

<b>PATENT ASSIGNMENT COVER SHEET</b>
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EPAS ID: PAT5326160

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT

**CONVEYING PARTY DATA**

Name	Execution Date
AERION CORPORATION	01/15/2019

**RECEIVING PARTY DATA**

<b>Name:</b>	AERION INTELLECTUAL PROPERTY MANAGEMENT CORPORATION
<b>Street Address:</b>	5190 NEIL ROAD, SUITE 500
<b>City:</b>	RENO
<b>State/Country:</b>	NEVADA
<b>Postal Code:</b>	89502

**PROPERTY NUMBERS Total: 52**

Property Type	Number
Application Number:	15626012
Application Number:	62482029
Application Number:	62482023
Application Number:	14545771
PCT Number:	US2016037027
Application Number:	14121432
Application Number:	13987654
Patent Number:	8991768
Patent Number:	9233755
Patent Number:	8317128
PCT Number:	US2012024794
Patent Number:	8448893
PCT Number:	US2012020588
Patent Number:	8882028
PCT Number:	US2011046522
Patent Number:	8272594
PCT Number:	US2010002758
Patent Number:	8371124
PCT Number:	US2010000960
Patent Number:	7837142

PATENT

Property Type	Number
PCT Number:	US2007021624
Application Number:	12807154
Patent Number:	7967241
Application Number:	60936268
Application Number:	60880054
Application Number:	60851841
Patent Number:	7946535
PCT Number:	US2007022157
Application Number:	60851630
Application Number:	60851403
Patent Number:	6857599
Patent Number:	7000870
PCT Number:	US2003035393
Patent Number:	7004428
Application Number:	60255509
Patent Number:	6149101
PCT Number:	US2000007047
Patent Number:	5897076
Patent Number:	5518204
Patent Number:	5322242
PCT Number:	US1993004970
Patent Number:	8892408
Patent Number:	8538738
PCT Number:	US2012030189
Patent Number:	9418202
Patent Number:	8457939
PCT Number:	US2011067917
Patent Number:	8935140
Patent Number:	9348956
PCT Number:	US2012028606
Patent Number:	8437990
Patent Number:	9494482

**CORRESPONDENCE DATA**

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**ATTORNEY DOCKET NUMBER:** 016596-0000003

**NAME OF SUBMITTER:** DAVID A. JAKOPIN/REG. NO. 32995

**SIGNATURE:** /David A. Jakopin/

**DATE SIGNED:** 01/15/2019

**Total Attachments: 10**

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## PATENT ASSIGNMENT

**THIS PATENT ASSIGNMENT** (this "Assignment") is made and entered into by and between **Aerion Corporation** ("Assignor"), and **Aerion Intellectual Property Management Corporation** ("Assignee") as of November 17, 2017 ("Effective Date"), which is the same date as the effective date on which Assignor and Assignee entered into the Intellectual Property Contribution and License Agreement ("Contribution Agreement").

**WHEREAS**, Assignor is the sole and exclusive owner of the entire right, title and interest in, to and under the utility patents, all associated and related applications, all reissues, divisions, continuations, continuations-in-part, reexaminations, and extensions thereof, all international applications and/or foreign equivalents thereof, and rights in patent disclosures, and all patent rights set forth on Schedule A attached hereto, (the "Patents"); and

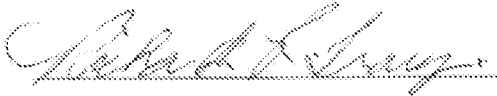
**WHEREAS**, consistent with, and as provided in the Contribution Agreement, Assignor wishes to assign to Assignee, and Assignee wishes to acquire from Assignor, all right, title and interest to the Patents; and

**SO NOW, THEREFORE**, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor hereby sells, conveys, assigns, transfers and delivers to Assignee its entire right, title and interest in and to the Patents, for the United States and for all foreign countries, and the inventions such Patents claim (including subject matter capable of being reduced to a patent claim in a reissue or reexamination proceeding relating to one of the Patents and subject matter that could have been included as a claim in one of the Patents), and any and all continuations, divisionals, continuations-in-part, provisionals, reissues, reexaminations, extensions, international applications or foreign equivalents thereof which may be obtained therefrom, and the priority rights thereto, for its own use and enjoyment, and for the use and enjoyment of its successors, assigns or other legal representatives, as fully and entirely as the same would have been held and enjoyed by Assignor if this Assignment had not been made, together with all income, royalties, or payments due or payable as of the Effective Date or thereafter, including, without limitation, all claims for damages by reason of past, present or future infringement or other unauthorized use of one or more of the Patents, with the right to sue for, and collect the same for its own use and enjoyment, and for the use and enjoyment of its successors, assigns, or other legal representatives. Assignor hereby requests the United States Commissioner of Patents and Trademarks, and the corresponding entities or agencies in any applicable foreign jurisdictions, to record Assignee as the assignee and owner of the Patents.

*[Remainder of the page intentionally left blank]*

**IN WITNESS WHEREOF**, Assignor and Assignee have caused this Assignment to be executed by their duly authorized representatives and made effective as of the Effective Date.

ASSIGNOR:  
AERION CORPORATION

By: 

Name: Richard R. Tracy

Title: Senior Vice President

Date: January 15, 2019

**IN WITNESS WHEREOF**, Assignor and Assignee have caused this Assignment to be executed by their duly authorized representatives and made effective as of the Effective Date.

ASSIGNEE:  
AERION INTELLECTUAL PROPERTY  
MANAGEMENT CORPORATION

By: 

Name: Richard R. Tracy

Title: President

Date: January 15, 2019

## SCHEDULE A

### Patents

Docket No.:	Title:	App. No.:	Filing Date:	Patent No.:	Issue Date:	Status:	Exp. Date:
016596-0452381	High Flow Plug Nozzle Apparatus and Method of Using the Same	15/626,012	06/17/2017	—	—	Pending	—
016596-0448919	Solid Modeler That Provides Spatial Gradients of 3D CAD Models of Solid Objects	62/482,029	04/05/2017	—	—	Pending	04/05/2018
016596-0448918	Solid Modeler That Provides Spatial Gradients of 3D CAD Models of Solid Objects	62/482,023	04/05/2017	—	—	Pending	04/05/2018
016596-0448937	Cockpit Seat Armrest Avionics Cursor Control Device	14/545,771	6/18/2015	—	—	Pending	—
016596-0447590	Cockpit Seat Armrest Avionics Cursor Control Device	PCT/US16/037027	06/18/2016	—	—	Pending	National Phase deadline: 12-18-2017 (30 mos)
13,498	Jet Engine and Fan System for Boundary Layer Ingestion					Not Filed –	—
016596-0454308	Jet Engine and Nacelle for Reduced Noise	14/121,432	9/8/2014			Pending	—
016596-0454606	LNG-Fueled Long Range, High Speed Aircraft	13/987,654	8/19/2013			Pending	—
13,351	Highly Efficient Transonic Laminar Flow Wing (CIP of docket 12,747, 7,946,535)	13/068,774	5/18/2011	8,991,768	3/31/2015	Issued	5/18/2031
13,347	Highly Efficient Supersonic Laminar Flow Wing Structure (CIP of docket 12,747)	13/068,773	5/18/2011	9,233,755	1/12/2016	Issued	5/18/2031
13,333	Laminar Flow Wing Optimized for Transonic Cruise Aircraft (CIP of docket 13,150 – 8,272,594)	12/932,091	2/16/2011	8,317,128	11/27/2012	Issued	2/16/2031

Docket No.:	Title:	App. No.:	Filing Date:	Patent No.:	Issue Date:	Status:	Exp. Date:
13,333-EP	Laminar Flow Wing Optimized for Transonic Cruise Aircraft	12746945.0-1753	2/13/2012	Pub. EP2675706		Pending	—
13,333-WO	Laminar Flow Wing Optimized for Transonic Cruise Aircraft	PCT/US12/024794	2/13/2012	Pub. WO2012/112408		Expired	—
13,331	Laminar Flow Wing Optimized for Transonic Cruise Aircraft (CIP of docket 13,150)	12/931,060	1/25/2011	8,448,893	5/28/2013	Issued	1/25/2031
13,331-EP	Laminar Flow Wing Optimized for Transonic and Supersonic Cruise Aircraft	12771457.4	1/9/2012	Pub. EP2668094		Pending	—
13,331-WO	Laminar Flow Wing Optimized for Transonic and Supersonic Cruise Aircraft	PCT/US12/20588	1/9/2012	Pub. WO2012/41770		Expired; filed in EP	—
13,213	Aircraft Emergency and Backup Secondary Power Apparatus	12/806,223	8/9/2010	8,882,028	11/11/2014	Issued	8/9/2030
13,213-WO	Aircraft Emergency and Backup Secondary Power Apparatus	PCT/US 2011/46522	8/4/2011	Pub. WO2012/021360		Expired – no foreign patents filed	—
13,150	Laminar Flow Wing Optimized for Supersonic Cruise Aircraft	12/589,424	10/26/2009	8,272,594	9/25/2012	Issued	10/26/2029
13,150-BR	Laminar Flow Wing Optimized for Supersonic and High Subsonic Cruise Aircraft	BR 11 2012 009654.0	10/15/2010			Pending	10/15/2030
13,150-CA	Laminar Flow Wing Optimized for Supersonic and High Subsonic Cruise Aircraft	2776951	10/15/2010	2776951	4/7/2015	Issued	10/15/2030
13,150-CN	Laminar Flow Wing Optimized for Supersonic and High Subsonic Cruise Aircraft	201080048113.9	10/15/2010	ZL 201080048113.9	10/15/2010	Issued	10/15/2030
13,150-EP	Laminar Flow Wing Optimized for Supersonic and High Subsonic Cruise Aircraft	10843355.8	10/15/2010	Pub. EP2493758		Pending	—



Docket No.:	Title:	App. No.:	Filing Date:	Patent No.:	Issue Date:	Status:	Exp. Date:
13,150-JP	Laminar Flow Wing Optimized for Supersonic and High Subsonic Cruise Aircraft	2012-536784	10/15/2010	5,992,332	08/26/16	Issued	—
13,150-RU	Laminar Flow Wing Optimized for Supersonic and High Subsonic Cruise Aircraft	2012121848	10/15/2010	2531536	10/15/2010	Issued	10/15/2030
13,150-WO	Laminar Flow Wing Optimized for Supersonic and High Subsonic Cruise Aircraft	PCT/US10/002758	10/15/2010	PCI Pub. WO2011/087475		Expired – national phase filed in CA, CN, EP, JP & RU	—
13,074	Jet Nozzle Plug with Varying, Non-Circular Cross Sections	12/384,248	4/3/2009	8,371,124	2/12/2013	Issued	4/3/2039
13,074-WO	Jet Nozzle Plug with Varying, Non-Circular Cross Sections	PCT/US10/000960	3/31/2010	PCI Pub. WO2010/114604		Abandoned	—
13,022	Supersonic Aircraft Jet Engine	11/973,813	10/9/2007	7,837,142	11/23/2010	Issued	10/9/2027
13,022-CA	Supersonic Aircraft Jet Engine	2665848	10/10/2007	2,665,848	10/10/2007	Issued	10/10/2027
13,022-EP	Supersonic Aircraft Jet Engine	07873759.0	10/10/2007	2084061	10/10/2007	Issued	10/10/2027
13,022-RU	Supersonic Aircraft Jet Engine	2009 117327	10/10/2007	2454354	6/27/2012	Abandoned	—
13,022-RU-1	Supersonic Aircraft Jet Engine	2011 150806	12/13/2011	2499739	10/10/2007	Issued	12/13/2031
13,022-WO	Supersonic Aircraft Jet Engine	PCT/US07/021624	10/10/2007	PCI Pub. WO2008105847		Expired	—
13,022-1	Supersonic Aircraft Jet Engine Installation	12/807,154	8/30/2010			Abandoned	—
13,022-2	Supersonic Aircraft Jet Engine Installation	12/807,142	8/30/2010	7,967,241	6/28/2011	Issued	8/30/2030
12,977	Surface Expansion Nozzle Configuration for Supersonic Aircraft	60/936,268	6/19/2007			Abandoned	—
13,938	Gradient Pressure Recovery Structure for Supersonic Aircraft	60/880,054	1/9/2007			Abandoned	—
12,906	Aircraft Engine Translating Inlet Assembly	60/851,841	10/12/2006			Provisional Application Expired	—

Docket No.:	Title:	App. No.:	Filing Date:	Patent No.:	Issue Date:	Status:	Exp. Date:
12,747	Highly Efficient Supersonic Laminar Flow Wing	11/974,802	10/18/2007	7,946,535	5/24/2011	Issued	10/18/2027
12,747-BR	Highly Efficient Supersonic Laminar Flow Wing	PI 0717627-9	10/17/2007			Pending	—
12,747-CA	Highly Efficient Supersonic Laminar Flow Wing	2,665,852	10/17/2007			Abandoned	—
12,747-CN	Highly Efficient Supersonic Laminar Flow Wing	200780044418.0	10/17/2007			Abandoned	—
12,747-EP	Highly Efficient Supersonic Laminar Flow Wing	07 874 420.8	10/17/2007	2,091,921	1/27/2016	Issued Lapsed in AT, IT, LT, PL – other designations unknown	10/17/2027
12,747-HK	Highly Efficient Supersonic Laminar Flow Wing	10101309.2	2/5/2010			Abandoned	—
12,747-JP	Highly Efficient Supersonic Laminar Flow Wing	2009-533360	10/17/2007			Abandoned	—
12,747-RU	Highly Efficient Supersonic Laminar Flow Wing	2009118394	10/17/2007	2494008	10/17/2007	Issued	10/17/2027
12,747-WO	Highly Efficient Supersonic Laminar Flow Wing	PCT/US07/022157	10/17/2007	PCT Pub. WO2008115207		Expired	—
12,746	Surface Expansion Nozzle Integration for Supersonic Aircraft	60/851,630	10/3/2006			Provisional Application Expired	Expired
12,745	Gradient Pressure Recovery Inlet for Supersonic Aircraft	60/851,403	10/13/2006			Provisional Application Expired	Expired
12,463	Highly Swept Canard with Low Sweep Wing Supersonic Aircraft Configuration	10/746,744	12/23/2003	6,857,599	2/22/2005	Issued	12/23/2023
12,453	Laminar Flow Wing for Transonic Cruise	10/693,411	11/7/2002	7,000,870	2/21/2006	Issued	11/7/2022
12,453-AU	Laminar Flow Wing for Transonic Cruise	2003287542	11/6/2003	2003287542	10/22/2009	Abandoned	—
12,453-BR	Laminar Flow Wing for Transonic Cruise	PI 0316038-6	11/6/2003	PI0316038-6	11/6/2003	Abandoned	—
12,453-CA	Laminar Flow Wing for Transonic Cruise	2503270	11/6/2003	2,503,270	5/17/2011	Abandoned	—
12,453-EP	Laminar Flow Wing for Transonic Cruise	03781784.8	11/6/2003	Pub. EP1583690	1/13/2010	Fr – Issued IT – Aband. DE – Aband. GB – Aband.	11/6/2023

Docket No.:	Title:	App. No.:	Filing Date:	Patent No.:	Issue Date:	Status:	Exp. Date:
12,453-JP	Laminar Flow Wing for Transonic Cruise	2004-551807	11/6/2003			Abandoned	—
12,453-WO	Laminar Flow Wing for Transonic Cruise	PCT/US03/35393	11/6/2003	PCT Pub. WO2004043780		Expired – national applications filed in AU (abandoned) CA (Lapsed), EP (granted), and JP (Status unknown)	—
12,358	Lift and Twist Control Using Trailing Edge Control Surfaces on Supersonic Laminar Flow Wings	10/762,083	1/20/2004	7,004,428	2/28/2006	Issued	1/20/2024
12,176	Efficient, Low Sonic Boom Laminar Flow, Aircraft Configurations	60/255,509	12/23/2000			Abandoned	—
11,922	Aircraft Wing and Fuselage Contours	09/270,524	3/17/1999	6,149,101	11/21/2000	Expired	—
PCT	Aircraft Wing and Fuselage Contours	PCT/US00/07047	03/16/2000	PCI Pub WO2000/055035 Pub'd. 09/21/2000		Expired; National phase in CA and EP	—
11,922-CA	Aircraft Wing and Fuselage Contours	2,273,166	3/16/2000	2,372,166	9/30/2008	Issued	3/16/2020
11,922-CA-1	Aircraft Wing and Fuselage Contours	2,634,307	3/16/2000	2,634,307	4/27/2010	Issued	3/16/2020
11,922-EP	Aircraft Wing and Fuselage Contours	00919440.8	3/16/2000	Pub. EP1169224	1/11/2006	FR – Issued GB – Issued DE – Aband. IT – Aband.	3/16/2020
11,922-HK	Aircraft Wing and Fuselage Contours	02105113.9	7/8/2002	HK1045288	9/22/2006	Abandoned	—
11,513	High-Efficiency, Supersonic Aircraft	08/650,686	5/20/1996	5,897,076	4/27/1999	Issued	5/20/2016
11,183	High-Efficiency, Supersonic Aircraft	08/258,781	6/13/1994	5,518,204	5/21/1996	Expired	—
10,648	High-Efficiency, Supersonic Aircraft	08/013,065	2/3/1993	5,322,242	6/21/1994	Expired	—

Docket No.:	Title:	App. No.:	Filing Date:	Patent No.:	Issue Date:	Status:	Exp. Date:
10,648-EP	High-Efficiency, Supersonic Aircraft	93918117.8	5/23/1993	EP0681544	1/9/1999	Lapsed (granted and validated in GB, FR, and DE – all lapsed)	—
PCT	High-Efficiency, Supersonic Aircraft	PCT/US93/004970	05/25/1993	Pub No. W01994/18069		Expired; Filed in CA (expired); EP (granted and lapsed in GB, FR, and DE)	—
CA	High-Efficiency, Supersonic Aircraft	2,155,316	08/02/1995	2,155,316		Expired	—
US	Generating Inviscid and Viscous Fluid Flow Simulations Over a Surface Using a quasi-Simultaneous Technique	13/070,384	03/23/2011	8,892,408	11/18/2014	Issued	
US	Predicting Transition from Laminar to Turbulent Flow Over a Surface	13/069,374	03/22/2011	8,538,738	09/17/2013	Issued	
PCT	Predicting Transition from Laminar to Turbulent Flow Over a Surface	PCT/US12/30189	03/22/2012	Pub No. WO2012-129440	—	Expired – no national applications filed	—
US	Predicting Transition from Laminar to Turbulent Flow Over a Surface	14/019,448	09/05/2013	9,418,202	08/16/2016	Issued	
US	Generating Inviscid and Viscous Fluid-Flow Simulations Over an Aircraft Surface Using a Fluid-Flow Mesh	12/982,744	12/30/2010	8,457,939	06/04/2013	Issued	
PCT	Generating Inviscid and Viscous Fluid-Flow Simulations Over an Aircraft Surface Using a Fluid-Flow Mesh	PCT/US11/67917	12/29/2011	Pub No. WO2012/092502		Expired – no national applications filed	
US	Generating Inviscid and Viscous Fluid-Flow Simulations Over a Surface using a Fluid-Flow Mesh	13/887,189	05/03/2013	8,935,140	01/13/2015	Issued	
US	Generating Simulated Fluid Flow Over a Surface Using Anisotropic Diffusion	13/887,199	05/03/2013	9,348,956	05/24/2016	Issued	

Docket No.:	Title:	App. No.:	Filing Date:	Patent No.:	Issue Date:	Status:	Exp. Date:
US	Generating a Simulated Fluid Flow Over an Aircraft Surface Using Anisotropic Diffusion	13/046,469	03/11/2011	8,437,990	05/07/2013	Issued	
PCT	Generating a Simulated Flow Over an Aircraft Surface Using Anisotropic Diffusion	PCT/US12/28606	03/09/2012	Pub. No. WO2012/125497	—	Expired – no national applications filed	
US	Predicting Transition from Laminar to Turbulent Flow Over a Surface Using Mode-Shape Parameters	13/850,628	03/26/2013	9,494,482	10/26/2016	Issued	