

PATENT ASSIGNMENT

Electronic Version v1.1
Stylesheet Version v1.1

SUBMISSION TYPE:

NEW ASSIGNMENT

NATURE OF CONVEYANCE:

SECURITY AGREEMENT

CONVEYING PARTY DATA

Name	Execution Date
AVL Michigan Holding Corporation	06/13/2011
AVL Powertrain Engineering, Inc.	06/13/2011
AVL California Technology Center, Inc.	06/13/2011
AVL Test Systems, Inc.	06/13/2011
AVL Strategic Analytic Services, Inc.	06/13/2011
AVL Properties, Inc.	06/13/2011
AVL TSI Equipment, LLC	06/13/2011
AVL PEI Equipment, LLC	06/13/2011

RECEIVING PARTY DATA

Name:	RBS Citizens, N.A., as Agent
Street Address:	27777 Franklin Road
City:	Southfield
State/Country:	MICHIGAN
Postal Code:	48034

PROPERTY NUMBERS Total: 32

Property Type	Number
Patent Number:	7213449
Patent Number:	7191671
Patent Number:	7141090
Patent Number:	7055364
Patent Number:	7021128
Patent Number:	7000449
Patent Number:	6973818
Patent Number:	6964894
Patent Number:	6962090

501579141

PATENT
REEL: 026515 FRAME: 0042

OP \$1280.00 7213449

Patent Number:	6357327
Patent Number:	6823748
Patent Number:	6823268
Patent Number:	6742407
Patent Number:	6481299
Patent Number:	5522257
Patent Number:	6189517
Patent Number:	6119664
Patent Number:	5816228
Patent Number:	7191742
Patent Number:	5708201
Application Number:	11447490
Application Number:	11386911
Application Number:	11546048
Application Number:	60845271
Application Number:	11687325
Application Number:	11496804
Application Number:	12785071
PCT Number:	US1020876
PCT Number:	US1020732
PCT Number:	US1020736
Application Number:	12785095
PCT Number:	US1044633

CORRESPONDENCE DATA

Fax Number: (734)623-1625
Correspondence will be sent via US Mail when the fax attempt is unsuccessful.
 Phone: (734) 623-1678
 Email: nhudge@dickinsonwright.com
 Correspondent Name: Nora Hudge, Paralegal
 Address Line 1: Dickinson Wright, PLLC
 Address Line 2: 301 East Liberty, Suite 500
 Address Line 4: Ann Arbor, MICHIGAN 48104

ATTORNEY DOCKET NUMBER:	37390-034
NAME OF SUBMITTER:	Nora Hudge, Paralegal

Total Attachments: 14

PATENT
REEL: 026515 FRAME: 0043

source=AVL-RBS IP Security Agreement#page1.tif
source=AVL-RBS IP Security Agreement#page2.tif
source=AVL-RBS IP Security Agreement#page3.tif
source=AVL-RBS IP Security Agreement#page4.tif
source=AVL-RBS IP Security Agreement#page5.tif
source=AVL-RBS IP Security Agreement#page6.tif
source=AVL-RBS IP Security Agreement#page7.tif
source=AVL-RBS IP Security Agreement#page8.tif
source=AVL-RBS IP Security Agreement#page9.tif
source=AVL-RBS IP Security Agreement#page10.tif
source=AVL-RBS IP Security Agreement#page11.tif
source=AVL-RBS IP Security Agreement#page12.tif
source=AVL-RBS IP Security Agreement#page13.tif
source=AVL-RBS IP Security Agreement#page14.tif

PATENT AND TRADEMARK SECURITY AGREEMENT

This Patent and Trademark Security Agreement (this "Agreement") is entered into as of June 13, 2011 by and among AVL Michigan Holding Corporation, a Michigan corporation ("Borrower"), AVL Powertrain Engineering, Inc., a Michigan corporation ("AVL Powertrain"), AVL California Technology Center, Inc., a Michigan corporation ("AVL California"), AVL Test Systems, Inc., a Delaware corporation ("AVL Test Systems"), AVL Strategic Analytic Services, Inc., a Michigan corporation ("AVL Strategic"), AVL Properties, Inc. a Michigan corporation ("AVL Properties"), AVL TSI Equipment, LLC, a Michigan limited liability company ("AVL TSI Equipment"), and AVL PEI Equipment, LLC, a Michigan limited liability company ("AVL PEI Equipment") (the Borrower, AVL Powertrain, AVL California, AVL Test Systems, AVL Strategic, AVL Properties, AVL TSI Equipment and AVL PEI Equipment are hereinafter referred to collectively as the "Grantors" and individually as a "Grantor"), in favor of RBS Citizens, N.A., a national banking association ("RBS"), acting as agent hereunder for the Secured Creditors referred to below (RBS acting as such agent and any successor or successors to RBS acting in such capacity being hereinafter referred to as the "Agent"), pursuant to the Credit Agreement referred to below.

Recitals

A. The Borrower and RBS, as Agent, entered into a Credit Agreement dated as of the date hereof (as amended, supplemented, restated or otherwise modified from time to time, including any agreement entered into in replacement thereof, the "Credit Agreement"), pursuant to which RBS and the other banks, financial institutions and letter of credit issuer(s) from time to time party to the Credit Agreement (RBS, in its individual capacity, and such other banks and financial institutions being hereinafter referred to collectively as the "Lenders" and each is individually a "Lender" and such letter of credit issuer(s) being hereinafter referred to collectively as the "L/C Issuers" and individually as a "L/C Issuer") have agreed, subject to certain terms and conditions, to extend credit and make certain other financial accommodations available to the Borrower (the Agent, the L/C Issuers and the Lenders, together with any Affiliates of the Lenders party to any Hedging Agreements and / or Funds Transfer and Deposit Account Agreements referred to below, being hereinafter referred to collectively as the "Secured Creditors" and individually as a "Secured Creditor").

B. In connection with the Credit Agreement, the Grantors and the Agent entered into a Security Agreement dated as of the date hereof (as amended, supplemented, restated or otherwise modified from time to time, including any agreement entered into in replacement thereof, the "Security Agreement"), pursuant to which the Grantors have granted to the Agent, for the benefit of the Secured Creditors, a security interest in each Grantor's assets to secure all present and future Secured Obligations.

C. Pursuant to the terms of the Security Agreement, the Grantors pledged, assigned and granted to the Lender a security interest in, among other assets, all patents and patent applications and all trademarks and trademark applications of each Grantor.

Agreement

In consideration of the recitals set forth above and the mutual agreements contained herein and in the Credit Agreement and the other Loan Documents, the Grantors hereby grant to the Agent, for the benefit of the Secured Creditors, to secure the Secured Obligations, a continuing security interest in all of each Grantor's right, title and interest in, to and under the following, whether now owned by or owing to, or hereafter acquired by or arising in favor of any Grantor (including as identified by any trade name or any derivations thereof):

- (1) each unregistered patent, patent registration and patent application, including, without limitation, each patent and patent application referred to in Schedule 1 attached hereto, together with any renewal thereof;
- (2) each patent license to which any Grantor is a party, including, without limitation, each patent license listed on Schedule 1 attached hereto;
- (3) all products and proceeds of the foregoing, including, without limitation, any and all claims by any Grantor against third parties for past, present or future infringement of any patent, including, without limitation, any patent referred to in Schedule 1 attached hereto, any patent issued pursuant to a patent application referred to in Schedule 1 attached hereto and any patent licensed under any patent license listed on Schedule 1 attached hereto (items 1 through 3 being herein collectively referred to as the "Patent Collateral");
- (4) each unregistered trademark, trademark registration and trademark application, including, without limitation, each trademark and trademark application referred to in Schedule 2 attached hereto, together with any renewal thereof;
- (5) each trademark license to which any Grantor is a party, including, without limitation, each trademark license listed on Schedule 2 attached hereto;
- (6) all products and proceeds of the foregoing, including, without limitation, any and all claims by any Grantor against third parties for past, present or future infringement of any trademark, including, without limitation, any trademark referred to in Schedule 2 attached hereto, any trademark issued pursuant to a trademark application referred to in Schedule 2 attached hereto and any trademark licensed under any trademark license listed on Schedule 2 attached hereto (items 4 through 6 being herein collectively referred to as the "Trademark Collateral");


The security interest granted to the Agent herein is granted in furtherance, and not in limitation of, the security interests granted to the Agent pursuant to the Security Agreement and nothing in this Agreement shall limit or otherwise modify the security interests granted in the Security Agreement. Each Grantor acknowledges and affirms that the rights and remedies of the Agent with respect to the security interest in the Patent Collateral and the Trademark Collateral made and granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated herein by reference as if fully set forth herein. In the event of any conflict between the terms of this Agreement and the Security Agreement, the terms of the

Security Agreement shall govern. All capitalized terms used but not defined herein shall have the respective meanings ascribed thereto in the Security Agreement.

[Signature pages follow]

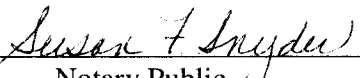
IN WITNESS WHEREOF, the Grantors have executed this Agreement as of the date first set forth above.

AVL MICHIGAN HOLDING CORPORATION

By: 
Name: Chester S. Ricker
Title: Vice President and Chief Financial Officer

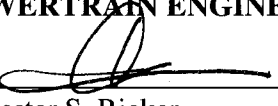
STATE OF MICHIGAN)
)SS
COUNTY OF Oakland)

The foregoing instrument was acknowledged before me this 13th day of June, 2011, by Chester S. Ricker, the Vice President and Chief Financial Officer of AVL Michigan Holding Corporation, a Michigan corporation, on behalf of the corporation.


Notary Public
(SEAL)
Printed Name: _____
My Commission Expires: _____

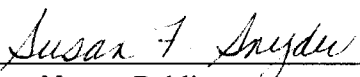
Susan F. Snyder
Notary Public, Oakland County, M.
Acting In Oakland County, Michigan
My Commission Expires on 07-05-2015

AVL POWERTRAIN ENGINEERING, INC.

By: 
Name: Chester S. Ricker
Title: Vice President and Chief Financial Officer


STATE OF MICHIGAN)
)SS
COUNTY OF Oakland)

The foregoing instrument was acknowledged before me this 13th day of June, 2011, by Chester S. Ricker, the Vice President and Chief Financial Officer of AVL Powertrain Engineering, Inc., a Michigan corporation, on behalf of the corporation.


Notary Public
(SEAL)
Printed Name: _____
My Commission Expires: _____

Susan F. Snyder
Notary Public, Oakland County, Mi
Acting In Oakland County, Michigan
My Commission Expires on 07-05-2015

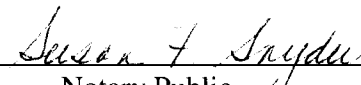
AVL CALIFORNIA TECHNOLOGY
CENTER, INC.

By: 
Name: Chester S. Ricker
Title: Vice President and Chief Financial Officer

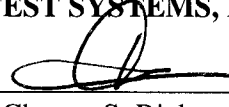
STATE OF MICHIGAN)
)SS
COUNTY OF Oakland)

The foregoing instrument was acknowledged before me this 13th day of June, 2011, by Chester S. Ricker, the Vice President and Chief Financial Officer of AVL California Technology Center, Inc., a Michigan corporation, on behalf of the corporation.

Susan F. Snyder
Notary Public, Oakland County, MI
Acting In Oakland County, Michigan
My Commission Expires on 07-05-2015


Notary Public
(SEAL)
Printed Name: _____
My Commission Expires: _____


AVL TEST SYSTEMS, INC.

By: 
Name: Chester S. Ricker
Title: Vice President and Chief Financial Officer

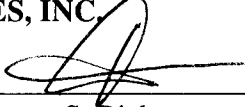
STATE OF MICHIGAN)
)SS
COUNTY OF Oakland)

The foregoing instrument was acknowledged before me this 13th day of June, 2011, by Chester S. Ricker, the Vice President and Chief Financial Officer of AVL Test Systems, Inc., a Delaware corporation, on behalf of the corporation.

Susan F. Snyder
Notary Public, Oakland County, MI
Acting In Oakland County, Michigan
My Commission Expires on 07-05-2015

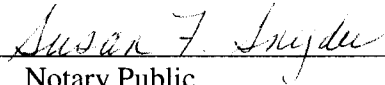

Notary Public
(SEAL)
Printed Name: _____
My Commission Expires: _____

**AVL STRATEGIC ANALYTIC
SERVICES, INC.**

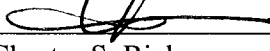
By: 
Name: Chester S. Ricker
Title: Vice President and Chief Financial Officer

STATE OF MICHIGAN)
)SS
COUNTY OF Oakland)

The foregoing instrument was acknowledged before me this 13th day of June, 2011, by Chester S. Ricker, the Vice President and Chief Financial Officer of AVL Strategic Analytic Services, Inc., a Michigan corporation, on behalf of the corporation.

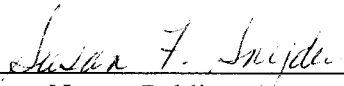

Notary Public
Susan F. Snyder (SEAL)
Notary Public, Oakland County, MI
Acting In Oakland County, Michigan
My Commission Expires on 07-05-2015
Printed Name: _____
My Commission Expires: _____

AVL PROPERTIES, INC.


By: 
Name: Chester S. Ricker
Title: Secretary and Treasurer

STATE OF MICHIGAN)
)SS
COUNTY OF Oakland)

The foregoing instrument was acknowledged before me this 13th day of June, 2011, by Chester S. Ricker, the Secretary and Treasurer of AVL Properties, Inc., a Michigan corporation, on behalf of the corporation.


Notary Public
Susan F. Snyder (SEAL)
Notary Public, Oakland County, MI
Acting In Oakland County, Michigan
My Commission Expires on 07-05-2015
Printed Name: _____
My Commission Expires: _____

AVL TSI EQUIPMENT, LLC

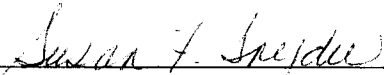
By: 

Name: Chester S. Ricker

Title: Manager

STATE OF MICHIGAN)
)SS
COUNTY OF Oakland)

The foregoing instrument was acknowledged before me this 3rd day of June, 2011, by Chester S. Ricker, the Manager of AVL TSI Equipment, LLC, a Michigan limited liability company, on behalf of the company.


Notary Public

(SEAL)

Printed Name: _____

My Commission Expires: _____

Susan F. Snyder
Notary Public, Oakland County, MI
Acting In Oakland County, Michigan
My Commission Expires on 07-05-2015

AVL PEI EQUIPMENT, LLC

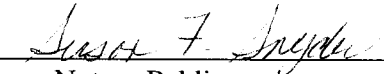
By: 

Name: Chester S. Ricker

Title: Manager

STATE OF MICHIGAN)
)SS
COUNTY OF Oakland)

The foregoing instrument was acknowledged before me this 3rd day of June, 2011, by Chester S. Ricker, the Manager of AVL PEI Equipment, LLC, a Michigan limited liability company, on behalf of the company.


Notary Public

(SEAL)

Printed Name: _____

My Commission Expires: _____

Susan F. Snyder
Notary Public, Oakland County, MI
Acting In Oakland County, Michigan
My Commission Expires on 07-05-2015

Acknowledged and Agreed:

RBS CITIZENS, N.A.

By: 

Name: Charles Harris

Title: Vice President - Michigan Corporate
Banking

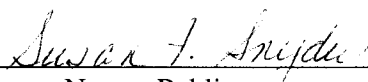
STATE OF MICHIGAN)

)SS

COUNTY OF Oakland)

The foregoing instrument was acknowledged before me this 13th day of June, 2011, by Charles Harris, the Vice President - Michigan Corporate Banking of RBS Citizens, N.A., a national banking association, on behalf of the association.

Susan F. Snyder
Notary Public, Oakland County, MI
Acting In Oakland County, Michigan
My Commission Expires on 07-05-2015


Notary Public

(SEAL)

Printed Name: _____

My Commission Expires: _____

SCHEDULE 1
to
PATENT AND TRADEMARK SECURITY AGREEMENT

See attached.

ISSUED PATENTS			
	PATENT NO.	ISSUE DATE	COMPANY
Flat Track Chassis Dynamometer	US 7,213,449	05/08/2007	AVL North America, Inc. and AVL Zoellner GmbH
Particulate Deposit Avoidance and Probe Positioning	US 7,191,871	03/20/2007	AVL North America, Inc.
Active Filter Temperature Control	US 7,141,090	11/28/2006	AVL North America, Inc.
Exhaust Volume Measurement Device	US 7,055,364	08/08/2006	AVL North America, Inc.
Misfire Detection Using Acoustic Sensors	US 7,021,128	04/04/2006	AVL North America, Inc.
Exhaust Volume Measurement Device	US 7,000,449	02/21/2006	AVL North America, Inc.
Exhaust Volume Measurement Device	US 6,973,818	12/13/2005	AVL North America, Inc.
Diesel Particulate Filter Monitoring Using Acoustic Sensing	US 6,964,694	11/15/2005	AVL North America, Inc.
Heated Stainless Steel Emissions Canister	US 6,962,090	11/09/2005	AVL North America, Inc.
Particulate Sampling Probe and Dilution Tunnel	US 6,857,327	02/22/2005	AVL North America, Inc.
Active Pulsation Cancellation Device for Diesel Particulate Sampling Systems	US 6,823,748	11/30/2004	AVL North America, Inc.
Engine Exhaust Emissions Measurement Correction	US 6,823,268	11/23/2004	AVL North America, Inc.
Particulate Sampling Probe and Dilution Tunnel	US 6,742,407	08/01/2004	AVL North America, Inc.
Particulate Sampling Probe and Dilution Tunnel	US 6,481,299	11/19/2002	AVL North America, Inc.
Suspended Single Roll Dynamometer	US 5,522,257	06/04/1996	AVL North America, Inc.
Internal Combustion Engine with Low Viscosity Fuel System	US 6,189,517	02/20/2001	AVL Powertrain Engineering, Inc.
Fuel Injection System for Clean Low Viscosity Fuels	US 6,119,664	09/19/2000	AVL Powertrain Engineering, Inc.
Fuel Injection System for Clean Low Viscosity Fuels	US 5,816,228	10/06/1998	AVL Powertrain Engineering, Inc.
Diesel Aircraft Engine	US 7,191,742	03/20/2007	Schrick, Inc.
Fuel Delivery Measurement System with Automatic Pump Matching	US 5,708,201	01/13/1998	Pierburg Instruments, Inc./AVL North America, Inc.

Active Pulsation Cancellation Device for Diesel Particulate Sampling Systems	EP 1249695		AVL North America, Inc.
Active Pulsation Cancellation Device for Diesel Particulate Sampling Systems	JP 3737776		AVL North America, Inc.
Engine Exhaust Emissions Measurement Correction	EP 1333270		AVL North America, Inc.

PATENT APPLICATIONS					
DESCRIPTION	PUBLICATION NO.	APPLICATION NO.	DATE FILED	COMPANY	
Exhaust Volume Measurement Device	20060225482	11/447490	06/06/2006	AVL North America, Inc.	
Particulate Sampler System Flow Calibration	20060216826	11/388911	03/22/2006	AVL North America, Inc.	
Particulate Sampler and Dilution Gas Flow Device Arrangement for an Exhaust Sampling System		11/546048		AVL North America, Inc.	
CVS System Sample		60/845271		AVL North America, Inc.	
Water Vapor Management Diesel Aircraft Engine		11/687325		Schrack, Inc.	
Transmission Headstock for Test Stands		11/496804		AVL North America, Inc.	
Diesel Aircraft Engine	Docket Number 67023-307 PAT 67023-307 PBR 67023-307 PCA 67023-307 PCN 67023-307 POE 67023-307 PGB			Schrack, Inc.	
Diesel Aircraft Engine				Schrack, Inc.	
Diesel Aircraft Engine				Schrack, Inc.	
Diesel Aircraft Engine				Schrack, Inc.	
Diesel Aircraft Engine				Schrack, Inc.	
Air Turbine Driven EGR Pump for Diesel Engines		12/785,071	05/21/2010	AVL Powertrain Engineering, Inc.	
Hybrid Powerplant with Waste Heat Recovery System		PCT/US2010/20876	06/13/2010	AVL Powertrain Engineering, Inc.	
Ejector Type EGR Mixer		PCT/US2010/20732	01/12/2010	AVL Powertrain Engineering, Inc.	
Sliding Vane Rotary Expander for Waste Heat Recovery System		PCT/US2010/20736	01/12/2010	AVL Powertrain Engineering, Inc.	
Exhaust Power Turbine Driver EGR Pump for Diesel Engines		12/785095	05/24/2010	AVL Powertrain Engineering, Inc.	
Particulate Measurement System	67023-046 PCT	10/44633	09/06/2010	AVL North America, Inc.	

SCHEDULE 2
to
PATENT AND TRADEMARK SECURITY AGREEMENT

See attached.

FEDERALLY REGISTERED TRADEMARKS		
MARK	REG. NO.	COMPANY
BENCHMARK SERIES	3031039	DIGALOG, AN AVL COMPANY
DIGALOG	2876490	DIGALOG, AN AVL COMPANY
HYPERCELL	1896201	DIGALOG, AN AVL COMPANY
CELLMATE	1890200	DIGALOG, AN AVL COMPANY
DIGALOG	1787874	DIGALOG, AN AVL COMPANY
D	1357859	DIGALOG, AN AVL COMPANY
CELLMATE	1363062	DIGALOG, AN AVL COMPANY
D	1285870	DIGALOG, AN AVL COMPANY
DIGALOG	1285869	DIGALOG, AN AVL COMPANY