

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT6835637

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	EVIDENCE OF OWNERSHIP
CONVEYING PARTY DATA	
Name	Execution Date
MANFRED KRÄMER	02/23/2017
TIMO ARNOLD	03/22/2017
JOACHIM FUNKE	02/23/2017
RECEIVING PARTY DATA	
Name:	HITACHI ASTEMO, LTD.
Street Address:	2520, TAKABA, HITACHINAKA-SHI
City:	IBARAKI
State/Country:	JAPAN
Postal Code:	312-8503
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	16626994
CORRESPONDENCE DATA	
Fax Number:	(202)721-8250
<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>	
Phone:	2027218200
Email:	wlp@wenderoth.com
Correspondent Name:	WENDEROTH, LIND & PONACK, L.L.P.
Address Line 1:	1025 CONNECTICUT AVE NW
Address Line 2:	SUITE 500
Address Line 4:	WASHINGTON, D.C. 20036
ATTORNEY DOCKET NUMBER:	2019-2339A
NAME OF SUBMITTER:	JANAE GALLUN
SIGNATURE:	/Janae Gallun/
DATE SIGNED:	07/28/2021
Total Attachments: 32	
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor : Attorney Docket No. 2019-2339A
Manfred KRÄMER : **Confirmation No. 3612**
Application No. 16/626,994 : Group Art Unit 3657
Filed December 27, 2019 : Examiner Christopher P. Schwartz
SUSPENSION CONTROL APPARATUS :

EVIDENCE OF OWNERSHIP

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

Dear Commissioner:

A Substitute Statement in lieu of an oath or declaration was filed for each of inventors Manfred Kramer, Timo Arnold and Joachim Funke in the above-identified application on July 23, 2021. The Applicant is a person to whom the inventors are under an obligation to assign the invention. Accordingly, documentary evidence of ownership is enclosed for recordation. The documentary evidence includes:

(1) Technical Services Agreement

On April of 2008, a Technical Services Agreement was entered into between Hitachi, Ltd. and Hitachi Automotive Systems Europe GmbH (HASE). For cases covered by this agreement, individual agreements are entered into between the two parties for each period. Under Article Six of the agreement, HASE's inventions are assigned to Hitachi, Ltd..

(2) Certificate of All Historical Matters and English Translation thereof

An English translation of "Certificate of All Historical Matters" is attached. On July 1, 2009, the automotive business was spun off from Hitachi, Ltd. and was established as Hitachi Automotive Systems, Ltd. (Hitachi AMS). The Certificate of All Historical Matters shows the change of the party of the agreement (1) from Hitachi, Ltd. to Hitachi AMS.

(3) Supplement Agreement No. 2-1

In October 2016, "Supplement Agreement No. 2-1" as an individual agreement based on "(1) Technical Services Agreement" was entered into between Hitachi AMS and HASE. The agreement period thereof is October 1, 2016 to March 31, 2017.

The agreement (1) was made between Hitachi, Ltd and HASE. Since Hitachi AMS was spun off from Hitachi, Ltd; Hitachi AMS has taken over the agreement (1). Thus "Hitachi, Ltd." appearing in the agreement (1) should be read as Hitachi AMS.

(4) Invention Disclosure of Present Invention

An Invention Disclosure was executed by Manfred Kramer, Timo Arnold, Dr. Joachim Funke and Matthias Bruns. In view of the explanation contained in the Invention Disclosure (I-VI), it is apparent that the invention corresponds to the present invention. The Invention Disclosure states that the subject invention arose from work funded by HASE.

(5) Agreement on Employee Inventions

Agreements on Employee Inventions were entered into by Manfred Kramer (February 23, 2017), Timo Arnold (March 22, 2017), and Joachim Funke (February 23, 2017). The agreement establishes that the inventors (Manfred Kramer, Timo Arnold and Joachim Funke) assigned the subject invention to HASE.

Conclusion

The attached documents establish that the subject invention (EU-ERF-2016004) was assigned from the inventors to HASE, and from HASE to Hitachi AMS (see documents (1) to (3)). Thus, Hitachi AMS owns the invention described in document (4). Hitachi AMS has changed their name to Hitachi Astemo, Ltd.

Respectfully submitted,

/Michael Huppert/ Digitally signed by /Michael Huppert/
Date: 2021.07.28 12:47:55 -04'00'

Michael S. Huppert
Registration No. 40,268
Attorney for Applicant

WENDEROTH, LIND & PONACK, L.L.P.
1025 Connecticut Avenue, N.W., Suite 500
Washington, D.C. 20036
Telephone (202) 721-8200
Facsimile (202) 721-8250
July 28, 2021

The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 23-0975.

TECHNICAL SERVICES AGREEMENT

This Agreement is made and entered into on the 1st day of April 2008 (hereinafter referred to as "Effective Date")

BETWEEN:

Hitachi, Ltd., Automotive Systems, a corporation organized and existing under the laws of Japan and having its principal office at 18-13, Soto-kanda, 1-chome, Chiyoda-ku, Tokyo 101-8608 JAPAN (hereinafter referred to as "HITACHI").

AND:

Hitachi Automotive Systems Europe GmbH, a corporation organized and existing under the laws of Germany and having its principal office at Tecnopark IV Lohstrasse 28 85445 Schwaig-Oberding Germany (hereinafter referred to as "HASE").

WHEREAS, HITACHI and HASE have made and entered into the AGREEMENT dated 1st day of December 2003 for the technical services related to the European automotive component business, which are provided by HASE to HITACHI (hereinafter referred to as the "Original Agreement").

WHEREAS, HITACHI and HASE are willing to renew the Original Agreement to set out the scope of its services and its conditions.

NOW, THEREFORE, both parties hereto agree on the following basic terms and conditions related to the services.

1. WORK TO BE CONSIGNED

HITACHI consigns HASE and HASE agrees to provide HITACHI, with technical services in European automotive business of HITACHI (hereinafter referred to as the "WORK TO BE CONSIGNED"). The WORK TO BE CONSIGNED include, but not limited to, the following items as listed below.

- (1) Support and assistance to HITACHI personnel in Europe in order to enable them to perform their duties smoothly and successfully.
- (2) Market research concerning the HITACHI products.
- (3) Collection of information concerning patents and technological improvements of automotive components and appliances.
- (4) Communication with HITACHI customers regarding technical matters of HITACHI products.
- (5) Procurement of samples of automotive components and appliances required by HITACHI, in principal, with the condition that the cost shall be reimbursed by HITACHI.
- (6) Investigation into the use of automotive components and appliances by dealer or consumer.
- (7) Analysis of the HITACHI products claimed from dealer or consumer.

- (8) Technical support related the HITACHI products sold to customers.
- (9) Technical consultation and reconciliation of the problems related to the HITACHI products.
- (10) Minor changes in design and application of the HITACHI products.
- (11) Gathering and analysis of field quality information related to the HITACHI products.

Provided, however, that the detail of the WORK TO BE CONSIGNED is set out in the applicable supplement agreement (s).

2. REPORTING

HASE shall provide HITACHI with reports concerning the WORK TO BE CONSIGNED at the time and/or at the intervals provided below:

- (1) The detail of report concerning the work consigned: As required by HITACHI
- (2) The report on the status of the activities undertaken for each of the items consigned and agreed upon: Monthly

3. COMPENSATION

- 3.1 During the term of this Agreement, HITACHI shall pay to HASE the monthly amount as separately agreed upon between the parties.
- 3.2 Payment of the monthly amount stipulated in Section 3.1 of this Agreement shall be made every three month for each three month period of services, by the final business day of every second month, in Euro, by telegraphic transfer to the bank account designated by HASE.
- 3.3 Upon request from HITACHI, HASE shall provide to HITACHI, without delay, written receipt of such payment.
- 3.4 If HASE requires any additional compensation to that stipulated in Section 3.1 of this Agreement, HITACHI agrees to pay HASE the additional compensation that will be mutually agreed upon between the parties.

4. TERM OF AGREEMENT

- 4.1 This Agreement shall become effective on the date first written above and continue to be effective to and including March 31, 2009.
- 4.2 After expiration of the term stipulated in Section 4.1 of this Agreement, this Agreement shall be automatically renewed annually for one year period, unless either of the parties expresses to the other party in writing its intention to terminate this Agreement by giving a 50days advance notice to the end of the initial period or each extended period.
- 4.3 If either party fails to perform, or materially breaches any provision of the Agreement ("Defaulting Party") the other party ("Non-defaulting Party") shall have the right to terminate this Agreement.

- 4.4 The Defaulting Party shall pay the Non-defaulting Party for actual damages as may be sustained by the Non-defaulting Party in any way as a result of the Defaulting Party's failure to perform or material breach of this Agreement, but shall not be liable for consequential damages (including loss of profits) sustained, or claimed by the Non-defaulting Party.
- 4.5 Both parties agree to terminate the Original Agreement with effect to the Effective Date, except the remaining obligations of each party under the Original Agreement.

5. SECRECY

- 5.1 "Confidential Information" shall mean technical and economic information, commercialization, marketing and research strategies provided by HITACHI and any results, and business information achieved in the course of performance of this Agreement.
- 5.2 HASE agrees to keep in confidence and shall not disclose any Confidential Information to any third party without prior written consent of HITACHI. HASE agrees to take all necessary and reasonable measures to prevent any Confidential Information from being disclosed to any third party.
- 5.3 The confidentiality obligation stipulated in Section 5.1 and 5.2 of this Agreement shall survive the expiration or termination of this Agreement for any cause.

6. Intellectually Property Rights

- 6.1 All inventions, patents, designs and processes relating to the services under Article 1 of this Agreement, made or acquired by HASE or its employees during the life of this Agreement, shall be forthwith assigned to HITACHI and shall thereupon become sole and exclusive property of HITACHI.
- 6.2 HASE represents that each of its employees has entered into an agreement that provides for assignment to HASE of all inventions made by said employees during the course of their employment.
- 6.3 HASE agrees that, if during the period of this Agreement, any of its employees shall make a discovery or invention relating or arising out of the services contracted for under Article 1 of this Agreement, HASE will promptly make the fact of such discovery known to HITACHI.
- 6.4 Upon the request of HITACHI, HASE agrees to use its best efforts to cause such employees to make application for letters patent. The application for letters patent shall be made at the ultimate expense of HITACHI, and through attorneys named by HITACHI; and it is mutually agreed that any and all expenses, including staff time and travel in connection with the preparation, filing, prosecution, assignment, and recording of such applications and payable by HITACHI. All such expenses incurred by HASE under this Article 6 shall be separately invoiced to and paid by HITACHI.

6.5 HITACHI hereby grants to HASE non-exclusive European marketing rights and non-exclusive manufacturing rights to all products developed by HASE resulting from technical service under this Agreement. Term of compensation for the aforementioned manufacturing rights shall be mutually determined by the parties to this Agreement at an appropriate future date.

7. Supply of Technical Information

7.1 No technical information shall be supplied between the parties without the approval of the Government of Japan, Germany, the United States of America and any other countries, if required.

7.2 HASE shall use its best efforts to ensure that all information furnished hereunder is free from inaccuracy and defect. If such information is found to be inaccurate or defective, it shall be the responsibility of HASE to cure all defects and provide remedial work and necessary replacements expeditiously upon the reasonable request of HITACHI.

8. Governing Law

8.1 Both parties shall settle any disputes arising from this Agreement in good faith.

8.2 This Agreement shall be governed by the Japanese laws and any disputes arising between the parties, which cannot be settled amicably, shall be submitted to a competent Japanese court in Tokyo, Japan.

9. ENTIRE AGREEMENT

This Agreement represents the entire agreement between the parties with respect to the subject matter thereof, and supersedes all communications, oral or written, between the parties on the subject.

IN WITNESS WHEREOF, each party hereto has caused this Agreement to be executed in duplicate in English, as of the date first above written, by their authorized officers or representatives.

Hitachi, Ltd., Automotive Systems

Hitachi Automotive Systems Europe GmbH

By: Konji Tabuchi
[Name] Konji Tabuchi
[Title] Executive Vice President & GM,
Sawa Works

Date: 04/21/2008

Date: 04/29/2008
By: Gerard Schmitz
[Name] Gerard Schmitz
[Title] General Manager

Date: 04/29/2008

HITOSHI KONNO
[Name] HITOSHI KONNO
[Title] Deputy General Manager

(Translation)

Certificate of All Historical Matters

2520 Takaba, Hitachinaka-shi, Ibaraki-ken

Hitachi Automotive Systems, Ltd.

Corporate No. 0507-01-001887

Company Name	Hitachi Automotive Systems, Ltd.
Head Office	2520 Takaba, Hitachinaka-shi, Ibaraki-ken
Means of Public Notice	Public notice from the Company shall be given by way of publication in the Official Gazette.
Date of Incorporation	July 1, 2009
Business Purposes	<ol style="list-style-type: none"> 1. Development, manufacture, sales and services of automotive components, and transportation and industrial machines and systems 2. Development, manufacture, sales and services of working machines, molds, jigs, tools and other production machines 3. Development, manufacture, sales and services of electronic components, devices, electronic circuits and electrical machines 4. Services of information communication, information processing and information provision 5. Development, manufacture, sales and services of medical machines and other business-use machines 6. Contracting of construction works such as machine installation work, electrical work, and building work 7. Labor dispatch businesses 8. Purchase, sale, lease, brokerage and management of real estates 9. Security and cleaning businesses 10. Operation of translation, education,

Reference No.: ㊦ 070712

*Underline indicates cancellation.

	<p>sports, cultural and lodging facilities and related shops, and travel businesses</p> <p>11. Businesses relating to non-life insurance agency and life insurance sales</p> <p>12. Leasing of office equipment and supplies, and printing and advertising businesses</p> <p>13. All businesses incidental to the above</p>
Total Number of Authorized Shares	1,200,000 shares
Total Number of Issued/Outstanding Shares, and their Classes and Numbers	Total number of issued/outstanding shares: 300,000 shares
Amount of Capital	15,000,000,000 Japanese yen
Provisions Relating to Restriction on Transfer of Shares	Approval of the Board of Directors shall be required for acquisition by transfer of any of the shares issued by the Company.
Matters Relating to Board Members	Director: Kunihiko Ohnuma
	Director: Yasuhiko Honda
	Director: Masaaki Fujisawa
	Director: Koji Yamanokawa
	Director: Kenji Tabuchi
	Director: Kazumichi Fujimura
	Director: Masafumi Yuhara
	Director: Kazumasa Kinguchi
	Director: Taiji Hasegawa
	Director: Tatsuhiko Izumi
	Representative Director: Kunihiko Ohnuma Address: 4-15-20, Okubo-cho, Hitachi-shi, Ibaraki-ken
	Corporate Auditor: Soh Suzuki
	Corporate Auditor (external auditor): Seiichiro Kizumino
	Corporate Auditor (external auditor): Shinichi Hiraoka
Accounting Auditor: ShinNihon LLC	
Matter Relating to Status as Company with Board of	Company with the Board of Directors

Directors	
Matter Relating to Status as Company with Corporate Auditors	Company with Corporate Auditors
Matter Relating to Status as Company with Board of Corporate Auditors	Company with Board of Corporate Auditors
Matter Relating to Status as Company with Accounting Auditor	Company with Accounting Auditor
Matter Relating to Registration Record	Established by division from Hitachi, Ltd. 1-6-6, Marunouchi, Chiyoda-ku, Tokyo Registered on July 1, 2009

I hereby certify that this is a complete record of all entries recorded on the register except for those that have been closed.

July 7, 2009

Mito Legal Affairs Bureau Hitachinaka Branch

Registrar: Haruo Nemoto (seal)

26 October 2016

Supplement Agreement No.2-1

This Supplement Agreement No.2-1 is made and entered into 1st day of October 2016, by and between Hitachi Automotive Systems Europe GmbH (“(HIAMS)EU”) and Hitachi Automotive Systems, Ltd. (“HIAMS”) in connection with the TECHNICAL SERVICES AGREEMENT dated 1st day of April 2008 between the parties (“the Basic Agreement”).

1. Both parties have agreed to the WORK TO BE CONSIGNED specified in Article 1 of the Basic Agreement, the monthly amount specified in Section 3.1 of the Basic Agreement and other condition, for the services provided as follows;

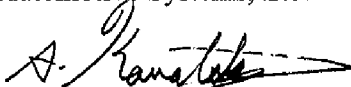
- (1) Product: ERF Suspension System
- (2) Duration: From October 1, 2016 to March 31, 2017
- (3) Total monthly amount: Euro **247,880** per month
- (4) The detail of the WORK TO BE CONSIGNED: see attached **Appendix 1**

In case of significant change in background of the services, both parties may discuss upon request of each party and agree to change the conditions above in writing.

2. Both parties have agreed that (HIAMS)EU shall provide HIAMS the monthly report as specified in Section 2 (2) of the Basic Agreement within 30 day from each month period, for the service under this Supplement Agreement No.2-1.
3. Unless otherwise agreed between the parties, any terms and conditions of the Basic Agreement shall be applied except for the conditions hereof.
4. Unless otherwise agreed between the parties, this Supplement Agreement No.2-1 shall be effective from the date first written above until March 31, 2017, provided, however, that any terms and conditions of the Basic Agreement shall remain in effect after the termination hereof.

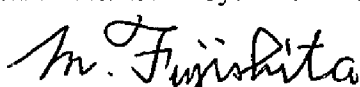
Each party hereto has caused this Supplement Agreement No.2-1 to be executed in duplicate by its authorized officers or representatives.

Hitachi Automotive Systems, Ltd.

By: 
 [Name] ATSUSHI KAWABATA
 [Title] Vice President, Executive Officer
 CTO & General Manager, Technology Development
 Division

Date: Nov. 24. 2016

Hitachi Automotive Systems Europe GmbH

By: 
 [Name] MASAKATSU FUJISHITA
 [Title] European Executive Vice President

Date: Dec. 01. 2016

Appendix 1 to Supplement Agreement No. 2-1

1 Project ERF Suspension

Required man-hour / month	Total Project Costs
<u>Hrs</u> 2560	<u>EUR</u> 247,880 /month

Schedule: From 1 October 2016 to 31 March 2017

Products: ERF suspension system

Reason: To develop and research key components of ER suspension system
(HV-box, ER fluid, and damper mechanics applied for ERF suspension system)

Working Package:

- To support defining system architecture jointly with HIAMS.
- To manufacture latest design of HV-Box (Which is called "CarCon6.5").
- To improve quality of HV-Box. (Hardware and software of "CarCon6.5")
- To develop next generation of HV-Box jointly with HIAMS. (Hardware and Software)
- To research ER technology
- To improve ER fluid's characteristics
- To develop and manufacture prototype ER fluid.
- To evaluate and control quality of ER fluid.

Note: HV-Box is short for High Voltage box, which generates high voltage and provide the voltage to damper.

ER fluid is short for Electro Rheological fluid.

Total costs for all Projects for the term from October 2016 to end March 2017:

EUR **247,880 /month**

(HIAMS)EU Invention Disclosure (FORM A)

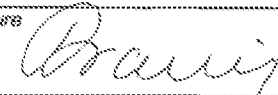
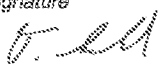
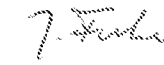
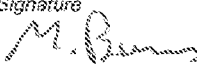
(HIAMS)EU Confidential (when completed)

Instructions:

Attach typewritten or computer-printed pages that provide all the information requested below. Provide all information requested to the best of your knowledge. Consult your Patent Administrator, if necessary, for further details on completion of an Invention Disclosure.

Title of the Invention <small>(Short and descriptive)</small>	High Voltage Safety Device with Ground Detection
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(HIAMS)EU Employed Inventor(s) (including full time, part time and contract employees)
(List the primary inventor first. List Non-(HIAMS)EU employed inventors in the section of "Non-(HIAMS)EU Employed Inventors")

<i>Full Name (Print or Type)</i> Manfred Krämer (30%)	<i>Full Name in Kanji character (if Japanese)</i>	
<i>Home Address</i> Am Oberen Bucketal 3, 64853 Otzberg	<i>Country of Citizenship</i> D	
<i>Signature</i> 	<i>Date</i> 31.3.2016	
<i>Full Name (Print or Type)</i> Timo Arnold (20%)	<i>Full Name in Kanji character (if Japanese)</i>	
<i>Home Address</i> Alter Weg 6, 69483 Wald-Michelbach	<i>Country of Citizenship</i> D	
<i>Signature</i> 	<i>Date</i> 31.3.2016	
<i>Full Name (Print or Type)</i> Dr. Joachim Funke (30%)	<i>Full Name in Kanji character (if Japanese)</i>	
<i>Home Address</i> Jakobstr. 12, D-64853 Otzberg	<i>Country of Citizenship</i> D	
<i>Signature</i> 	<i>Date</i> 31.3.16	
<i>Full Name (Print or Type)</i> Matthias Bruns (20%)	<i>Full Name in Kanji character (if Japanese)</i>	
<i>Home Address</i> Von-Frerichs-Str. 6, 65191 Wiesbaden	<i>Country of Citizenship</i> D	
<i>Signature</i> 	<i>Date</i> 1.4.16	

Please Note:

We have to pass the personal information of the inventor(s) filled in this form to (HIAMS) in Japan and our patent agents, and they may forward it on to other patent attorneys and to relevant patent offices anywhere in the world for the purposes of obtaining patents for the invention. The information will be published if an application is filed. By signing this form, the inventor agrees to such use of his/her personal information, including the transfer of such information out of the European Union.

Please remember to attach application for Non-European Patent Applications sheet (Form B).

Primary Inventor	(HIAMS)EU Manager	(HIAMS)EU Administrator (Maekawa-san)	(HIAMS)EU General Manager

Comments (deadline, Filing type, etc.)

Deadline :
Filing Type : EPO or German National application

(HIAMS)EU Reference Number.
(Assigned by (HIAMS)EU)

(HIAMS)EU Invention Disclosure (FORM A)*(HIAMS)EU Confidential (when completed)*

- Page 2 -

Non-(HIAMS)EU Employed Inventor(s):		
Full Name (Print or Type) (%)	Home Address	Country of Citizenship
Company Name/Division	Business Address	
Full Name in Kanji character (if Japanese)	E-mail	Mobile Phone Number
Full Name (Print or Type) (%)	Home Address	Country of Citizenship
Company Name/Division	Business Address	
Full Name in Kanji character (if Japanese)	E-mail	Mobile Phone Number
Full Name (Print or Type) (%)	Home Address	Country of Citizenship
Company Name/Division	Business Address	
Full Name in Kanji character (if Japanese)	E-mail	Mobile Phone Number
Full Name (Print or Type) (%)	Home Address	Country of Citizenship
Company Name/Division	Business Address	
Full Name in Kanji character (if Japanese)	E-mail	Mobile Phone Number

Sponsor(s): (List major sponsor first)	(Usually HIAMS-JP)
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Questions:	Answers:
1 <Joint invention> (共同発明) (a) Did this invention arise from work that is funded in whole or in part by another company or any entity other than Hitachi or (HIAMS)? (b) If so, please identify the research contract and the entity sponsoring the program.	No
2 <Disclosure plan to the public> (公開予定) (a) Are you aware of any intent to disclose or communicate the subject of this invention to anyone outside of (HIAMS)EU or to the general public in the near future? (b) If so, please explain and give approximate date of disclosure.	No
3 <The previous patents> (過去出願との関係) (a) Does this invention relate to any other (i) issued patents, (ii) pending patent applications, or (iii) previously submitted invention disclosures, of (HIAMS)EU or (HIAMS)? (b) If so, please identify. If this is an improvement on an earlier invention, please indicate.	Yes: DE 10 2015 007 979.4

I. Problem Solved by the Invention (解決すべき課題)

Direction: Briefly describe the problem(s) solved by this invention or the requirement that led to the invention. Discuss the need for the invention, and identify the problems of the closest prior technology that the invention solves.

For devices using high voltage supply, e.g. adjustable dampers on the basis of electrorheological fluids, a high voltage amplifier (1) is attached to the device (8) to supply the necessary voltage for activation. It is however necessary to assure that no high voltage (HV) is produced at the HV Connector (3) when the amplifier is not attached to the device, as this could cause injury to any personnel handling the amplifier. The invention provides the necessary hardware and logical circuit to attain this.

II. Summary of the Invention (発明概要)

Direction: Summarise the invention in general terms. State the novel feature(s) of the invention which solve(s) the problem(s) identified in Section I. Set forth the basic idea of the invention.

The invention consists of 2 electronic hardware circuits and corresponding software. One of the hardware circuits can disable the HV hard wired, the other circuit enables a CPU to disable the HV. The invention causes an immediate cessation of high voltage generation (5) as soon as the amplifier (1) is disconnected from the device (8). This safety-relevant function is given the highest priority by the internal circuit (6) and cannot be circumvented by the main control circuit (7). This function is made fail-safe and robust by implementing discrete analog components and situating this circuit parallel to the main remaining circuit.

III. Prior Art (公知技術)

Direction: Discuss any prior art or previous approach to the solution of the problem known to the inventor, including disadvantages and difficulties in past practice. Identify all pertinent literature (e.g., published patents or patent applications, published articles or prior uses) and other public disclosures of which you are aware. Briefly indicate how the invention is different than the listed prior art.

No comparable prior art HV safety function known to inventors.

IV. Detailed Description (具体的な実施形態、図面の説明等)

Direction: Describe the specifics of the invention. Use drawings, flow charts, block diagrams, schematics, tables, formulas, test results, etc. (free from Hitachi codes, abbreviations, and jargon) as appropriate. Provide a written description of each component or step in every figure or flow chart. Include a broad description, preferred embodiments and specific examples. List the advantage(s) over the prior technology that the invention provides.

Besides the HV-pin (3), there are two ground contact areas (2),(4) at the interface between high voltage amplifier and the device, for example the shock absorber housing. These contacts are connected electrically with the device, e.g. the housing of the shock absorber. If the HV amplifier is incorrectly mounted or removed from the shock absorber, the HV generation is stopped as soon as one of the ground contact points is interrupted. Ideally, the mechanical layout of the individual contacts is such that first the ground detection contact (2) is interrupted, then the HV-Pin (3) and finally the HV ground contact (4) are disconnected. This assures that any residual capacitive charges in HV amplifier and device, e.g. shock absorber, can be rapidly and safely discharged. By use of a suitable mechanical design, it can be assured that the HV-Pin (3) is accessible only after the ground detection contact has been interrupted.

The HV-Ground-Contact (4) is the actual grounding contact through which the high voltage load current flows from the shock absorber back through the amplifier (1). No load current flows through the Ground-Detection-Contact (2). When both ground contacts (2),(4) are connected to the device (8), then the Ground-Detection-Contact (2) is pulled to the same potential as the HV-Ground-Contact and supplies a low-signal (zero volts) to the two circuits (6) and (7). If the amplifier (1) is removed from the device (8), then the closed loop between HV-Ground Contact and Ground-Detection-Contact is interrupted. An internal pull-up resistor

(9) then increases the potential in the Ground-Detection-Contact circuit to a high-level. This signal leads directly to an interruption of the HV-Generation-Circuit, stopping high voltage generation. In parallel, this signal is fed to the Control-Unit (7) which implements a software-driven shutdown of the high voltage.

With the logical NOR circuit (6) it is assured that the Ground-Detection-Contact is sensed both via hardware and software and both can immediately shut down the high voltage generation.

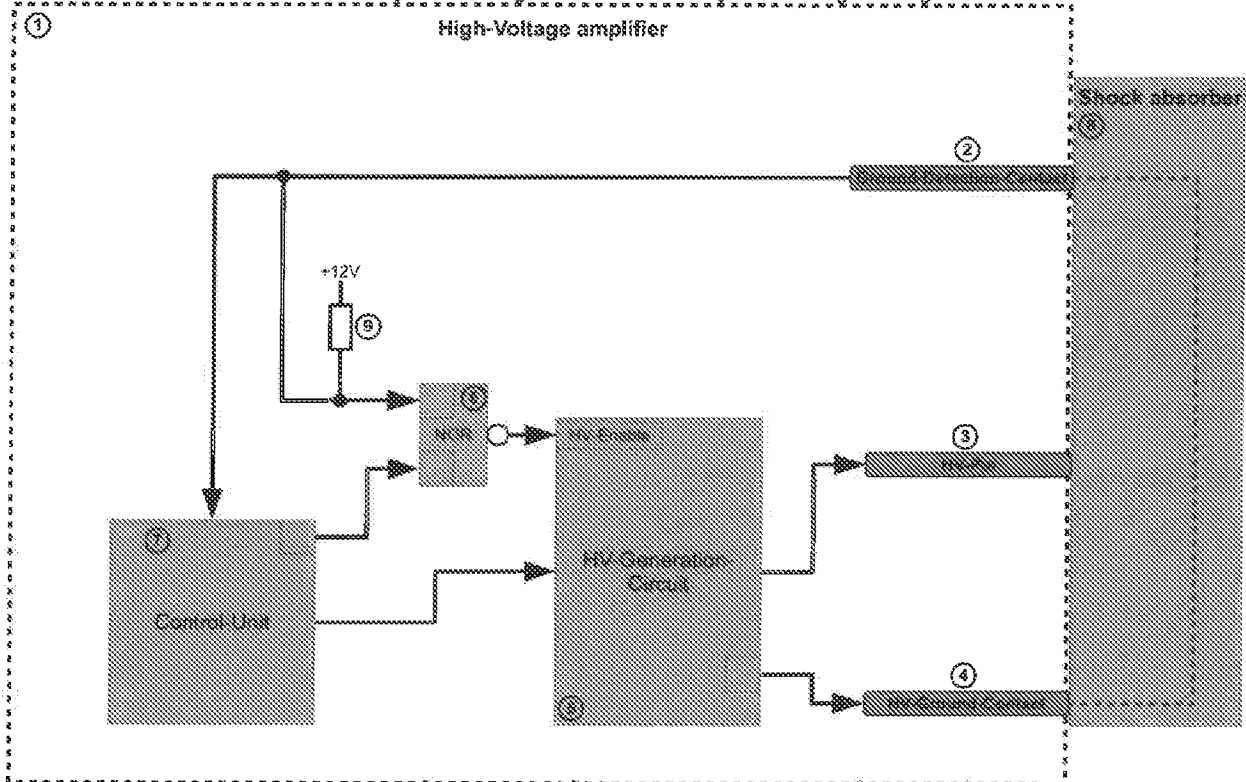
V. Use of the Invention (発明の製品への適用形態)

Direction: Indicate one or more uses for the invention. Note all plans, if any, for exploiting the invention commercially.

This invention is implemented in the HV-Box which is planned for future semi-active suspension systems based on electrorheological fluids.

VI. Drawings (図面 : 発明関連事項は図面化必須)

Direction: Reference signs not mentioned in the detailed description in Section IV may not appear in the drawings and vice versa. The same features when denoted by reference signs must be denoted by the same signs throughout the disclosure.



VII. Main Claim (主クレーム)

Direction: please make the main claim which composes the essential elements to fulfil the invention feature.

1. A ground detection for high voltage amplifiers, comprising:
 a high voltage amplifier which can be connected to an HV driven device, with the following interfaces:
 an HV-pin;
 an HV-Ground-Contact;
 an HV-Detection-Contact;
 whereby an internal circuit layout within the high voltage amplifier triggers a shut-down of high voltage generation as soon as the Ground-Detection-Contact has a different potential to the HV-Ground-Contact.
 whereby this circuit displays a redundancy by implementing a logical NOR-gate for hardware and software triggering of the shutdown.
 whereby the housing of the HV driven device provides the necessary electrical connection between the HV-Ground-Contact and the HV-Detection-Contact
 whereby the HV-Ground-Contact provides contact when HV-Pin and HV-Detection-Contact already don't provide contact,
 whereby the HV-Detection-Contact loses contact before the HV-Pin loses contact.

***** End of the Invention Disclosure *****

**Vereinbarung über
Arbeitnehmererfindungen**

(nachfolgend "VERTRAG")

**Agreement on
Employee Inventions**

(hereinafter "Agreement")

zwischen/between

Krämer, Manfred, Dipl.-Ing.

nachfolgend/hereinafter

"ERFINDER"

"Inventor"

und/and

Hitachi Automotive Europe GmbH

(nachfolgend/hereinafter: "HIAMS-EU")

betreffend die Erfindermeldung: / regarding the invention disclosure:

- DE 101 10 609 2 „Hochspannungsnetzteil / high-voltage power supply“
- DE 10 2006 006 482.8 „geregeltes aktives-passives Schwingungs-absorbtionsgerat mit Energieruckgewinnung für Zweirader / Controlled, active-passive vibration absorption device with energy recovery for two-wheelers“
- EU-ERF-2016004 "High voltage Safty Device with Ground Detection"
- EU-ERF-2016005 "ER Fluid temperature through current measurment"
- EU-ERF-2016007 "Detection of arc faults for use in an electrorheological damper"
- EU-ERF-2016013 "Using a constant frequency flyback controller IC as quasiresonance flyback controller"

ERFINDER und HIAMS-EU, nachfolgend einzeln auch "**Partei**" und zusammen die "**Parteien**" genannt

Inventor and HIAMS-EU hereinafter individual-ly referred to as "**Party**" and together as "**Parties**"

PRÄAMBEL

Der **ERFINDER** ist Arbeitnehmer bei HIAMS-EU, und ist **ERFINDER** bzw. Miterfinder der in diesem **VERTRAG** spezifizierten **ERFINDUNG**

Soweit die **ERFINDERRECHTE** nicht bereits gesetzlich oder vertraglich, z.B. durch Inanspruchnahme oder Ablauf der Viermonatsfrist gemäß § 6 Abs. 2 ArbZG an HIAMS-EU übergegangen sind, beabsichtigen die **PARTEIEN** mit diesem **VERTRAG**, diese Rechte auf HIAMS-EU überzuleiten

HIAMS-EU möchte mit diesem Vertrag den **ERFINDER** für seinen Beitrag zu HIAMS-EU Innovationskraft und die vorgenannte Übertragung belohnen und vergüten, sowie jegliche etwaigen Ansprüche des **ERFINDERS** aus oder im Zusammenhang mit der **ERFINDUNG** abschließend regeln. Hierzu einigen sich die **PARTEIEN** auf eine angemessene Pauschalvergütung.

Dies vorausgeschickt, schließen die **PARTEIEN** den folgenden **VERTRAG**:

**Artikel I.
Definitionen**

(1) "**Erfindung**" meint die Erfindung(en), die in der oben in Bezug genommenen Erfindungsmeldung offenbart ist/sind

(2) "**Erfinderrechte**" meint alle weltweiten Rechte an und im Zusammenhang mit der **ERFINDUNG**, einschließlich (ohne einzuschränken) den Rechten an der **ERFINDUNG**, den Rechten die aus der **ERFINDUNG** erwachsen, wie beispielsweise dem Recht auf ein Patent, Rechte an Schutzrechten und Schutzrechtsanmeldungen hinsichtlich der **ERFINDUNG** und sämtliche zwischenzeitlich aus der Inhaberschaft der vorgenannten Rechte etwaig entstandenen Rechte

RECITALS

Whereas, Inventor is an employee of HIAMS-EU, and is inventor or joint inventor of the Invention specified in this Agreement

Whereas, if and to the extent the Inventor Rights have not already been transferred to HIAMS-EU by virtue of law or contract, e.g. by claiming the Invention or expiration of the four-months term pursuant to Section 6 (2) Employee Invention Act, the Parties by this Agreement intend to transfer the Inventor Rights to HIAMS-EU

Whereas, by means of this Agreement HIAMS-EU wishes to reward Inventor for his/her contribution to HIAMS-EU' innovative strength and to compensate him/her for the above assignment, as well as to finally settle Inventor's entire claims which may arise out of or relate to the Invention. To this end, the Parties agree on a reasonable lump-sum remuneration

Now, Therefore, in consideration of the foregoing, the Parties agree as follows

**Clause I
Definitions**

(1) "**Invention**" shall mean the invention(s) disclosed in the invention disclosure referenced above.

(2) "**Inventor Rights**" shall mean any and all worldwide rights to and in connection with the Invention, including (without limitation) the rights to the Invention and any rights arising from the Invention, such as for example the right to a patent, rights to protective rights or applications for protective rights regarding the Invention and any and all rights that may have arisen from ownership of the aforementioned rights in the meantime

**Artikel II.
Übertragung
aller Rechte und Verzicht**

(1) Der **ERFINDER** überträgt hiermit an **HIAMS-EU** alle **ERFINDERRECHTE**, die noch nicht an **HIAMS-EU** wirksam übertragen wurden, oder originaler bei **HIAMS-EU** entstanden sind. **HIAMS-EU** nimmt diese Übertragung an.

(2) Der **ERFINDER** verzichtet hinsichtlich der **ERFINDUNG** auf seine etwaigen Rechte aus den §§ 13 (1), 14, 15 (1) und 16 ArbZG. **HIAMS-EU** erklärt sich mit dem Verzicht einverstanden.

(3) Der **ERFINDER** verzichtet hinsichtlich der **ERFINDUNG** weiterhin auf etwaige zukünftige Ansprüche auf Anpassung der Vergütungsregelung aufgrund geänderter Umstände oder aufgrund eines herausragenden Nutzens der Erfindung für **HIAMS-EU**, z.B. gemäß § 12 (6) ArbZG. **HIAMS-EU** erklärt sich mit dem Verzicht einverstanden.

(4) Der Verzicht nach Abs. 2 und Abs. 3 soll auch dann bestehen bleiben, wenn Umstände bestehen oder sich ergeben sollten, die einer oder beiden **PARTEIEN** bei Abschluss dieses **VERTRAGES** nicht bekannt waren.

**Artikel III.
Vergütung des ERFINDERS**

(1) Die Vergütung für die **ERFINDUNG** in Anerkennung der Erfindungsleistung und die Übertragung der **ERFINDERRECHTE** beträgt einmalig **€ 500,00** (in Worten: funfhundert Euro).

(2) Als Vergütung für den Verzicht gemäß Artikel II (2) dieses **VERTRAGES** zahlt **HIAMS-EU** an den **ERFINDER** weiterhin einen einmaligen Betrag in Höhe von **€ 300,00** (in Worten: dreihundert Euro).

(3) Den Verzicht auf ein etwaiges Anpassungsrecht gemäß Art. II (3) vergütet **HIAMS-EU** mit einer einmaligen pauschalen Zahlung in Höhe von **€ 50,00** (in Worten: funzig Euro).

**Clause II
Assignment of
all Rights and Waiver**

(1) The Inventor hereby assigns to **HIAMS-EU** any and all Inventor Rights to the extent they have not yet been effectively assigned to **HIAMS-EU**, or have originated in **HIAMS-EU**. **HIAMS-EU** hereby accepts the assignment.

(2) With regard to the Invention, Inventor hereby waives his/her rights pursuant to Sections 13 (1), 14, 15 (1) and 16 Employee Inventions Act. **HIAMS-EU** agrees to the waiver.

(3) The Inventor furthermore waives with regard to the Invention his/her right to a future adjustment of the remuneration due to changed circumstances or where the invention conveys outstanding benefits to **HIAMS-EU**, e.g. pursuant Section 12 (6) Employee Inventions Act. **HIAMS-EU** agrees to the waiver.

(4) The waiver pursuant paragraphs (2) and (3) is agreed to be valid even if circumstances exist or should arise that were unknown to one Party or both Parties at the time of the Agreement.

**Clause III
Remuneration of the Inventor**

(1) The remuneration for the Invention in acknowledgement of the achievement and the assignment of the Inventor Rights is paid in a lump sum of **€ 500.00** (in words: five hundred euros).

(2) In consideration of the waiver pursuant to Clause II (2) of the Agreement, **HIAMS-EU** pays the Inventor a one-time remuneration of **€ 300.00** (in words: three hundred euros).

(3) **HIAMS-EU** compensates the waiver of a potential right to adjustments pursuant to Clause II (3) with a lump sum payment of **€ 50.00** (in words: fifty euros).

(4) Die PARTEIEN sind sich darüber einig, dass mit den vorgenannten Vergütungen alle Ansprüche des ERFINDERS hinsichtlich der ERFINDERRECHTE vollständig abgegolten sind, und keine weitergehenden Vergütungsansprüche des ERFINDERS gegen HIAMS-EU bestehen, insbesondere nicht aufgrund von § 9 ArbEG oder anderer Vorschriften des Arbeitnehmererfindergesetzes oder eines anderen Gesetzes. Dies soll selbst für den Fall gelten, dass die ERFINDUNG, die der ERFINDER gemacht hat, im Umfang tatsächlich weitergehender war als in der Erfindungsmeldung beschrieben. Entsprechend sind weitergehende Ansprüche des ERFINDERS auf eine Vergütung für die ERFINDUNG und deren Nutzung sowie für die Verzichte gemäß Artikel II (2) und (3) abbedungen.

Artikel IV. Vertraulichkeit

(1) Der ERFINDER ist verpflichtet, diesen VERTRAG und seine Bedingungen vertraulich zu behandeln, d.h. insbesondere weder seine Existenz noch seinen Inhalt gegenüber Dritten zu offenbaren, insbesondere nicht gegenüber anderen Mitarbeitern von HIAMS-EU und/oder etwaigen Miterfindern. Der ERFINDER ist nur berechtigt, diesen VERTRAG Dritten gegenüber offenzulegen, wenn dies zur Durchsetzung von Rechten des ERFINDERS aus diesem VERTRAG unabdingbar ist.

(2) HIAMS-EU ist unbeschränkt berechtigt, diesen VERTRAG Dritten gegenüber zu offenbaren.

Artikel V. Schlussbestimmungen

(1) Dieser VERTRAG unterliegt deutschem materiellem Recht unter Ausschluss des Übereinkommens der Vereinten Nationen über Verträge über den internationalen Warenkauf (CISG). Ausschließlicher Gerichtsstand für alle Auseinandersetzungen, die aus oder im Zusammenhang mit diesem VERTRAG oder späteren Änderungen dieses VERTRAGES entstehen, ist Düsseldorf, Deutschland.

(4) The Parties agree that with the above remuneration, all claims of Inventor regarding the Inventor Rights are fully compensated and that there exist no further claims for remuneration by the Inventor against HIAMS-EU, particularly not based on Section 9 or other provisions of the Employee Inventions Act or any other laws. This shall apply even in the case that the Invention made by the Inventor was actually broader in scope than described in the notices of invention. Accordingly, further claims by the Inventor for remuneration for the Invention and its use as well as the waivers according to Clause II (2) and (3) are excluded.

Clause IV Confidentiality

(1) The Inventor is obligated to keep this Agreement and its provisions confidential, i.e. in particular to not disclose its existence or its content to any third parties, in particular not to any other employees of HIAMS-EU and/or any joint inventors. The Inventor may only disclose this Agreement to third parties if this is indispensable to assert the Inventor's rights arising from this Agreement.

(2) HIAMS-EU is authorized to disclose this Agreement to third parties without restrictions.

Clause V Miscellaneous

(1) This Agreement is governed by the substantive laws of Germany under exclusion of the UN Convention on Contracts for the International Sale of Goods (CISG). The courts of Düsseldorf, Germany shall have exclusive jurisdiction for any and all disputes arising from or in connection with this Agreement or subsequent amendments thereof.

(2) Änderungen und Zusätze zu diesem VERTRAG bedürfen der Schriftform und müssen ausdrücklich als solche gekennzeichnet sein. Dies gilt auch für einen Verzicht auf das Schriftformerfordernis.

(2) Amendments and additional protocols to this Agreement must be in writing; they must be expressly marked as such. This also applies to a waiver of this clause on the written form.

(3) Sollten eine oder mehrere Bestimmungen dieses VERTRAGES ganz oder teilweise unwirksam oder nichtig sein oder werden, oder sollte der VERTRAG eine Regelungslücke enthalten, soll dieser VERTRAG im Übrigen nicht nur im Zweifel, sondern stets wirksam bleiben. Anstelle einer unwirksamen, nichtigen oder fehlenden Bestimmung soll eine Bestimmung treten, die dem angestrebten wirtschaftlichen Ergebnis am nächsten kommt.

(3) Should any provision of the Agreement be or become fully or partly unenforceable or invalid, or should this Agreement contain a gap, this Agreement shall otherwise remain valid, not only in case of doubt, but always. The Parties undertake to substitute any unenforceable, invalid or missing provision by such valid provisions coming closest to the envisaged commercial purpose.

(4) Die deutsche Fassung dieses VERTRAGES ist bindend.

(4) The German version of this Agreement is binding.

Erfinder:

Hitachi Automotive Systems Europe GmbH

Darmstadt, 23.2.17
Ort, Datum / Place, Date

Schwaig-Oberding 22.02.2017

Manfred Krämer
vollständiger Name / full name

John J. Conlon

M. Krämer
Unterschrift/Signature

HITACHI AUTOMOTIVE SYSTEMS
EUROPE GMBH
[Signature]
Unterschrift/Signature

**Vereinbarung über
Arbeitnehmererfindungen**

(nachfolgend "VERTRAG")

**Agreement on
Employee Inventions**

(hereinafter "Agreement")

zwischen/between

Arnold, Timo

nachfolgend/hereinafter

"**ERFINDER**"

"**Inventor**"

und/and

Hitachi Automotive Europe GmbH

(nachfolgend/hereinafter. "**HIAMS-EU**")

betreffend die Erfindermeldung. / regarding the invention disclosure.

EU-ERF-2016001 "CAN communication for controlled damper"

EU-ERF-2016002 "Parallel high-voltage transformer and cascode control high capacity low resistance loadfull"

EU-ERF-2016004 "High voltage Safty Device with Ground Detection"

EU-ERF-2016005 "ER Fluid temperature through current measurment"

EU-ERF-2016006 "HV Cascode temperature estimation through current measurement"

EU-ERF-2016007 "Detection of arc faults for use in an electrorheological damper"

ERFINDER und HIAMS-EU, nachfolgend einzeln auch "**Partei**" und zusammen die "**Parteien**" genannt

Inventor and HIAMS-EU hereinafter individually referred to as "**Party**" and together as "**Parties**"

PRÄAMBEL

Der **ERFINDER** ist Arbeitnehmer bei HIAMS-EU, und ist **ERFINDER** bzw. Miterfinder der in diesem **VERTRAG** spezifizierten **ERFINDUNG**

Soweit die **ERFINDERRECHTE** nicht bereits gesetzlich oder vertraglich, z B durch Inanspruchnahme oder Ablauf der Viermonatsfrist gemäß § 6 Abs 2 ArbEG an HIAMS-EU übergegangen sind, beabsichtigen die **PARTEIEN** mit diesem **VERTRAG**, diese Rechte auf HIAMS-EU überzuleiten

HIAMS-EU möchte mit diesem Vertrag den **ERFINDER** für seinen Beitrag zu HIAMS-EU Innovationskraft und die vorgenannte Übertragung belohnen und vergüten, sowie jegliche etwaigen Ansprüche des **ERFINDERS** aus oder im Zusammenhang mit der **ERFINDUNG** abschließend regeln. Hierzu einigen sich die **PARTEIEN** auf eine angemessene Pauschalvergütung

Dies vorausgeschickt, schließen die **PARTEIEN** den folgenden **VERTRAG**.

Artikel I.
Definitionen

(1) "**Erfindung**" meint die Erfindung(en), die in der oben in Bezug genommenen Erfindungsmeldung offenbart ist/sind

(2) "**Erfinderrechte**" meint alle weltweiten Rechte an und im Zusammenhang mit der **ERFINDUNG**, einschließlich (ohne einzuschränken) den Rechten an der **ERFINDUNG**, den Rechten die aus der **ERFINDUNG** erwachsen, wie beispielsweise dem Recht auf ein Patent, Rechte an Schutzrechten und Schutzrechtsanmeldungen hinsichtlich der **ERFINDUNG** und sämtliche zwischenzeitlich aus der Inhaberschaft der vorgenannten Rechte etwaig entstandenen Rechte

RECITALS

Whereas, Inventor is an employee of HIAMS-EU, and is inventor or joint inventor of the Invention specified in this Agreement

Whereas, if and to the extent the Inventor Rights have not already been transferred to HIAMS-EU by virtue of law or contract, e g by claiming the Invention or expiration of the four-months term pursuant to Section 6 (2) Employee Invention Act, the Parties by this Agreement intend to transfer the Inventor Rights to HIAMS-EU

Whereas, by means of this Agreement HIAMS-EU wishes to reward Inventor for his/her contribution to HIAMS-EU' innovative strength and to compensate him/her for the above assignment, as well as to finally settle Inventor's entire claims which may arise out of or relate to the Invention. To this end, the Parties agree on a reasonable lump-sum remuneration

Now, Therefore, in consideration of the foregoing, the Parties agree as follows:

Clause I
Definitions

(1) "**Invention**" shall mean the invention(s) disclosed in the invention disclosure referenced above

(2) "**Inventor Rights**" shall mean any and all worldwide rights to and in connection with the Invention, including (without limitation) the rights to the Invention and any rights arising from the Invention, such as for example the right to a patent, rights to protective rights or applications for protective rights regarding the Invention and any and all rights that may have arisen from ownership of the aforementioned rights in the meantime.

**Artikel II.
Übertragung
aller Rechte und Verzicht**

(1) Der **ERFINDER** überträgt hiermit an **HIAMS-EU** alle **ERFINDERRECHTE**, die noch nicht an **HIAMS-EU** wirksam übertragen wurden, oder originar bei **HIAMS-EU** entstanden sind. **HIAMS-EU** nimmt diese Übertragung an.

(2) Der **ERFINDER** verzichtet hinsichtlich der **ERFINDUNG** auf seine etwaigen Rechte aus den §§ 13 (1), 14, 15 (1) und 16 ArbZG. **HIAMS-EU** erklärt sich mit dem Verzicht einverstanden.

(3) Der **ERFINDER** verzichtet hinsichtlich der **ERFINDUNG** weiterhin auf etwaige zukünftige Ansprüche auf Anpassung der Vergütungsregelung aufgrund geänderter Umstände oder aufgrund eines herausragenden Nutzens der Erfindung für **HIAMS-EU**, z.B. gemäß § 12 (6) ArbZG. **HIAMS-EU** erklärt sich mit dem Verzicht einverstanden.

(4) Der Verzicht nach Abs. 2 und Abs. 3 soll auch dann bestehen bleiben, wenn Umstände bestehen oder sich ergeben sollten, die einer oder beiden **PARTEIEN** bei Abschluss dieses **VERTRAGES** nicht bekannt waren.

**Artikel III.
Vergütung des **ERFINDERS****

(1) Die Vergütung für die **ERFINDUNG** in Anerkennung der Erfindungsleistung und die Übertragung der **ERFINDERRECHTE** beträgt einmalig **€ 500,00** (in Worten: funfhundert Euro).

(2) Als Vergütung für den Verzicht gemäß Artikel II (2) dieses **VERTRAGES** zahlt **HIAMS-EU** an den **ERFINDER** weiterhin einen einmaligen Betrag in Höhe von **€ 300,00** (in Worten: dreihundert Euro).

(3) Den Verzicht auf ein etwaiges Anpassungsrecht gemäß Art. II (3) vergütet **HIAMS-EU** mit einer einmaligen pauschalen Zahlung in Höhe von **€ 50,00** (in Worten: fünfzig Euro).

**Clause II
Assignment of
all Rights and Waiver**

(1) The Inventor hereby assigns to **HIAMS-EU** any and all Inventor Rights to the extent they have not yet been effectively assigned to **HIAMS-EU**, or have originated in **HIAMS-EU**. **HIAMS-EU** hereby accepts the assignment.

(2) With regard to the Invention, Inventor hereby waives his/her rights pursuant to Sections 13 (1), 14, 15 (1) and 16 Employee Inventions Act. **HIAMS-EU** agrees to the waiver.

(3) The Inventor furthermore waives with regard to the Invention his/her right to a future adjustment of the remuneration due to changed circumstances or where the invention conveys outstanding benefits to **HIAMS-EU**, e.g. pursuant Section 12 (6) Employee Inventions Act. **HIAMS-EU** agrees to the waiver.

(4) The waiver pursuant paragraphs (2) and (3) is agreed to be valid even if circumstances exist or should arise that were unknown to one Party or both Parties at the time of the Agreement.

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Remuneration of the Inventor**

(1) The remuneration for the Invention in acknowledgement of the achievement and the assignment of the Inventor Rights is paid in a lump sum of **€ 500.00** (in words: five hundred euros).

(2) In consideration of the waiver pursuant to Clause II (2) of the Agreement, **HIAMS-EU** pays the Inventor a one-time remuneration of **€ 300.00** (in words: three hundred euros).

(3) **HIAMS-EU** compensates the waiver of a potential right to adjustments pursuant to Clause II (3) with a lump sum payment of **€ 50.00** (in words: fifty euros).

(4) Die PARTEIEN sind sich darüber einig, dass mit den vorgenannten Vergütungen alle Ansprüche des ERFINDERS hinsichtlich der ERFINDERRECHTE vollständig abgegolten sind, und keine weitergehenden Vergütungsansprüche des ERFINDERS gegen HIAMS-EU bestehen, insbesondere nicht aufgrund von § 9 ArbZG oder anderer Vorschriften des Arbeitnehmererfindergesetzes oder eines anderen Gesetzes. Dies soll selbst für den Fall gelten, dass die ERFINDUNG, die der ERFINDER gemacht hat, im Umfang tatsächlich weitergehender war als in der Erfindungsmeldung beschrieben. Entsprechend sind weitergehende Ansprüche des ERFINDERS auf eine Vergütung für die ERFINDUNG und deren Nutzung sowie für die Verzichte gemäß Artikel II (2) und (3) abgedungen.

Artikel IV. Vertraulichkeit

(1) Der ERFINDER ist verpflichtet, diesen VERTRAG und seine Bedingungen vertraulich zu behandeln, d.h. insbesondere weder seine Existenz noch seinen Inhalt gegenüber Dritten zu offenbaren, insbesondere nicht gegenüber anderen Mitarbeitern von HIAMS-EU und/oder etwaigen Miterfindern. Der ERFINDER ist nur berechtigt, diesen VERTRAG Dritten gegenüber offenzulegen, wenn dies zur Durchsetzung von Rechten des ERFINDERS aus diesem VERTRAG unabdingbar ist.

(2) HIAMS-EU ist unbeschränkt berechtigt, diesen VERTRAG Dritten gegenüber zu offenbaren.

Artikel V. Schlussbestimmungen

(1) Dieser VERTRAG unterliegt deutschem materiellem Recht unter Ausschluss des Übereinkommens der Vereinten Nationen über Verträge über den internationalen Warenkauf (CISG). Ausschließlicher Gerichtsstand für alle Auseinandersetzungen, die aus oder im Zusammenhang mit diesem VERTRAG oder späteren Änderungen dieses VERTRAGES entstehen, ist Düsseldorf, Deutschland.

(4) The Parties agree that with the above remuneration, all claims of inventor regarding the Inventor Rights are fully compensated and that there exist no further claims for remuneration by the Inventor against HIAMS-EU, particularly not based on Section 9 or other provisions of the Employee Inventions Act or any other laws. This shall apply even in the case that the Invention made by the Inventor was actually broader in scope than described in the notices of invention. Accordingly, further claims by the Inventor for remuneration for the Invention and its use as well as the waivers according to Clause II (2) and (3) are excluded.

Clause IV Confidentiality

(1) The Inventor is obligated to keep this Agreement and its provisions confidential, i.e. in particular to not disclose its existence or its content to any third parties, in particular not to any other employees of HIAMS-EU and/or any joint inventors. The Inventor may only disclose this Agreement to third parties if this is indispensable to assert the Inventor's rights arising from this Agreement.

(2) HIAMS-EU is authorized to disclose this Agreement to third parties without restrictions.

Clause V Miscellaneous

(1) This Agreement is governed by the substantive laws of Germany under exclusion of the UN Convention on Contracts for the International Sale of Goods (CISG). The courts of Düsseldorf, Germany shall have exclusive jurisdiction for any and all disputes arising from or in connection with this Agreement or subsequent amendments thereof.

(2) Änderungen und Zusätze zu diesem VERTRAG bedürfen der Schriftform und müssen ausdrücklich als solche gekennzeichnet sein. Dies gilt auch für einen Verzicht auf das Schriftformerfordernis.

(2) Amendments and additional protocols to this Agreement must be in writing; they must be expressly marked as such. This also applies to a waiver of this clause on the written form.

(3) Sollten eine oder mehrere Bestimmungen dieses VERTRAGES ganz oder teilweise unwirksam oder nichtig sein oder werden, oder sollte der VERTRAG eine Regelungslücke enthalten, soll dieser VERTRAG im Übrigen nicht nur im Zweifel, sondern stets wirksam bleiben. Anstelle einer unwirksamen, nichtigen oder fehlenden Bestimmung soll eine Bestimmung treten, die dem angestrebten wirtschaftlichen Ergebnis am nächsten kommt.

(3) Should any provision of the Agreement be or become fully or partly unenforceable or invalid, or should this Agreement contain a gap, this Agreement shall otherwise remain valid, not only in case of doubt, but always. The Parties undertake to substitute any unenforceable, invalid or missing provision by such valid provisions coming closest to the envisaged commercial purpose.

(4) Die deutsche Fassung dieses VERTRAGES ist bindend.

(4) The German version of this Agreement is binding.

Erfinder:

Hitachi Automotive Systems Europe GmbH

Darmstadt, 22.3.2017
Ort, Datum / Place, Date

Schwaig-Oberding 22.02.2017

Timo Arnold
vollständiger Name / full name

John J. Conlon

[Signature]
Unterschrift/Signature

[Signature]
Hitachi Automotive Systems Europe GmbH
Schwaig-Oberding
Unterschrift/Signature
D - 62640 Schwaig-Oberding

Vereinbarung über Arbeitnehmererfindungen

(nachfolgend: "VERTRAG")

Agreement on Employee Inventions

(hereinafter "Agreement")

zwischen/between

Funke, Joachim

nachfolgend/hereinafter

"ERFINDER"

"Inventor"

und/and

Hitachi Automotive Systems Europe GmbH

(nachfolgend/hereinafter: "HIAMS-EU")

betreffend die Erfindermeldung / regarding the invention disclosure

- DE 10 2010 051 872 7 „Schwingungsdampferanordnung / vibration-damper-arrangement“
- DE 10 2011 117 626 1 „Ventilanordnung für elektrorheologische Flüssigkeiten / Valve arrangement for electro rheological fluids“
- DE 10 2011 110 672 7 „Schwingungsdampfer für Fahrzeuge / Vibration damper for vehicles“
- DE 10 2014 011 541 0 „elektrorheologischer Aktor / electro rheological actor“
- DE 10 2013 000 978 2 „Ventilanordnung für elektrorheologische Flüssigkeiten / Valve arrangement for electro rheological fluids“
- DE 10 2013 013 488 9 „Hochspannungsanschlussvorrichtung für eine elektrorheologische Vorrichtung / High voltage connection for electro rheological systems“
- DE 10 2013 003 841 3 „Schwingungsdampfer / Vibration damper“
- DE 10 2015 003 176.7 „Kompositmaterial zur elektrorheologischen Änderung der Materialeigenschaften / Composite material for electro rheological change of material properties“
- DE 10 2015 006 721.4 „elektrorheologisches Bypassventil in Dampferdruckrichtung / electro rheological bypass valve in damper pressure direction“
- DE 10 2016 000 849.0 3 „Schwingungsdampfer / Vibration damper“
- DE 10 2015 007 979.4 „Hochspannungsanschlussvorrichtung für eine elektrorheologische Vorrichtung / High voltage connection for electro rheological systems“
- EU-ERF-2016001 "CAN communication for controlled damper"
- EU-ERF-2016003 "ER valve coating"
- EU-ERF-2016004 "High voltage Safty Device with Ground Detection"
- EU-ERF-2016005 "ER Fluid temperature through current measurment"
- EU-ERF-2016008 "ER valve hellix geometry"
- EU-ERF-2016009 "ER valve hellix production"
- EU-ERF-2016010 "CAN veriftcation and fall safe reaction by intelligent comer daveice"

- EU-ERF-2016011 "Electrode shape and production thereof"
- EU-ERF-2016012 "Anti-flashover sieve for ER damper"
- EU-ERF-2016014 "2 components Helix"

ERFINDER und HIAMS-EU, nachfolgend einzeln auch "**Partei**" und zusammen die "**Parteien**" genannt

Inventor and HIAMS-EU hereinafter individually referred to as "**Party**" and together as "**Parties**".

PRÄAMBEL

Der **ERFINDER** ist Arbeitnehmer bei HIAMS-EU, und ist **ERFINDER** bzw. **Miterfinder** der in diesem **VERTRAG** spezifizierten **ERFINDUNG**

Soweit die **ERFINDERRECHTE** nicht bereits gesetzlich oder vertraglich, z.B. durch Inanspruchnahme oder Ablauf der Viermonatsfrist gemäß § 6 Abs 2 ArbZG an HIAMS-EU übergegangen sind, beabsichtigen die **PARTEIEN** mit diesem **VERTRAG**, diese Rechte auf HIAMS-EU überzuleiten

HIAMS-EU möchte mit diesem Vertrag den **ERFINDER** für seinen Beitrag zu HIAMS-EU Innovationskraft und die vorgenannte Übertragung belohnen und vergüten, sowie jegliche etwaigen Ansprüche des **ERFINDERS** aus oder im Zusammenhang mit der **ERFINDUNG** abschließend regeln. Hierzu einigen sich die **PARTEIEN** auf eine angemessene Pauschalvergütung.

Dies vorausgeschickt, schließen die **PARTEIEN** den folgenden **VERTRAG**

Artikel I.
Definitionen

(1) "**Erfindung**" meint die Erfindung(en), die in der oben in Bezug genommenen Erfindungsmeldung offenbart ist/sind

(2) "**Erfinderrechte**" meint alle weltweiten Rechte an und im Zusammenhang mit der **ERFINDUNG**, einschließlich (ohne einzuschränken) den Rechten an der **ERFINDUNG**, den Rechten die aus der **ERFINDUNG** erwachsen, wie beispielsweise dem Recht auf ein Patent, Rechte an Schutzrechten und Schutzrechtsanmeldungen hinsichtlich der **ERFINDUNG** und sämtliche zwischenzeitlich aus der Inhaberschaft der vorgenannten Rechte etwaig entstandenen Rechte

RECITALS

Whereas, Inventor is an employee of HIAMS-EU, and is inventor or joint inventor of the Invention specified in this Agreement

Whereas, if and to the extent the Inventor Rights have not already been transferred to HIAMS-EU by virtue of law or contract, e.g. by claiming the Invention or expiration of the four-months term pursuant to Section 6 (2) Employee Invention Act, the Parties by this Agreement intend to transfer the Inventor Rights to HIAMS-EU

Whereas, by means of this Agreement HIAMS-EU wishes to reward Inventor for his/her contribution to HIAMS-EU' innovative strength and to compensate him/her for the above assignment, as well as to finally settle Inventor's entire claims which may arise out of or relate to the invention To this end, the Parties agree on a reasonable lump-sum remuneration

Now, Therefore, in consideration of the foregoing, the Parties agree as follows:

Clause I
Definitions

(1) "**Invention**" shall mean the invention(s) disclosed in the invention disclosure referenced above.

(2) "**Inventor Rights**" shall mean any and all worldwide rights to and in connection with the Invention, including (without limitation) the rights to the Invention and any rights arising from the Invention, such as for example the right to a patent, rights to protective rights or applications for protective rights regarding the Invention and any and all rights that may have arisen from ownership of the aforementioned rights in the meantime.

**Artikel II.
Übertragung
aller Rechte und Verzicht**

(1) Der ERFINDER überträgt hiermit an HIAMS-EU alle ERFINDERRECHTE, die noch nicht an HIAMS-EU wirksam übertragen wurden, oder originar bei HIAMS-EU entstanden sind HIAMS-EU nimmt diese Übertragung an

(2) Der ERFINDER verzichtet hinsichtlich der ERFINDUNG auf seine etwaigen Rechte aus den §§ 13 (1), 14, 15 (1) und 16 ArbEG. HIAMS-EU erklärt sich mit dem Verzicht einverstanden

(3) Der ERFINDER verzichtet hinsichtlich der ERFINDUNG weiterhin auf etwaige zukünftige Ansprüche auf Anpassung der Vergütungsregelung aufgrund geänderter Umstände oder aufgrund eines herausragenden Nutzens der Erfindung für HIAMS-EU, z B. gemäß § 12 (6) ArbEG HIAMS-EU erklärt sich mit dem Verzicht einverstanden.

(4) Der Verzicht nach Abs 2 und Abs 3 soll auch dann bestehen bleiben, wenn Umstände bestehen oder sich ergeben sollten, die einer oder beiden PARTEIEN bei Abschluss dieses VERTRAGES nicht bekannt waren

**Artikel III.
Vergütung des ERFINDERS**

(1) Die Vergütung für die ERFINDUNG in Anerkennung der Erfindungsleistung und die Übertragung der ERFINDERRECHTE beträgt einmalig € 500,00 (in Worten. funfhundert Euro)

(2) Als Vergütung für den Verzicht gemäß Artikel II (2) dieses VERTRAGES zahlt HIAMS-EU an den ERFINDER weiterhin einen einmaligen Betrag in Höhe von € 300,00 (in Worten. dreihundert Euro Euro).

(3) Den Verzicht auf ein etwaiges Anpassungsrecht gemäß Art II (3) vergütet HIAMS-EU mit einer einmaligen pauschalen Zahlung in Höhe von € 50,00 (in Worten. fünfzig Euro)

(4) Die PARTEIEN sind sich darüber einig, dass mit den vorgenannten Vergütungen alle

**Clause II
Assignment of
all Rights and Waiver**

(1) The Inventor hereby assigns to HIAMS-EU any and all Inventor Rights to the extent they have not yet been effectively assigned to HIAMS-EU, or have originated in HIAMS-EU. HIAMS-EU hereby accepts the assignment.

(2) With regard to the Invention, inventor hereby waives his/her rights pursuant to Sections 13 (1), 14, 15 (1) and 16 Employee Inventions Act HIAMS-EU agrees to the waiver

(3) The Inventor furthermore waives with regard to the Invention his/her right to a future adjustment of the remuneration due to changed circumstances or where the invention conveys outstanding benefits to HIAMS-EU, e g pursuant Section 12 (6) Employee Inventions Act. HIAMS-EU agrees to the waiver

(4) The waiver pursuant paragraphs (2) and (3) is agreed to be valid even if circumstances exist or should arise that were unknown to one Party or both Parties at the time of the Agreement

**Clause III
Remuneration of the Inventor**

(1) The remuneration for the Invention in acknowledgement of the achievement and the assignment of the Inventor Rights is paid in a lump sum of € 500.00 (in words five hundred euros)

(2) In consideration of the waiver pursuant to Clause II (2) of the Agreement, HIAMS-EU pays the Inventor a one-time remuneration of € 300.00 (in words: three hundred euros)

(3) HIAMS-EU compensates the waiver of a potential right to adjustments pursuant to Clause II (3) with a lump sum payment of € 50.00 (in words. fifty euros)

(4) The Parties agree that with the above remuneration, all claims of inventor regarding

Ansprüche des ERFINDERS hinsichtlich der ERFINDERRECHTE vollständig abgegolten sind, und keine weitergehenden Vergütungsansprüche des ERFINDERS gegen HIAMS-EU bestehen, insbesondere nicht aufgrund von § 9 ArbZG oder anderer Vorschriften des Arbeitnehmererfindergesetzes oder eines anderen Gesetzes. Dies soll selbst für den Fall gelten, dass die ERFINDUNG, die der ERFINDER gemacht hat, im Umfang tatsächlich weitergehender war als in der Erfindungsmeldung beschrieben. Entsprechend sind weitergehende Ansprüche des ERFINDERS auf eine Vergütung für die ERFINDUNG und deren Nutzung sowie für die Verzichte gemäß Artikel II (2) und (3) abbedungen.

**Artikel IV.
Vertraulichkeit**

(1) Der ERFINDER ist verpflichtet, diesen VERTRAG und seine Bedingungen vertraulich zu behandeln, d.h. insbesondere weder seine Existenz noch seinen Inhalt gegenüber Dritten zu offenbaren, insbesondere nicht gegenüber anderen Mitarbeitern von HIAMS-EU und/oder etwaigen Miterfindern. Der ERFINDER ist nur berechtigt, diesen VERTRAG Dritten gegenüber offenzulegen, wenn dies zur Durchsetzung von Rechten des ERFINDERS aus diesem VERTRAG unabdingbar ist.

(2) HIAMS-EU ist unbeschränkt berechtigt, diesen VERTRAG Dritten gegenüber zu offenbaren.

**Artikel V.
Schlussbestimmungen**

(1) Dieser VERTRAG unterliegt deutschem materiellem Recht unter Ausschluss des Übereinkommens der Vereinten Nationen über Verträge über den internationalen Warenkauf (CISG). Ausschließlicher Gerichtsstand für alle Auseinandersetzungen, die aus oder im Zusammenhang mit diesem VERTRAG oder späteren Änderungen dieses VERTRAGES entstehen, ist Düsseldorf, Deutschland.

the Inventor Rights are fully compensated and that there exist no further claims for remuneration by the Inventor against HIAMS-EU, particularly not based on Section 9 or other provisions of the Employee Inventions Act or any other laws. This shall apply even in the case that the Invention made by the Inventor was actually broader in scope than described in the notices of invention. Accordingly, further claims by the Inventor for remuneration for the Invention and its use as well as the waivers according to Clause II (2) and (3) are excluded.

**Clause IV
Confidentiality**

(1) The Inventor is obligated to keep this Agreement and its provisions confidential, i.e. in particular to not disclose its existence or its content to any third parties, in particular not to any other employees of HIAMS-EU and/or any joint inventors. The Inventor may only disclose this Agreement to third parties if this is indispensable to assert the Inventor's rights arising from this Agreement.

(2) HIAMS-EU is authorized to disclose this Agreement to third parties without restrictions.

**Clause V
Miscellaneous**

(1) This Agreement is governed by the substantive laws of Germany under exclusion of the UN Convention on Contracts for the International Sale of Goods (CISG). The courts of Düsseldorf, Germany shall have exclusive jurisdiction for any and all disputes arising from or in connection with this Agreement or subsequent amendments thereof.

(2) Änderungen und Zusätze zu diesem VERTRAG bedürfen der Schriftform und müssen ausdrücklich als solche gekennzeichnet sein. Dies gilt auch für einen Verzicht auf das Schriftformerfordernis.

(2) Amendments and additional protocols to this Agreement must be in writing; they must be expressly marked as such. This also applies to a waiver of this clause on the written form.

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(4) The German version of this Agreement is binding.

Erfinder:

Hitachi Automotive Systems Europe GmbH

Dornstach, 23.2.17

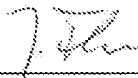
Ort, Datum / Place, Date

Schwaig-Oberding 22.02.2017

JOACHIM FUNKE

vollständiger Name / full name

John J. Conlon



Unterschrift/Signature



Unterschrift/Signature