

<b>PATENT ASSIGNMENT COVER SHEET</b>
--------------------------------------

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3000591

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
DELAVAN, INC.	06/30/2014
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	ROLLS-ROYCE PLC
<b>Street Address:</b>	65 BUCKINGHAM GATE
<b>City:</b>	LONDON
<b>State/Country:</b>	UNITED KINGDOM
<b>Postal Code:</b>	SW1E 6AT
<b>PROPERTY NUMBERS Total: 6</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	14057511
Application Number:	13292258
Application Number:	12500649
Application Number:	12932958
Application Number:	13368659
Application Number:	12378654
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	317-261-7971
<b>Email:</b>	bslone@btlaw.com
<b>Correspondent Name:</b>	BARNES & THORNBURG LLP
<b>Address Line 1:</b>	11 SOUTH MERIDIAN STREET
<b>Address Line 4:</b>	INDIANAPOLIS, INDIANA 46204
<b>ATTORNEY DOCKET NUMBER:</b>	ROLLS-ROYCE PLC
<b>NAME OF SUBMITTER:</b>	SAMUEL C. GIESTING
<b>SIGNATURE:</b>	/SCG/
<b>DATE SIGNED:</b>	08/28/2014
<b>Total Attachments: 9</b>	
source=Confirmatory Deed of Assignment#page1.tif	

PATENT

source=Confirmatory Deed of Assignment#page2.tif  
source=Confirmatory Deed of Assignment#page3.tif  
source=Confirmatory Deed of Assignment#page4.tif  
source=Confirmatory Deed of Assignment#page5.tif  
source=Confirmatory Deed of Assignment#page6.tif  
source=Confirmatory Deed of Assignment#page7.tif  
source=Confirmatory Deed of Assignment#page8.tif  
source=Confirmatory Deed of Assignment#page9.tif

Execution Form

Dated 30 June 2014

DELAVAN INC  
ROLLS-ROYCE PLC

---

CONFIRMATORY DEED OF  
ASSIGNMENT

---

*RL*  
*WL*

PATENT  
REEL: 033627 FRAME: 0542

Contents

	Clause	Page
1	Definitions.....	1
2	Interpretation.....	2
3	Sale of the Patents and Inventions.....	2
4	Warranty.....	2
5	General.....	2
1	Patents and Inventions.....	5

*Handwritten initials*

This Deed is made on 30 June 2014

**Between**

- (1) **Delavan Inc**, whose office is at 811 4th Street, West Des Moines, Iowa 50265-0100, USA (**Seller**);  
and
- (2) **Rolls-Royce plc**, (No. 1003142) whose registered office is at 65 Buckingham Gate, London SW1E 6AT, UK (**Buyer**);

each a **Party** and together the **Parties**.

**BACKGROUND:**

- (A) The Seller developed the Patents and Inventions (each as defined below).
- (B) The Seller and the Buyer have entered into an agreement (Contract Reference: 0000202674:USD-0002 2014/Delavan/Lean Burn/Asset Purchase) dated 30 June 2014 (the **APA**) pursuant to which the Seller agreed to sell and the Buyer agreed to purchase certain assets and provide certain commitments, including the Patents and the Inventions.
- (C) For recordal purposes, the Seller has agreed to execute this Deed to confirm the assignment of the Patents and the Inventions to the Buyer with effect from the Execution Date (as defined below)

**It is agreed as follows:**

**1 Definitions**

In this Deed:

**APA** means this Asset Purchase Agreement as described in recital (B);

**Buyer** has the meaning provided in recital (2);

**Execution Date** means 30 June 2014;

**Intellectual Property Rights or IPR** means all rights in or to any patents, registered designs, design rights, trade marks, domain names, copyrights, database rights, topography rights, trade and business names, confidential information, trade secrets, and know-how, and any other industrial or intellectual property rights, whether registered or unregistered, created now or in the future and in any part of the world, including all registrations, extensions, and renewals of, applications to register, rights to apply to register, and rights to claim priority from, any of the aforesaid items,

**Inventions** means the inventions described in the invention records the short particulars of which are set out in part 3 of schedule 1;

**Jointly Owned Patents** means the patents and applications the short particulars of which are set out in part 2 of schedule 1;

**Patents** means the patents and applications the short particulars of which are set out in part 1 and part 2 of schedule 1;

**Party** and **Parties** has the meaning provided in the recitals; and

Execution Form

**Seller** has the meaning provided in recital (1).

**2 Interpretation**

2.1 In this Deed, unless the context otherwise requires, any reference to:

- (a) this Deed is a reference to this Deed as amended (but without prejudice to any prohibition on amending this Deed);
- (b) another document is a reference to such other document as such document may be amended as of the date hereof (unless otherwise stated);
- (c) a clause, a sub-clause, or a schedule is a reference to a clause or sub-clause of, or a schedule to, this Deed;
- (d) "include", "includes", "including" or similar terms shall not be construed as exclusive or limiting examples of the matters in question and shall mean "including, without limitation", and
- (e) words imparting the singular include the plural and vice versa.

2.2 The Table of Contents and headings in this Deed are inserted for convenience of reference only and are not intended to be a part of or to affect the meaning or interpretation of this Deed.

**3 Sale of the Patents and Inventions**

3.1 The Seller confirms that, with effect from the Execution Date, it assigned to the Buyer all its right, title, and interest (including all IPR) in the Patents and Inventions, including:

- (a) in respect of any invention or patent applications comprised in the Patents and Inventions, any right to file an application, claim priority from such application, and prosecute and obtain grant of patent or similar protection in or in respect of any country or territory in the world and any right to file divisional applications based thereon and to prosecute and obtain grant of patent on each and any such divisional application; and
- (b) the right to bring, make, oppose, defend, and appeal proceedings, claims, or actions and obtain relief (and to retain any damages recovered) in respect of any infringement or any other cause of action relating to any of the Patents and Inventions (or use or exploitation of the same), whether occurring before, on, or after Execution Date.

**4 Warranty**

Without prejudice to the guarantee and warranties as provided by the Seller with respect to the Patents and the Inventions in the APA, the Seller does not make, nor shall be deemed to have made, to the Buyer any express or implied representation, guarantee or warranty in this Deed with respect to any of the Patents or Inventions. The provisions of clause 12 (Limitation and Exclusion of Liability) as set out in the APA shall apply in respect of the Seller's liability pursuant to this Deed.

**5 General**

5.1 **Costs:** Each Party shall bear its own costs and expenses incurred in connection with the preparation, negotiation, completion, and implementation of this Deed and all ancillary documents.

5.2 **Counterparts:** This Deed may be entered into in any number of counterparts and by the Parties on separate counterparts, all of which taken together shall constitute one and the same instrument.

Execution Form

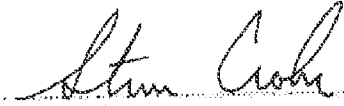
- 5.3 **Governing Law:** This Deed and the negotiations between the Parties in connection with its subject matter and all Disputes arising out of or in connection with them (including non-contractual disputes or claims) shall be governed by and construed in accordance with the law of England and Wales.
- 5.4 **Disputes:** Any dispute, controversy, or claim arising out of or in connection with this Deed (Dispute), whether arising in contract, tort, equity, for breach of statutory duty, or otherwise, shall be finally resolved in accordance with the procedure set out in schedule 5 (Dispute Resolution Procedure) of the APA.

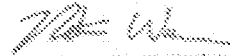
*W*  
*62*

Execution Form

Executed as a deed by the Parties or their duly authorised representatives but not delivered until the date of this Deed.

Executed as a deed by  
Delavan Inc  
acting by a director in the presence of

  
Director

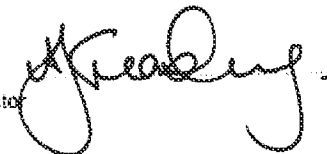
  
Signature of witness

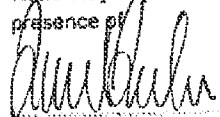
Name Norton Ware

Address 1 Hamilton Rd.

Windsor Locks CT 06096

Executed as a deed by **ANDY GREASLEY**  
Rollis-Royce plc acting by a director in the  
presence of

  
Director

  
Signature of witness

Name D. DEAKIN

Address Fo Box 31, DORSET, Dorset DT1 8B3

GR  
WL



Schedule 1

Patents and Inventions

Part 1: Patents and Patent Applications

Family Number	Title	Feature	Description	Type	Invention Disclosure Submission Number	Patent or Patent Application Numbers
XXXX	Systems and methods of pressure drop control in fluid circuits through swirling flow mitigation	Main Fuel Passages	Main Fuel Uniformity	Staging	211DG062	US13/200179(US12/368659) EP2626626(EP13/000650.5)
34300570	System and method for cooling a staged airblast fuel injector	Pilot and Mains Fuel Passages	CD7 arrangement in Mains tip ring for cooling stagnant Mains fuel with acceptable Pilot pressure drop	Aerothermal	204DG087 211DG043	DE 102007002422.5 FR 2896303 (FR07/00276) GB 2434637 (GB07/00228) GB2445113 (GB08/01660.2) US7506510 (US11/333388)
51694518	Systems and methods of pressure drop control in fluid circuits through swirling flow mitigation	Pilot and Mains Fuel Passages	Arrangement in Mains tip ring for cooling stagnant Mains fuel with acceptable Pilot pressure drop	Lifting	210DG063	EP2497922 (EP12250054.9) EP2570727 (EP12182739.8) EP2667098 (EP13169005.9) US12/228397(US11/932958) US12/228405(US13/481411) US12/227408(US11/235125)
47564201	Lean burn injectors having multiple pilot circuits	Pilot Fuel Passages	Dual Orifice LB Pilot	Lifting	209DG030	FR 2950389 (FR10/57446) GB 2473722(GB10/15302.1) US 8607571 (US09/562398) US14/057511
43488287	Pure air blast fuel injector	Pilot Fuel Passages	Dual Orifice LB Pilot	Lifting	211DG084	US14/041390(US14/057511) US12/047903(US13/292258) EP2592351(EP12/190665.5) DE102009019978

*Handwritten initials*

Execution Form

						FR2930980(FR09/02180) GB2459771(GB09/007878) GB2486083 (GB12/001529) US8096135 (US08/115579)
43637641	Radially outward flowing air blast fuel injector for gas turbine engine	MOS	ROFAB (Radial Outward Flowing Air Blast)	Manufacture	207DG020	EP2093489(EP09/002184.3) US 7926744 (US12/070828) US 8128007 (US12/928776) US 8146837 (US12/928728)
42658177	Method of fuel nozzle construction	Manufacturing	Ni - Boron brazing process, NIP, - diffusion brazing	Mechanical	207DG043	FR 2924487 (FR08/06638) GB 2480101 (UK821343.1) US 7926178 (US11/998584)
44964015	Fuel nozzle having aerodynamic air shaped helical turning valves	Swirler Vanes	Aero Vanes (aero-helical)	Fuel prep / handling	208DG046	DE 102010002004.3 FR 2942296 (FR10/00363) GB2468025 (GB10/02607.8) GB2501192 (GB13/09512) US 205971(US09/378654)
48149230	Aerodynamic swept vanes for fuel injectors	Swirler Vanes	Swept Aero Vanes	Staging	209DG033	FR 2947893 (FR10/02926) US11/05232 (US 09/500649)
46704973	Shaped air-swirler vanes for a gas turbine engine fuel injector	Swirler Vanes	Swept Aero Vanes	Staging	209DG033	GB2481075 (GB10/10688)

*OK*  
*we*

**Part 2: Jointly Owned Patents**

Family Number	Title	Feature	Description	Type	Invention Disclosure Submission Number	Patent or Patent Application Numbers
33593217	Lean direct injection atomizer for gas turbine engines	Mod Splitter	Concentric airspray Pilot and Mains and Pilot pressure atomiser and airspray Mains with recessed Pilot and splitters of various lengths DS of preflimer	Staging	204DG070	US7779636(US10/398634) EP1719950(EP06/009176.6) US 8156746 (US1G/804374) JP06/313064 (JP06/128788)

**Part 3: Inventions**

Invention Record	Name
RRLB_IR-01	Repairable Pilot Conic
RRLB_IR-02	Repairable Mod Splitter
RRLB_IR-03	Main Outer Air Swirler And Flare Configured For local Material Property Optimisation Using Laser Consolidation.
RRLB_IR-04	Nozzle Tip Profile
RRLB_IR-05	Dished And Scalloped Mounting Flange
RRLB_IR-06	Atomizer Tip Reinforcement For Improved Vibration Response
RRLB_IR-07	Profiled Braze Joints For Fuel Injector Air Flow Consistency
RRLB_IR-08	Fuel Injector Support (Feedarm) Asymmetry For Vibration Control
RRLB_IR-10	Profiled Pilot Stem Heat Shield
RRLB_IR-11	Monolithic Fuel Circuit
RRLB_IR-13	Fuel Injector Inlet Construction To Enable Removal of O Rings For Replacement Or For Pyrolytic Cleaning Of The fuel Injector. Re-instated by Re-welding The Inlet to The Injector.
RRLB_IR-14	Locally Optimized Material Properties