of this patent application is established by the attached assignment documentation, that the attached documentation is a true copy of the original documentation, that the original or a true copy of the attached documentation has been or is concurrently being submitted to the Patent and Trademark Office for recording, that the attached documentation has been reviewed, and that to the best of the assignee's knowledge and belief, title is in the assignee seeking to take the action. I further declare that the foregoing statements made of my own knowledge are true and made on information and belief are believed to be true and made with the understanding that willful false statements and the like are punishable by fine or imprisonment, or both, under title 18 United States Code section 1001 and may jeopardize the validity of this application or any patent issuing thereon.

By: Jimmy L. Funke  
Name: Jimmy L. Funke - Agent

Date 12/1/95

BAR CODE LABEL



# U.S. PATENT APPLICATION

SERIAL NUMBER

08/566,029

FILING DATE

12/01/95

CLASS

280

GROUP ART UNIT

3106

APPLICANT

ROBERT J. CASHLER, KOKOMO, IN.

\*\*CONTINUING DATA\*\*\*\*\*  
VERIFIED

\*\*FOREIGN/PCT APPLICATIONS\*\*\*\*\*  
VERIFIED

FOREIGN FILING LICENSE GRANTED 02/21/96

STATE OR COUNTRY	SHEETS DRAWING	TOTAL CLAIMS	INDEPENDENT CLAIMS	FILING FEE RECEIVED	ATTORNEY DOCKET NO.
IN	4	22	2	\$794.00	H-195546

ADDRESS

MARK A NAVARRE  
DELCO ELECTRONICS CORPORATION  
P O BOX 9005  
ERC BUILDING MAIL STOP D 32  
KOKOMO IN 46904

TITLE

METHOD OF INHIBITING OR ALLOWING AIRBAG DEPLOYMENT

This is to certify that annexed hereto is a true copy from the records of the United States Patent and Trademark Office of the application which is identified above.

By authority of the  
COMMISSIONER OF PATENTS AND TRADEMARKS

Date

Certifying Officer

PATENT APPLICATION SERIAL NO. 08/566029

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE  
FEE RECORD SHEET

300 SC 04-0549 01/30/96 08566029  
30017 101 794.00CH H-195546

PTO-1556  
(5/87)

**PATENT APPLICATION FEE DETERMINATION RECORD**

Effective October 1, 1995

Application or Docket Number

**CLAIMS AS FILED - PART I**

(Column 1) (Column 2)

FOR	NUMBER FILED	NUMBER EXTRA
BASIC FEE		
TOTAL CLAIMS	22 minus 20 = *	2
INDEPENDENT CLAIMS	2 minus 3 = *	
MULTIPLE DEPENDENT CLAIM PRESENT		

\* If the difference in column 1 is less than zero, enter "0" in column 2

**SMALL ENTITY**

OR

**OTHER THAN SMALL ENTITY**

RATE	FEE	RATE	FEE
	375.00		750.00
x\$11=		x\$22=	44
x39=		x78=	
+125=		+250=	
TOTAL		TOTAL	794

**CLAIMS AS AMENDED - PART II**

(Column 1) (Column 2) (Column 3)

AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	* 19	Minus	** 22
Independent	* 3	Minus	*** 3	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

**SMALL ENTITY**

OR

**OTHER THAN SMALL ENTITY**

RATE	ADDITIONAL FEE	RATE	ADDITIONAL FEE
x\$11=		x\$22=	
x39=		x78=	
+125=		+250=	
TOTAL ADDIT. FEE		TOTAL ADDIT. FEE	

(Column 1) (Column 2) (Column 3)

AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

**SMALL ENTITY**

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**OTHER THAN SMALL ENTITY**

RATE	ADDITIONAL FEE	RATE	ADDITIONAL FEE
x\$11=		x\$22=	
x39=		x78=	
+125=		+250=	
TOTAL ADDIT. FEE		TOTAL ADDIT. FEE	

(Column 1) (Column 2) (Column 3)

AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

**SMALL ENTITY**

OR

**OTHER THAN SMALL ENTITY**

RATE	ADDITIONAL FEE	RATE	ADDITIONAL FEE
x\$11=		x\$22=	
x39=		x78=	
+125=		+250=	
TOTAL ADDIT. FEE		TOTAL ADDIT. 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."

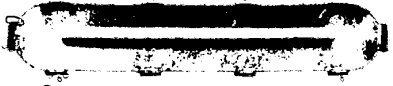
\*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.



Best Available Copy

701-45  
701-45  
Class  
Subclass  
ISSUE CLASSIFICATION



5732375  
5732375

UTILITY SERIAL NUMBER 08/566029  
PATENT DATE MAR 24 1998  
PATENT NUMBER

SERIAL NUMBER	FILING DATE	CLASS	SUBCLASS	GROUP ART UNIT	EXAMINER
08/566,029	12/01/95	200 701 364	45 A04.05	3106 23.4	NGUYEN

APPLICANTS  
ROBERT J. CASHLER, KOKOMO, IN.

\*\*CONTINUING DATA\*\*\*\*\*  
VERIFIED  
TN

\*\*FOREIGN/PCT APPLICATIONS\*\*\*\*\*  
VERIFIED  
TN

FOREIGN FILING LICENSE GRANTED 02/21/96

Foreign priority claimed 35 USC 119 conditions met	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	AS FILED	STATE OR COUNTRY IN	SHEETS DRWGS. 4	TOTAL CLAIMS 22	INDEP. CLAIMS 2	FILING FEE RECEIVED \$794.00	ATTORNEY'S DOCKET NO. H-195546
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Verified and Acknowledged *Exam. Initials* TN

MARK A NAVARRE  
DELCO ELECTRONICS CORPORATION  
P O BOX 9005  
ERC BUILDING MAIL STOP D 32  
KOKOMO IN 46904

TITLE  
METHOD OF INHIBITING OR ALLOWING AIRBAG DEPLOYMENT

U.S. DEPT. of COMMERCE • Patent and Trademark Office-PCT-436L (rev. 7-94)

PARTS OF APPLICATION FILED SEPARATELY		APPLICATOR'S EXAMINER <i>Parson Hand</i>	
NOTICE OF ALLOWANCE MAILED 4/10/97	ASSISTANT EXAMINER	CLAIMS ALLOWED Total Claims: 19 Print Claim: 1	
ISSUE FEE Amount Due: 81290.00 Date Paid: 1/14/97	JAN NGUYEN PATENT EXAMINER GROUP 2300 Primary Examiner	DRAWING Sheets Drwg: 4 Figs. Drwg: 9 Print Fig: 8	
Label Area		ISSUE BATCH NUMBER R44	
PREPARED FOR ISSUE			
WARNING: The information disclosed herein may be restricted. Unauthorized disclosure may be prohibited by the United States Code Title 35, Sections 122, 181 and 368. Possession outside the U.S. Patent & Trademark Office is restricted to authorized employees and contractors only.			

Form PTO-436A (Rev. 8/92)



Staple Issue Slip Here

POSITION	ID NO.	DATE
CLASSIFIER	25	01-31-26
EXAMINER	230	2-10-26
TYPIST	324	2-29-26
VERIFIER	446	2/21
CORPS CORR.		
SPEC. HAND		
FILE MAINT.		
DRAFTING		

INDEX OF CLAIMS

Claim	Date
1	03 09 07 10 07 27
2	
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11	11
12	12
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Claim	Date
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- SYMBOLS
- ✓ ..... Rejected
  - ..... Allowed
  - (Through numbers) ..... Cancelled
  - ..... Restricted
  - N ..... Non-elected
  - I ..... Interference
  - A ..... Appeal
  - O ..... Objected

(LEFT INSIDE)

**SEARCHED**

Class	Sub:	Date	Exmr.
364	424.055 424.056 424.057 567,568	09/20/97	TW
180	271 282 268 273		
307	15.1		
340	436 438		
280	735 730.01 730.02		
update seal as above		09/03/97	TW

**SEARCH NOTES**

	Date	Exmr.
Waya seal	03/3/97	TW
APS seals	03/20/97	TW
<p>(FILE 'USPAT' ENTERED AT 08:29:14 ON 20 MAR 1997)</p> <p>DEL HIS</p> <p>L1 2599 S AIRBAG OR AIR (A) BAG? (P) (INCLT? OR DEPLOY? OR FIR?)</p> <p>L2 222325 S SEAT?</p> <p>L3 1081 S L1 AND L2</p> <p>L4 557 S PRESSURE AND FORCE? AND FUZZ?</p> <p>L5 1357287 S THRESHOLD OR L1:W1??</p> <p>L6 9310 S INFANT?</p> <p>L7 74 S PRESSURE (P) SENSOR (P) PASSENGER (P) SEAT?</p> <p>L8 35169 S SEAT? (P) (FORWARD? OR BACKWARD? OR REARWARD?)</p> <p>L9 421 S L1 AND FUZZY OR PATTERN OR LEARN? OR NEURAL??</p> <p>L10 178 S L9 AND L2</p> <p>L11 49 S L8 AND L10</p> <p>L12 38 S L11 AND L5 OR L6 OR L7 OR L4?</p> <p>L13 4908 S PASSENGER (3A) SEAT?</p> <p>L14 76 S L9 AND L13</p> <p>L15 27 S L14 AND L8</p>		
<p>(FILE 'USPAT' ENTERED AT 12:46:49 ON 20 MAR 1997)</p> <p>L1 OCC 1121 S (PASSENGER OR CHILD? OR INFANT?) (10A) (SIDE OR SEAT? OR</p> <p>L2 268872 S (DEPLOY? OR INPLAT? OR FIR? OR IGN1?) AND (INHIBIT? OR D</p> <p>IAB</p> <p>L3 3386 S SIR OR SUPPLEMENT? (3A) INPLAT? (3A) RESTRAINT</p> <p>L4 9 S L1 AND L2 AND L3</p>		
APS seal	03/21/97	TW
<p>(FILE 'USPAT' ENTERED AT 08:21:45 ON 21 MAR 1997)</p> <p>L1 0 S (AIRBAG OR AIR(W)BAG) AND (FUZZY OR NEURAL) AND (PASSNG</p> <p>BR</p> <p>L2 1515 S (SEAT?) (5A) (CONDITION OR POSITION? OR STATUS?) OR OCCUPA</p> <p>(P)</p> <p>L3 6967 S FUZZY OR NEURAL</p> <p>L4 12 S L2 AND L3</p>		

**INTERFERENCE SEARCHED**

Class	Sub.	Date	Exmr.
364	424.055 424.056 424.057 567	09/04/97	TW
180	273		
280	735		

NOTED:  
Classes 764/423.098-453 are in the process of  
being changed to 701/1-302. being  
at September 97.

5732375

FIG - 1

O.G. FIG. 8  
CLASS. SYMBOL  
701 45  
BY  
DRAFTSMAN

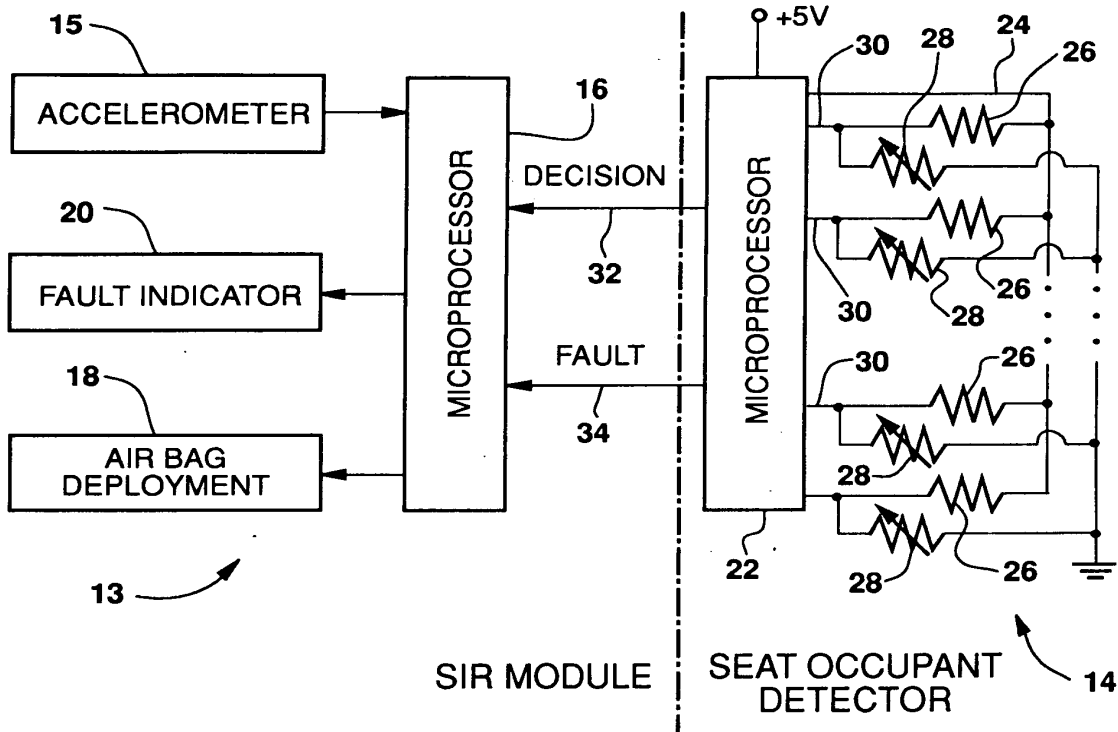
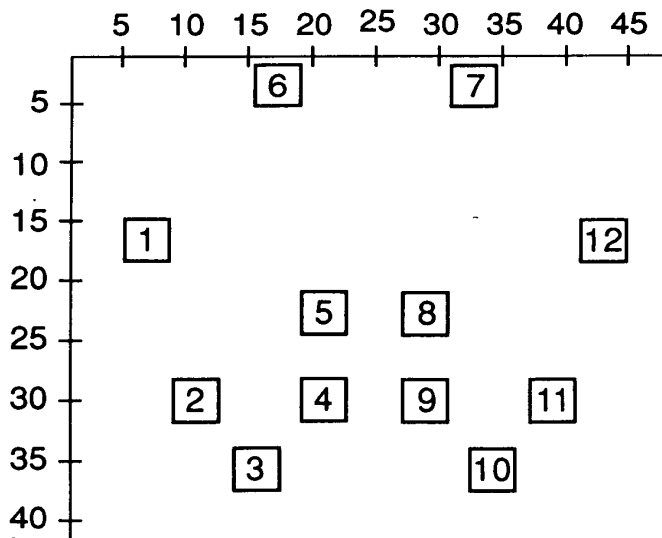


FIG - 2



08/566029



O.G. FIG.		
BY	CLASS	SUBCLASS
DRAFTSMAN		

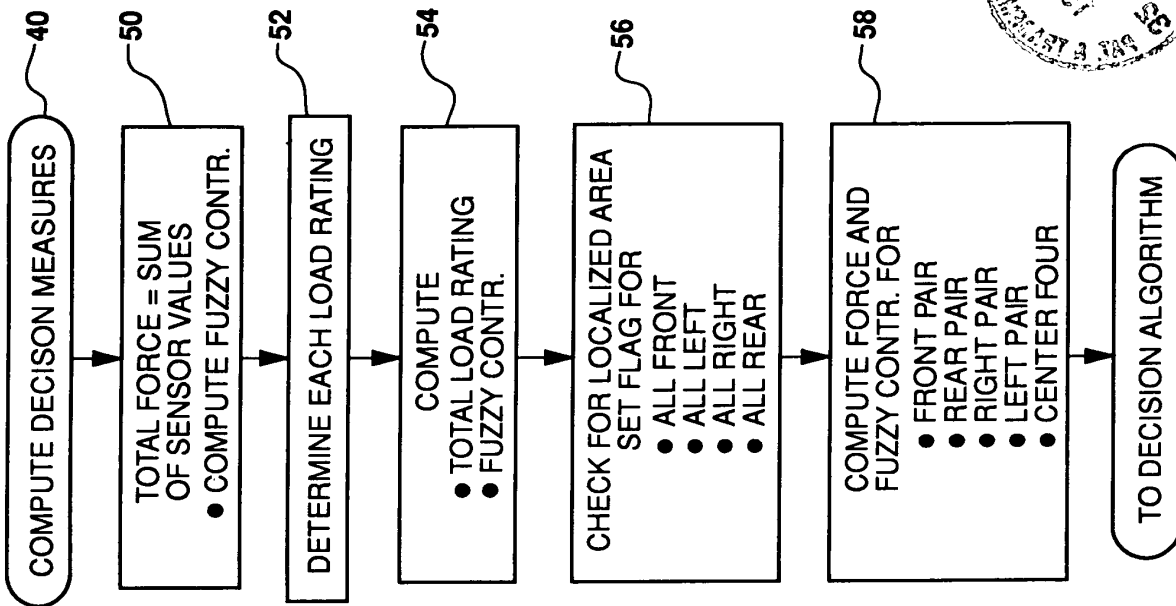


FIG - 4

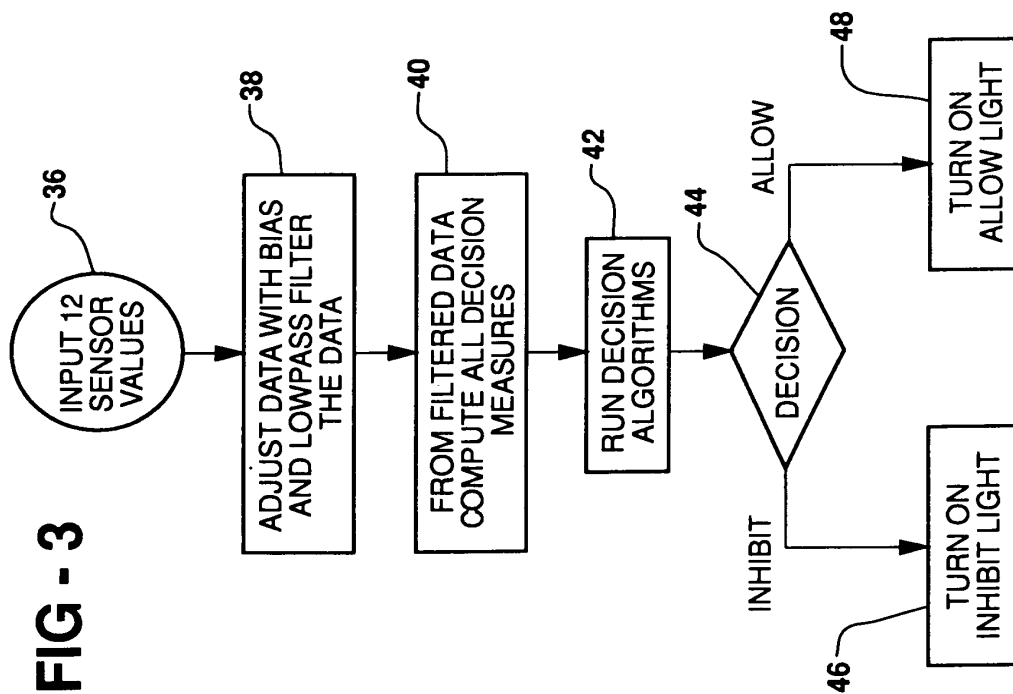
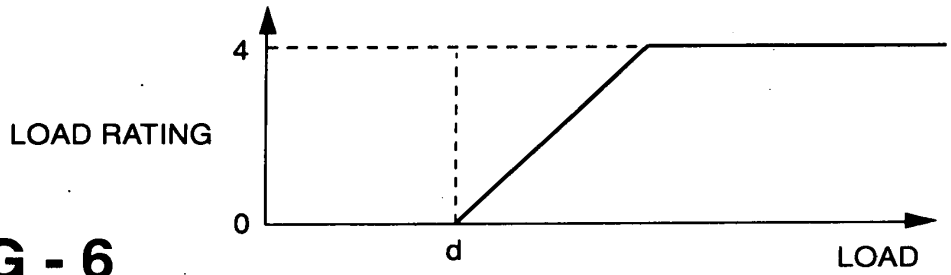
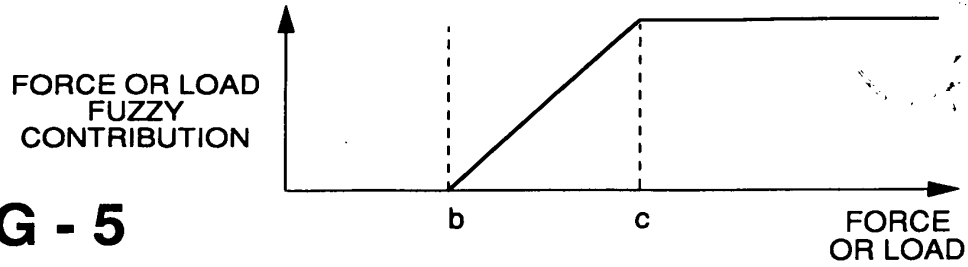


FIG - 3



BY	CLASS	DRAFTSMAN
	SUBCLASS	
O.G. FIG.		

FIG - 7

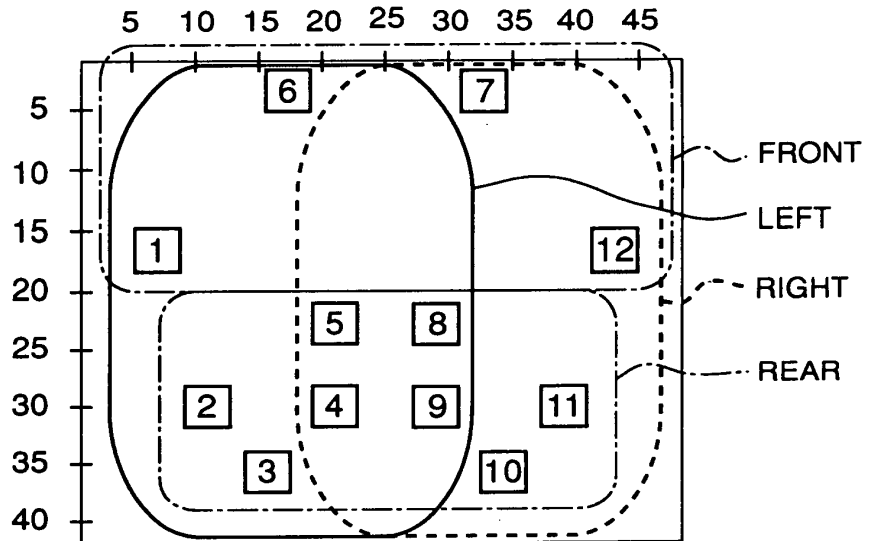
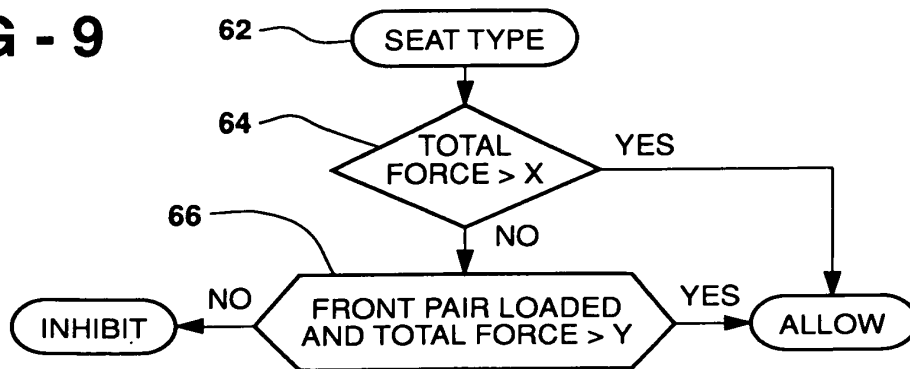


FIG - 9



D.G. FIG. 8  
CLASS. SURCLASS  
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CRAFTSMAN

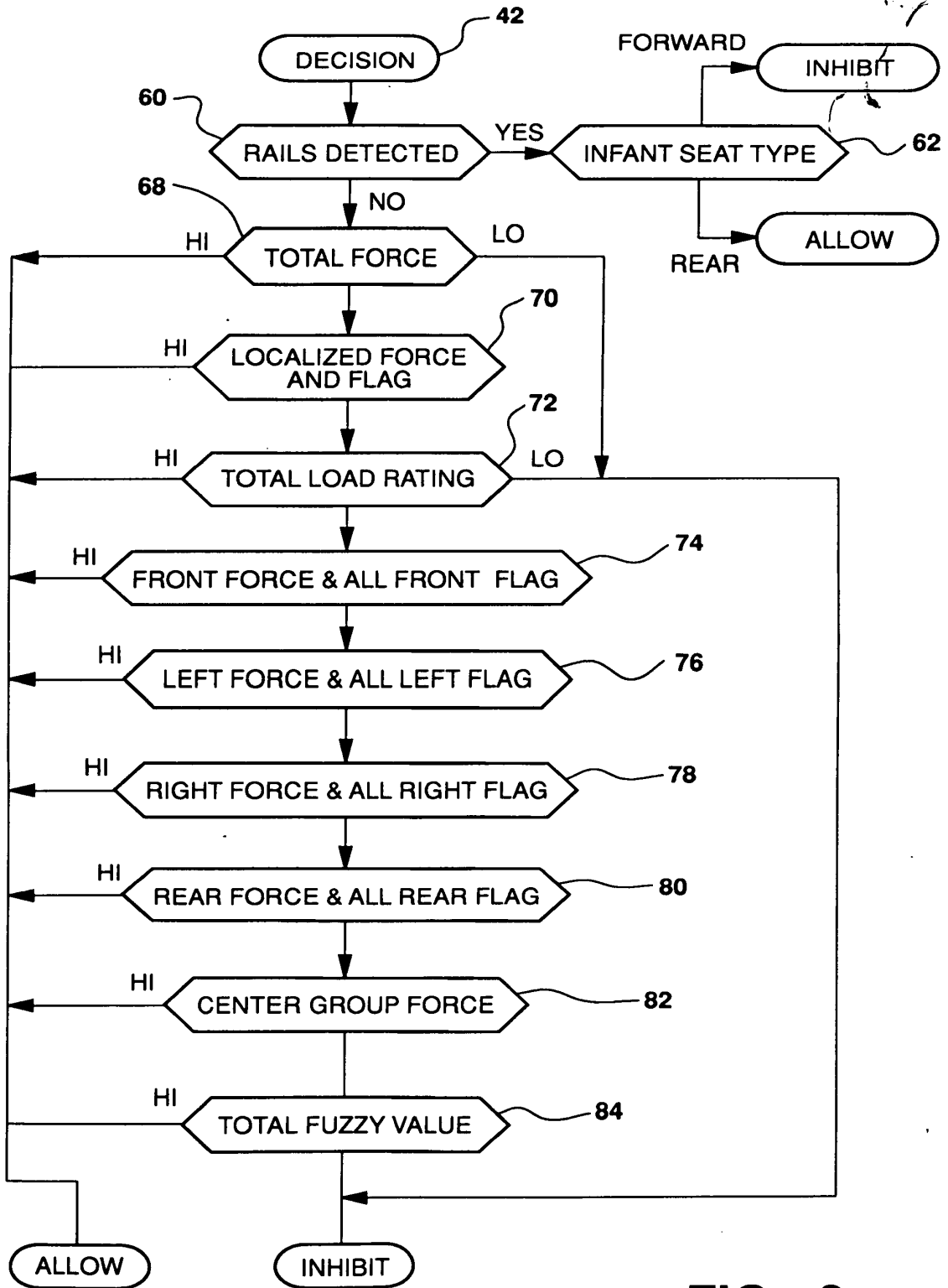


FIG - 8





95546

METHOD OF INHIBITING OR ALLOWING AIRBAG DEPLOYMENT

5 Field of the Invention

This invention relates to occupant restraints for vehicles and particularly to a method using seat sensors to determine seat occupancy for control of airbag deployment.

10 Background of the Invention

The expanding use of supplemental inflatable restraints (SIRs) or airbags for occupant protection in vehicles increasingly involves equipment for the front outboard passenger seat. The driver side airbag has been  
15 deployed whenever an imminent crash is sensed. The position and size of the driver is fairly predictable so that such deployment can advantageously interact with the driver upon a crash. The passenger seat, however, may be occupied by a large or a small occupant including a baby in an infant seat.  
20 It can not be assumed that a passenger of any size is at an optimum position (leaning against or near the seat back). An infant seat is normally used in a rear facing position for small babies and in a forward facing position for larger babies and small children. While the forward facing position  
25 approximates the preferred position for airbag interaction, the rear facing position places the top portion of the infant seat close to the vehicle dash which houses the airbag. In the latter event, it is desirable to prevent deployment of the airbag.

30 It has been proposed in United States Patent 5,474,327 which will issue December 12, 1995, entitled VEHICLE OCCUPANT RESTRAINT WITH SEAT PRESSURE SENSOR and assigned to the assignee of this invention, to incorporate pressure sensors in the passenger seat and monitor the  
35 response of the sensors by a microprocessor to evaluate the weight distribution and determine the type of occupant and

the facing direction of an infant seat. The sensor arrangement and the algorithm successfully cover most cases of seat occupancy. It is desirable, however, to encompass every case of seat occupancy.

5

#### Summary of the Invention

It is therefore an object of the invention to detect a comprehensive range of vehicle seat occupants including infant seats for a determination of whether an  
10 airbag deployment should be permitted. Another object in such a system is to determine whether an infant seat is facing the front or the rear. Another object is to include sensitivity to the possible seating positions of small children.

15 A SIR system, as is well known, has an acceleration sensor to detect an impending crash, a microprocessor to process the sensor signal and to decide whether to deploy an airbag, and a deployment unit fired by the microprocessor. An occupant detection system can determine if an occupant or  
20 infant seat is positioned in a way to not benefit from deployment, and then signaling the microprocessor whether to allow or inhibit deploying the airbag.

A dozen sensors, judiciously located in the seat, can garner sufficient pressure and distribution information  
25 to allow determination of the occupant type and infant seat position. This information, in turn, can be used as desired to inhibit SIR deployment. The sensors are arranged symmetrically about the seat centerline and includes a front pair, a right pair, a rear pair, a left pair and four in the  
30 center. Each sensor is a very thin resistive device, having lower resistance as pressure increases. A microprocessor is programmed to sample each sensor, determine a total weight parameter by summing the pressures, and determine the pattern of pressure distribution by evaluating local groups of  
35 sensors.

Total force is sufficient for proper detection of adults in the seat, but the pattern recognition provides improved detection of small children and infant seats. To detect infant seats, all patterns of sensor loading which  
 5 correspond to the imprints of various seats are stored in a table and the detected sensor pattern is compared to the table entries. Front and rear facing seats are discriminated on the basis of total force and the loading of sensors in the front of the seat.

10 The pattern recognition for detecting children is made possible by applying fuzzy logic concepts to the pressure readings for each sensor in the array and assigning a load rating to each sensor. Pattern recognition is also enhanced by sampling several pairs of sensors, applying  
 15 leveling technique to them, and computing a measure for the area of the seat covered by each pair. For all measures calculated within the algorithm, a contribution is made to an overall fuzzy rating which is used to handle marginal cases.

20 Brief Description of the Drawings

The above and other advantages of the invention will become more apparent from the following description taken in conjunction with the accompanying drawings wherein like references refer to like parts and wherein:

25 Figure 1 is a schematic diagram of an SIR system incorporating a seat occupant detector;

Figure 2 is a position diagram of seat sensors for the system of Figure 1, according to the invention;

30 Figure 3 is a flow chart representing an overview of an algorithm for determining deployment permission according to the invention;

Figure 4 is a flow chart representing a method of computing decision measures used in the algorithm of Figure 3;

4

Figure 5 is a graphical representation of a function used in fuzzy logic for total force and load ratings;

5 Figure 6 is a graphical representation of a function used in fuzzy logic for determining load rating;

Figure 7 is a position diagram of seat sensors illustrating sensor grouping;

Figure 8 is a flow chart for deployment decision, according to the invention; and

10 Figure 9 is a flow chart representing the logic for determining the facing direction of an infant seat as required by the algorithm of Figure 8.

#### Description of the Invention

15 Referring to Figure 1, a SIR system includes a SIR module 13 coupled to a seat occupant sensing system 14. The SIR module 13 includes an accelerometer 15 mounted on the vehicle body for sensing an impending crash, a microprocessor 16 for receiving a signal from the accelerometer and for  
20 deciding whether to deploy an airbag. An airbag deployment unit 18 is controlled by the microprocessor 16 and fires a pyrotechnic or compressed gas device to inflate an airbag when a deploy command is received. A fault indicator 20, also controlled by the microprocessor 16 will show a failure  
25 of the seat occupant sensing system 14.

The seat occupant sensing system 14 comprises a microprocessor 22 having a 5 volt supply and an enabling line 24 periodically provided with a 5 volt enabling pulse, and a series of voltage dividers coupled between the enabling line  
30 24 and ground. Each voltage divider has a fixed resistor 26 in series with a pressure sensor or variable resistor 28, and the junction point of each resistor 26 and variable resistor 28 is connected to an A/D port 30 of the microprocessor 22. The microprocessor 22 controls the pulse on enabling line 24  
35 and reads each sensor 28 voltage during the pulse period. The microprocessor 22 analyzes the sensor inputs and issues a

decision whether to inhibit airbag deployment and the decision is coupled to the microprocessor 16 by a line 32. The microprocessor 22 also monitors its decisions for consistency and issues a fault signal on line 34 to the  
 5 microprocessor 16 if faults continue to occur over a long period.

Each fixed resistor 26 is, for example, 10 kohms and the variable resistors vary between 10 kohms at high pressure and 100 kohms at low pressure. Then the voltage  
 10 applied to the ports 30 will vary with pressure. Each sensor comprises two polyester sheets each having a film of resistive ink connected to a conductive electrode, the two resistive films contacting one another such that the resistance between electrodes decreases as pressure  
 15 increases. Such pressure sensors are available as ALPS pressure sensors from Alps Electric Co, Ltd, Tokyo, Japan.

The mounting arrangement of sensors 28 on a bottom bucket seat cushion is shown in Figure 2. The sensors are numbered 1-12 according to seat location. A left pair of  
 20 sensors 1 and 2 are on the left side of the seat with sensor 2 to the rear and slightly inboard of sensor 1. Sensors 11 and 12 are the corresponding right pair of sensors. A front pair of sensors 6 and 7 are at the front of the seat and a rear pair of sensors 3 and 10 are at the rear. The four  
 25 remaining sensors 4, 5, 8 and 9 are the center group of sensors. Sensors 5 and 8 are astride the seat centerline and are just in front of sensors 4 and 9. The center group is positioned just to the rear of the seat middle.

The method of operation is illustrated by a series  
 30 of flowcharts wherein the functional description of each block in the chart is accompanied by a number in angle brackets <nn> which corresponds to the reference number of the block. The overall operation is shown in Figure 3 wherein the sensor values are read by the microprocessor 22  
 35 <36> and the data is adjusted by bias correction and low pass filtering <38>. One sensor at a time is turned on, sampled

four times and averaged. Then a bias calibrated for each sensor is subtracted from each sensor reading, and the data is filtered with a time constant on the order of 1 second. Then all decision measures are computed <40> and decision algorithms are run <42>. Ultimately a decision is made to allow or inhibit airbag deployment <44>. Then either an inhibit light is turned on <46> or an allow light is turned on <48>.

Figure 4 shows the algorithm for computing decision measures 40. Total force is calculated by summing the sensor values and a fuzzy contribution is calculated for the total force <50>. Each sensor produces a voltage which is expressed as a digital value in the range of 0-255. The typical range is on the order of 0-50, however. An empty seat will have a total force near 0 after the bias adjustments. A fully loaded seat could go up to about 3000 but 2000 is more likely. For discrimination purposes, the inhibit/allow threshold is less than 255 and for reporting to the display software, the value is clipped to 255.

The total fuzzy contribution is determined according to the function shown in Figure 5. If the total force is below a minimum or inhibit threshold  $b$ , the fuzzy value is zero; if it is above a maximum or allow threshold, the fuzzy value is the difference between the inhibit and allow thresholds; and if it is between the thresholds the fuzzy value is equal to the force value minus the inhibit threshold. The thresholds are calibrated for each application; they may be for example, an inhibit threshold of 32 and an allow threshold of 128.

The next step in Figure 4 is to determine the load rating of each sensor <52>. The load rating is a measure of whether the sensor is detecting some load and is used for pattern recognition purposes. Low loads present a borderline case which is rated by fuzzy logic according to a function similar to that of Figure 5. As shown in Figure 6, if a load is below a base value  $d$ , which may be four, the rating is zero and if it is above the base value it is the difference

between the base and the measured load up to a limit value of, say, four. The total load rating is calculated <54> by summing the individual sensor ratings and the fuzzy contribution of the total load rating is again determined as in Figure 5 where a total load below a minimum threshold b is zero, a total load above the minimum is the total load minus the minimum threshold up to a limit at maximum threshold c. The minimum threshold may be four, for example, and the maximum threshold may be 24.

10           Next a check is made for force concentration in a localized area <56>. Four overlapping localized areas are defined as shown in Figure 7. The front four sensors 1, 6, 7 and 12 are in the front group, the rear eight sensors 2, 3, 4, 5, 8, 9, 10 and 11 are in the rear group, the left eight  
15 sensors 1, 2, 3, 4, 5, 6, 8, and 9 are in the left group, and the eight sensors 4, 5, 7, 8, 9, 10, 11, and 12 are in the right group. The algorithm determines if the pressure is all concentrated in one group by summing the load ratings of the sensors in each group and comparing to the total load rating.  
20 If the rating sum of any group is equal to the total rating, a flag is set for that group (all right, all front etc.).

          Finally the force and fuzzy contribution is computed for each pair of sensors and for the center group <58>. The force on each pair is used to detect occupants  
25 such as small children which can easily sit in one small area of the seat. These measures are looking for the pressure to be evenly distributed over the two sensors of the pair. To accomplish this the algorithm looks at each pair, determines the minimum value of the two sensors, and clip the higher one  
30 to a calibrated "delta" from the lower. If the force is evenly distributed over the two sensors the values will be about equal and the sum will be unaffected by clipping. The sum of the two sensor forces, as adjusted, comprise the force measure of the pair. The fuzzy contribution of each pair is  
35 equal to the force measure of the pair but limited to a maximum value such as 20 which is calibrated separately for

each pair. The center group measure is the sum of the sensor forces and the fuzzy contribution is equal to the sum of the four sensors but limited to a calibrated maximum value.

T90X 5

		SENSOR											
Pattern		1	2	3	4	5	6	7	8	9	10	11	12
10	1		L	L	U	U	L	L	U	U	L	L	
	2	L			U	U			U	U			L
	3	L			U	U	U	L	U	U			
	4				L	L	L	U	L	L			L
	5		L		U	U			U	U		L	
15	6		U	L	U	U	L		U	U			
	7				U	U		L	U	U	L	U	
	8	L			U	U	L	L	U	U			L
	9	L X	L		U	U			L X	L			
	10				L X	L			U	U		L X	L
20	11	L				L			L				L
	12		L		U					U		L	

The measured values, ratings, patterns and flags are used in deciding whether to allow or inhibit deployment. As shown in Figure 8, the decision algorithm 25 first decides if rails of an infant seat are detected <60> and if so whether the seat is facing forwardly or rearwardly <62>. Deployment is allowed for a forward facing seat and inhibited for a rear facing seat. This is determined as shown in Figure 9 wherein if the total force is greater than 30 a certain value <64> the seat is forward facing and deployment is allowed. If not, and the front pair of sensors is loaded and the total force is greater than another set value <66>, the seat is forward facing and deployment is allowed. Otherwise the seat is rear facing and deployment is 35 inhibited. It should be noted that whenever an inhibit or allow decision is made, that decision is controlling and all other conditions lower on the chart are bypassed.

If rails are not detected <60>, the total force is compared to high and low thresholds <68>. If it is above the 40 high threshold deployment is allowed and if below the low threshold the deployment is inhibited. Otherwise, if the localized force for a sensor group is above a threshold and



the flag corresponding to that group is set <70>, deployment is allowed. If not, the next step is to compare the total load rating to high and low thresholds <72>. Deployment is allowed if the rating is above the high threshold and inhibited if below the low threshold. Each of the sensor pairs for front, left, right, and rear are compared to threshold values <74-80>. If any of them are above its threshold and if the flag for that area is set, deployment is allowed. If not, the center group force is compared to a threshold <82> to decide upon allowance. Finally, the total fuzzy value is compared to a threshold <84> to allow deployment if it is sufficiently high, and if not the deployment is inhibited. The fuzzy value decision manages a marginal case where several of the previous measures came close to exceeding their thresholds but didn't, the fuzzy measure can still allow deployment.

It will thus be seen that airbag deployment can be allowed or inhibited by a pattern of resistive sensors embedded in a seat cushion and coupled to a microprocessor to detect the force on each sensor to determine the loading pattern as well as the force values from which infant seat presence and orientation are determined as well as the presence of other occupants.

CLAIMS

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

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1. A method of airbag control in a vehicle having an array of force sensors on the passenger seat coupled to a controller for determining permission for airbag deployment based on sensed force and force distribution comprising the steps of:
- measuring the force detected by each sensor;
  - calculating the total force of the sensor array;
  - allowing deployment if the total force is above a first threshold and inhibiting deployment if the total force is below a second threshold;
  - defining seat areas each having a group of sensors;
  - determining a local pressure area when the total force is concentrated in a seat area;
  - for each group calculating the group force as the sum of sensor forces;
  - for a group in a local pressure area, allowing deployment if the group force is greater than a threshold for that group;
  - determining a fuzzy value for the array; and
  - allowing deployment if the fuzzy value exceeds a threshold.
2. The invention as defined in claim 1 including:
- determining a pattern of sensor loading;
  - determining from the pattern of sensor loading whether an infant seat is present;
  - then determining from the total force and force distribution whether the infant seat is facing forward or rearward;
  - allowing deployment for a forward facing seat; and
  - inhibiting deployment for a rearward facing seat.

3. The invention as defined in claim 1 including:  
determining a pattern of sensor loading;  
prior to the step of allowing deployment if the  
total force is above a first threshold, determining from the  
5 pattern of sensor loading whether an infant seat is present;  
then determining from the total force and force  
distribution whether the infant seat is facing forward or  
rearward;

10 allowing deployment for a forward facing seat; and  
inhibiting deployment for a rearward facing seat.

4. The invention as defined in claim 2 wherein the  
step of determining a pattern of sensor loading comprises  
detecting which sensors are below a first load threshold and  
which sensors are above a second load threshold.

15 5. The invention as defined in claim 2 wherein the  
step of determining from the pattern of loaded sensors  
whether an infant seat is present comprises:

20 establishing a table of loaded and unloaded sensor  
patterns which result from the configuration of the bottom of  
an infant seat; and

deciding that an infant seat is present when the  
pattern of sensor loading matches one of the table patterns.

25 6. The invention as defined in claim 2 wherein the  
step of determining whether the infant seat is facing forward  
or rearward comprises:

deciding that the seat is facing forward when

1) the total force is greater than a first value,

or

30 2) sensors in the front of the seat are loaded and  
the total force is greater than a second value; and

deciding that the seat is facing rearward when both  
the conditions 1) and 2) are not true.

35 7. The invention as defined in claim 1  
wherein the areas are overlapping so that some sensors are  
included in more than one group, the groups including a front

area group, a rear area group, a right area group and a left area group.

8. The invention as defined in claim 1 wherein each area includes a secondary group of sensors peculiar to that area and the method includes:

calculating a modified force for each secondary group; and

allowing deployment if the modified force for any secondary group exceeds a threshold for that secondary group and the secondary group is in a local pressure area.

9. The invention as defined in claim 8 wherein each secondary group of sensors comprises a pair and the step of calculating a modified force comprises limiting the higher sensor force to a maximum delta above the lower sensor force and adding the higher sensor force, as limited, to the lower sensor force.

10. The invention as defined in claim 1 wherein a center seat area includes a center group and the step of calculating a group force comprises summing the measured forces of the sensors in the center group.

11. The invention as defined in claim 1 including the steps of:

calculating a load rating for each sensor from the measured force;

summing the load ratings for all the sensors to derive a total load rating;

allowing deployment if the total load rating is above a maximum value; and

inhibiting deployment if the total load rating is below a minimum value.

12. The invention as defined in claim 11 wherein the step of calculating a load rating for each sensor comprises;

establishing a base force; and

assigning a load rating according to the measured force minus the base force and limiting the load rating to a maximum value.

5 13. The invention as defined in claim 1 including the steps of:

calculating a total load rating for the sensor array;

calculating a force for a plurality of groups of sensors in local areas of the seat;

10 wherein the step of determining a fuzzy value includes assigning a contribution amount to each of the total force, the total load, and each group as a function of the respective forces and load rating, and summing the contribution amounts.

15 14. The invention as defined in claim 13 wherein the step of assigning a contribution amount to the total force comprises:

20 setting a minimum and maximum force threshold; and subtracting the minimum force threshold from the total force and limiting the difference to the maximum force threshold, wherein the limited difference is the contribution amount.

25 15. The invention as defined in claim 13 wherein: the total load rating is calculated by

calculating a load rating for each sensor from the measured force, and

summing the load ratings for all the sensors to derive a total load rating; and

30 the step of assigning a contribution amount to the total load rating comprises *a*

35 setting maximum and minimum thresholds, subtracting the minimum threshold from the total load rating and limiting the difference to the maximum threshold, wherein the limited difference is the contribution amount.

16. The invention as defined in claim 13 wherein the groups include pairs of sensors and wherein:

5 a pair force for each pair is calculated by limiting the higher force of the two sensors to set amount greater than the lower force, and summing the lower force and the higher force, as limited, to derive a pair force; and the step of assigning a contribution amount to the pair force comprises

10 setting a maximum pair force threshold, and setting the pair force contribution amount equal to the pair force limited to the maximum pair force threshold.

17. The invention as defined in claim 13 wherein the groups include a center group of sensors and wherein:

15 the center group force is equal to the sum of the sensor forces in the group; and the step of assigning a contribution amount to the center group force comprises setting the center contribution amount equal to the center group force limited to a center

20 maximum value.

18. A method of airbag control in a vehicle having an array of force sensors on the passenger seat coupled to a controller for determining permission for airbag deployment

25 based on sensed force and force distribution comprising the steps of:

30 measuring the force detected by each sensor; calculating the total force of the sensor array; calculating a load rating for each sensor from the measured force; summing the load ratings for all the sensors to derive a total load rating; allowing deployment based on a high value of the total force or of the total load rating; and

35 inhibiting deployment based on a low value of the total force or of the total load rating.

19. The invention as defined in claim 18 further including the steps of:

determining a fuzzy value for the array based on the measured forces; and  
5 allowing deployment if the fuzzy value exceeds a threshold.

20. The invention as defined in claim 18 further including the steps of:

10 defining seat areas each having a group of sensors;  
determining a local pressure area when the total force is concentrated in a seat area;

for each group calculating the group force as the sum of sensor forces;

15 for a group in a local pressure area, allowing deployment if the group force is greater than a threshold for that group.

21. The invention as defined in claim 20 further including the steps of:

20 determining a fuzzy value for the array based on the total force, the group forces and load ratings; and  
allowing deployment if the fuzzy value exceeds a threshold.

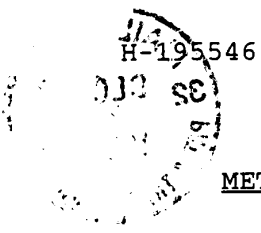
22. The invention as defined in claim 18 further including the steps of:

25 defining seat areas each having a group of sensors;  
determining a local pressure area when the total force is concentrated in a seat area;

calculating a combined sensor force for a pair of sensors in each seat area; and

30 allowing deployment when the combined sensor force for a pair of sensors in a local pressure area exceeds a set value.

08-566,029



METHOD OF INHIBITING OR ALLOWING AIRBAG DEPLOYMENT

Abstract of the Disclosure

An array of pressure sensors on a vehicle passenger seat senses the presence of an occupant including an infant seat and determines whether the infant seat faces forward or rearward. A microprocessor coupled to the sensors determines whether to allow or inhibit deployment based on the sensor load forces and the pattern of loading. The pattern can identify an infant seat and pattern and loading determine its orientation. Local areas are checked to detect child occupants. Fuzzy logic is used to determine loading and to recognize patterns.





DECLARATION  
and  
DESIGNATION OF CORRESPONDENCE ADDRESS

As an inventor named below, I hereby declare that:

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

I believe I am the original, first and sole inventor (if only one inventor is named below) or an original, first and joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought in the specification H-195546 entitled

METHOD OF INHIBITING OR ALLOWING AIRBAG DEPLOYMENT

I have reviewed and understand the contents of the above identified specification including the claims, as amended by any amendment referred to in this Declaration.

I acknowledge my duty to disclose to the Patent and Trademark Office all information known to me to be material to patentability as defined in title 37 Code of Federal Regulations section. 1.56.

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

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1-00

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H-195546



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12/1/95

Commissioner of Patents and Trademarks  
Box Patent Application  
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Sir:

Enclosed for filing are the following patent application papers:

Docket No.: H-195546

Inventors: ROBERT JOHN CASHLER

Title: METHOD OF INHIBITING OR ALLOWING AIRBAG DEPLOYMENT

Filing Fee Formula

Basic Fee.....	\$	750.00
Additional Fees:		
Number of independent claims in excess of 3, times \$78.00.....	\$	0.00
Number of claims in excess of 20, times \$22.00.....	\$	44.00
Multiple dependent claim, add \$250.00.....	\$	0.00
Total Filing Fee.....	\$	794.00

The patent specification H-195546 entitled METHOD OF INHIBITING OR ALLOWING AIRBAG DEPLOYMENT and filed in the Patent and Trademark Office herewith is the patent specification for which the inventor(s) executed the Declaration enclosed herewith.

Please charge the \$794.00 filing fee to Delco Electronics Corporation Deposit Account No. 04-0549.

MARK A. NAVARRE  
Reg. No. 29572  
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Enclosures

## ARTIFACT SHEET

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March 8, 2004