

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3751518

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| <b>SUBMISSION TYPE:</b>   | NEW ASSIGNMENT                |
| <b>NATURE OF CONVEYANCE:</b>  | ASSIGNMENT                    |
| <b>CONVEYING PARTY DATA</b>   |                               |
| <b>Name</b>   | <b>Execution Date</b>         |
| GENERAL ELECTRIC COMPANY  | 11/02/2015                    |
| <b>RECEIVING PARTY DATA</b>   |                               |
| <b>Name:</b>  | ALSTOM TRANSPORT TECHNOLOGIES |
| <b>Street Address:</b>  | 3 AVENUE ANDRE MALRAUX        |
| <b>City:</b>  | LEVALLOIS PERRET              |
| <b>State/Country:</b>   | FRANCE                        |
| <b>Postal Code:</b>   | 92300                         |
| <b>PROPERTY NUMBERS Total: 3</b>  |                               |
| <b>Property Type</b>  | <b>Number</b>                 |
| <b>Application Number:</b>  | 13851248                      |
| <b>Application Number:</b>  | 14631907                      |
| <b>Application Number:</b>  | 62115494                      |
| <b>CORRESPONDENCE DATA</b>  |                               |
| <b>Fax Number:</b>  | (330)864-7986                 |
| <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>   | 330-864-5550                  |
| <b>Email:</b>   | PATENTS@HAHNLA.W.COM          |
| <b>Correspondent Name:</b>  | HAHN LOESER & PARKS           |
| <b>Address Line 1:</b>  | 200 PUBLIC SQUARE, SUITE 2800 |
| <b>Address Line 4:</b>  | CLEVELAND, OHIO 44114         |
| <b>NAME OF SUBMITTER:</b>   | AMANDA H. WILCOX              |
| <b>SIGNATURE:</b>   | /AMANDA H. WILCOX/            |
| <b>DATE SIGNED:</b>   | 02/23/2016                    |
| <b>Total Attachments: 22</b>  |                               |
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**PATENT ASSIGNMENT**

This PATENT ASSIGNMENT (this "**Patent Assignment**") is made and entered into this 2<sup>nd</sup> day of November, 2015 by and between General Electric Company, a New York corporation ("**GE**"), acting solely through its transportation business (and for avoidance of doubt does not include GE acting through or on behalf of any business unit or division other than its transportation business) ("**Assignor**"), and Alstom Transport Technologies, a

incorporated under the Laws of France, having its registered office at 3 avenue André Malraux, 92300 Levallois Perret (France) and whose identification number is 752364778 ("**Assignee**"). Capitalized terms used herein but not defined otherwise shall have the respective meanings ascribed to such terms in the Purchase Agreement (as defined below).

WHEREAS, Assignor, ALSTOM, a *société anonyme* incorporated under the Laws of France, having its registered office at 3 avenue André Malraux, 92300 Levallois Perret (France) and whose identification number is 389 058 447, and ALSTOM Transport Holdings B.V., a *besloten vennootschap* incorporated under the Laws of The Netherlands, having its registered office at Ringdijk 390C, 2983 GS Ridderkerk, The Netherlands (ALSTOM and ALSTOM Transport Holdings B.V. are collectively hereinafter referred to as "**Buyer**"), are parties to that certain Master Purchase Agreement dated as of November 4, 2014 (as amended, modified or supplemented in accordance with its terms) the "**Purchase Agreement**", pursuant to which Assignor has agreed to sell to Buyer or Buyer Designees (including Assignee), and Buyer has agreed to purchase, or cause Buyer Designees (including Assignee) to purchase, from Assignor and certain of its Affiliates, the Acquired Assets, including the Patents set forth on Schedule A hereto (collectively, the "**Transferred Patents**"), on the terms and subject to the conditions set forth in the Purchase Agreement;

WHEREAS, Assignor owns the Transferred Patents;

WHEREAS, Assignee desires to purchase all of Assignor's right, title and interest in and to the Transferred Patents; and

NOW THEREFORE, for the consideration stated in the Purchase Agreement, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1. Assignment. Effective upon the Closing, Assignor hereby assigns to Assignee: (a) all of Assignor's right, title and interest in and to the Transferred Patents, including all registrations and applications for registration thereof, all rights therein provided by international treaties or conventions, and all reissues, extensions and renewals thereof, the same to be held and enjoyed by Assignee 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 or a Subsidiary if this assignment and sale had not been made; (b) income and payments now or hereafter due or payable with respect to the Transferred Patents; (c) all causes of action against third parties used or held for use exclusively or predominantly in connection with the Business with respect to the Transferred Patents; and (d) the right to sue, counterclaim and recover for, past, present and future infringement and misappropriation of the rights assigned or to be assigned under this Patent Assignment.

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2. No Representations or Warranties. Except as expressly provided in the Purchase Agreement, Assignor makes no representations or warranties, express or implied, with respect to any Transferred Patent.

3. Outstanding Rights.

4. Actions to Perfect the Interests. Assignor hereby covenants that Assignor shall and shall cause its Affiliates to, at the cost and expense of Assignee, take all reasonable actions and execute all reasonable documents as may be necessary or appropriate to perfect the interest of Assignee in and to the Transferred Patents as may be reasonably requested by Assignee, and shall not enter into any agreement or take any action in conflict with this Patent Assignment.

5. Notices.

6. Severability. If any term or provision of this Patent Assignment is held invalid, illegal or unenforceable in any respect under any applicable Law or as a matter of public policy, the validity, legality and enforceability of all other terms and provisions of this Patent Assignment will not in any way be affected or impaired. If the final judgment of a court of competent jurisdiction or other Government Authority declares that any term or provision hereof is invalid, illegal or unenforceable, the parties agree that the court making such determination will have the power to reduce the scope, duration, area or applicability of the term or provision, to delete specific words or phrases, or to replace any invalid, illegal or unenforceable term or provision with a term or provision that is valid, legal and enforceable and that comes closest to expressing the intention of the invalid, illegal or unenforceable term or provision.

7. No Third-Party Beneficiaries.

8. Amendments.

9. Governing Law. This Patent Assignment and any Action arising out of or relating in any way to this Patent Assignment, whether in contract, tort, common law, statutory law, equity, or otherwise, including any question regarding its existence, validity, or scope, shall be governed by, construed and enforced in accordance with the Laws of the State of New York without giving effect to any choice of law rules that would cause the application of Laws of any jurisdiction other than those of the State of New York.

10. Dispute Resolution; Remedies.

11. Entire Agreement; Purchase Agreement Controls.

12. Counterparts. This Patent Assignment may be executed in counterparts, each of which shall be deemed an original, but all of which when taken together shall constitute one and the same instrument. Facsimiles, e-mail transmission of .pdf signatures or other electronic copies of signatures shall be deemed to be originals.

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SIGNATURE PAGE FOLLOWS.

IN WITNESS WHEREOF, the parties have caused this Patent Assignment to be executed as of the date first written above by its duly authorized officer.

ASSIGNOR:

GENERAL ELECTRIC COMPANY, on behalf of itself and the Subsidiaries

By: 

Name: Thomas P. LaFrance

Title: General Counsel -  
GE Transportation

[Signature page to Patent Assignment]

ASSIGNEE:

ALSTOM TRANSPORT TECHNOLOGIES

By: 

Name: Emmanuel Petrouic

Title: Authorized Signatory

*[Signature page to Patent Assignment]*

PATENT

REEL: 037883 FRAME: 0725

# SCHEDULE A

| Short title PAF  | Country Code | Filing Number     | Grant Number    |
|--|--------------|-------------------|-----------------|
| ADVANCED COMMUNICATION-BASED VEHICLE CONTROL METHOD  | CA           | 2413080           | 2413080         |
| UN SISTEMA Y METODO PARA MONITOREAR LA CONDICION DE UN   | MX           | PA/a/2003/01 0949 | 242308          |
| SYSTEM AND METHOD FOR MONITORING THE CONDITION OF A VEHICLE  | US           | 10/159512         | 6985803         |
| Wire chase rung  | US           | 10/135160         | 6592082         |
| Cab signal quality detecting and reporting system and method   | AU           | 2003207490        | 2003207490      |
| SISTEMA E MÉTODO PARA DETECTAR E REPORTAR A QUALIDADE DE UM SINAL DE CABINA  | BR           | PI0307828-0       | NA              |
| NA   | CN           | 03806625-4        | 03806625-4      |
| Cab signal quality detecting and reporting system and method   | US           | 10/294261         | 6763290         |
| SWITCH MACHINE   | CA           | 2378806           | NA              |
| MAQUINA CAMBIADORA DE VIA  | MX           | PA/a/2002/00 3240 | 236981          |
| Switch machine   | US           | 10/099595         | 6691958         |
| NA   | CN           | 20041007145 8-2   | 2004100714 58-2 |
| Method and apparatus for monitoring and controlling warning systems  | US           | 10/248120         | 7098774         |
| Method, system, and storage medium for integrating vehicle management, transportation and communications functions | US           | 10/631454         | 6958709         |



| Short title PAF   | Country Code | Filing Number      | Grant Number       |
|---|--------------|--------------------|--------------------|
| Rail and train monitoring system and method   | AU           | 2004256027         | 2004256027         |
| NA  | CN           | 20048001824<br>5-1 | NA                 |
| NA  | RU           | 2006102369         | 2365517            |
| Rail and train monitoring system and method   | US           | 10/609832          | 6951132            |
| Method and apparatus for light outage detection   | US           | 09/585185          | 6222446            |
| Digital train system for automatically detecting trains approaching a crossing                  | AU           | 2004210872         | 2004210872         |
| SISTEMA DIGITAL FERROVIÁRIO PARA DETECTAR AUTOMATICAMENTE TRENS SE APROXIMANDO DE UM CRUZAMENTO | BR           | PI0407219-7        | NA                 |
| NA  | CN           | 20048000412<br>0-3 | 2004800041<br>20-3 |
| NA  | RU           | 2005128503         | 2342274            |
| Digital train system for automatically detecting trains approaching a crossing                  | US           | 10/743591          | 7254467            |
| Electronically controlled grade crossing gate system and method                                 | US           | 10/881959          | 7195211            |
| Remote system for monitoring and controlling railroad wayside equipment                         | US           | 10/820499          | 7140577            |
| Railway controller with improved application programming  | AU           | 2005210648         | 2005210648         |
| CONTROLADOR DE FERROVIAS COM PROGRAMAÇÃO DE APLICAÇÃO MELHORADA                                 | BR           | PI0506509-7        | NA                 |
| NA  | CN           | 20058000400<br>4-6 | 2005800040<br>04-6 |

| Short title PAF  | Country Code | Filing Number       | Grant Number       |
|--|--------------|---------------------|--------------------|
| Railway controller with improved application programming                       | GB           | 0615175-7           | 2426110            |
| Railway controller with improved application programming                       | US           | 11/039643           | 7315770            |
| RAILWAY CONTROLLER WITH IMPROVED APPLICATION PROGRAMMING                       | ZA           | 2006/06875          | 2006/06875         |
| Apparatus and method for monitoring the output of a warning or indicator light | US           | 10/882033           | 7154403            |
| Switch machine with switch point connect switch point connectors               | AU           | 2005217383          | 2005217383         |
| MÁQUINA DE CHAVE COM CONECTORES PARA AS AGULHAS DA CHAVE                       | BR           | PI0506612-3         | NA                 |
| SWITCH MACHINE WITH SWITCH POINT CONNECTORS                                    | CA           | 2555727             | 2555727            |
| NA   | CN           | 20058000505<br>9-9  | 2005800050<br>59-9 |
| Drehbare Verbinderanordnung für eine Eisenbahnweiche                           | DE           | 05712112-1          | 6020050037<br>96-9 |
| Switch machine with switch point connectors                                    | EP           | 07108998-1          | NA                 |
| Pivoting connector assembly for a railroad switch                              | GB           | 05712112-1          | 1718803            |
| NA   | IN           | 4504/DELNP/<br>2006 | NA                 |
| pivoting connector assembly for a railroad switch                              | IT           | 05712112-1          | 1718803            |
| NA   | RU           | 2006133314          | 2358057            |
| SWITCH MACHINE WITH SWITCH POINT CONNECTORS                                    | ZA           | 2006/07346          | 2006/07346         |

| Short title PAF   | Country Code | Filing Number      | Grant Number |
|---|--------------|--------------------|--------------|
| Self powered railway monitoring system  | US           | 11/005344          | 7364123      |
| Rail based electric power generation system                                       | US           | 11/005175          | 7148581      |
| Apparatus and method for monitoring the output of a warning or indicator light    | US           | 10/898774          | 7123165      |
| System and method for monitoring status of a visual signal device                 | US           | 10/955631          | 7270442      |
| System and method for providing access to wireless railroad data network          | AU           | 2006203756         | 2006203756   |
| NA  | CN           | 20061013187<br>8-4 | NA           |
| System and method for providing access to wireless railroad data network          | EP           | 06254933-2         | NA           |
| NA  | IN           | 2044/DEL/200<br>6  | NA           |
| SYSTEM AND METHOD FO PROVIDING ACCESS TO WIRELESS RAILROAD DATA NETWORK           | ZA           | 2006/07753         | 2006/07753   |
| SYSTEM AND METHOD FOR PROVIDING SECURE ACES TO A WAYSIDE RAIL NETWORK             | CN           | 20151021820<br>9.X |              |
| Machine for railway switching   | US           | 10/988853          | 7300023      |
| Movable point frog switching assembly   | US           | 11/248725          | 7341226      |
| System and method for detecting rail bre for detecting rail break/vehicle         | AU           | 2006321820         | 2006321820   |
| Methods and computer program product for monitoring integrity of a railroad train | AU           | 2006202620         | 2006202620   |
| NA  | IN           | 1385/DEL/200<br>6  | NA           |

| Short title PAF   | Country Code | Filing Number   | Grant Number   |
|---|--------------|-----------------|----------------|
| NA  | RU           | 2006122617      | 2408490        |
| Method and computer program product for monitoring integrity of railroad train                    | US           | 11/167015       | 7222003        |
| METHOD AND COMPUTER PROGRAM PRODUCT FOR MONITORING INTEGRITY OF A RAILROAD                        | ZA           | 2006/04878      | 2006/04878     |
| System and method for detecting rail break or vehicle   | AU           | 2006329907      | 2006329907     |
| NA  | IN           | 5080/DELNP/2008 | NA             |
| NA  | RU           | 2008130877      | 2419568        |
| SYSTEM AND METHOD FOR DETECTING RAIL BREAK OR VEHICLE   | ZA           | 2008/06064      | 2008/06064     |
| Railroad wayside signal system  | US           | 11/272336       | 7561066        |
| System and method for monitoring train arrival and departure latencies                            | US           | 11/317533       | 7428453        |
| NA  | CN           | 200780031818-8  | 200780031818-8 |
| NA  | CN           | 201110181362-1  | NA             |
| motore idraulico per scambi ferroviari  | IT           | MI2006A001647   | 1375158        |
| Hydraulic motor for railway switches  | US           | 12/374432       | 8302915        |
| Railway power supply system and method for powering an electrical device situated along a railway | US           | 11/350063       | 7547988        |
| System and method for railroad wayside monitoring   | US           | 11/651229       | 8245983        |

| Short title PAF  | Country Code | Filing Number       | Grant Number       |
|--|--------------|---------------------|--------------------|
| Method and apparatus for selectively disabling train location reports                                  | US           | 11/342875           | 7797087            |
| A system for a greaseless switch assembly  | AU           | 2006323209          | 2006323209         |
| SYSTEM FÜR EINE FETTFREIE WEICHENANORDNUNG   | CH           | 06802761-4          | 1960244            |
| NA   | CN           | 20068004627<br>1-4  | 2006800462<br>71-4 |
| SYSTEM FÜR EINE FETTFREIE WEICHENANORDNUNG   | DE           | 06802761-4          | 6020060203<br>32-2 |
| Järjestelmä voiteluaineetonta vaihdeyksikköä varten  | FI           | 06802761-4          | 1960244            |
| A system for a greaseless switch assembly  | GB           | 06802761-4          | 1960244            |
| NA   | IN           | 4365/DELNP/<br>2008 | NA                 |
| a system for a greaseless switch assembly  | IT           | 06802761-4          | 1960244            |
| NA   | RU           | 2008127425          | 2406634            |
| Ett system för en smörjfri kopplingshopsättning  | SE           | 06802761-4          | 1960244            |
| NA   | TR           | 06802761-4          | 2011/02193         |
| System and method for temporary protection operation of a controller box for a railroad switch turnout | US           | 11/669271           | 7753318            |
| System and method of multi-generation positive train control system                                    | US           | 11/518250           | 8082071            |
| Method of planning the movement of trains using pre-allocation of resources                            | US           | 11/591521           | 8433461            |

| Short title PAF   | Country Code | Filing Number      | Grant Number       |
|---|--------------|--------------------|--------------------|
| Method, system and computer code for a track signaling system without insulated joints              | AU           | 2007345157         | 2007345157         |
| Method and system for a track signaling system without insulated joints                             | US           | 11/626489          | 7815151            |
| Method, computer software code, and system for determining a train direction at a railroad crossing | US           | 11/533384          | 7618010            |
| NA  | CN           | 20091013932<br>7-6 | 2009101393<br>27-6 |
| System and method for aligning a railroad signaling system  | US           | 11/748549          | 7908114            |
| Methods and system for jointless track circuits using passive signaling                             | AU           | 2007334237         | 2007334237         |
| Methods and system for jointless track circuits using passive signaling                             | US           | 11/611536          | 7954770            |
| System and method for sensing misalignment of a railroad signaling system                           | US           | 11/733807          | 7554457            |
| sistema riscaldante per antenne a microonde montate a bordo di locomotori ferroviari                | IT           | MI2007A0006<br>11  | 1382205            |
| Methods and systems for testing a functional status of a light unit                                 | US           | 11/796056          | 7652480            |
| Methods and systems for verifying the operation of a railroad gate                                  | US           | 11/757708          | 7789348            |
| NA  | CN           | 20108004501<br>7-9 | NA                 |
| METHODS AND SYSTEMS FOR FAIL-SAFE COMMUNICATION   | EP           | 10742342-8         | NA                 |
| Method for fail-safe communication  | US           | 12/511144          | 8228946            |
| Methods and systems for variable rate communication timeout   | US           | 11/821665          | 7731129            |

| Short title PAF   | Country Code | Filing Number    | Grant Number |
|---|--------------|------------------|--------------|
| Methods and system of automating track circuit calibration                              | AU           | 2009204324       | 2009204324   |
| Methods and system of automating track circuit calibration                              | AU           | 2012201972       | NA           |
| NA  | BR           | PI0905666-1      | NA           |
| METHODS AND SYSTEMS OF AUTOMATING TRACK CIRCUIT CALIBRATION                             | ZA           | 2010/05280       | 2010/05280   |
| Systems and methods for changing parameters of a controller                             | US           | 11/750486        | 8145799      |
| Systems and method for communicating data in a railroad system                          | US           | 12/349996        | 8264330      |
| System and method to provide communication-based train control system capabilities      | US           | 12/324032        | 8224510      |
| Methods and system for detecting railway vacancy  | US           | 12/116792        | 8452466      |
| Method and apparatus for remotely monitoring railroad equipment using network protocols | AU           | 2008305504       | 2008305504   |
| NA  | BR           | PI0816039-2      | NA           |
| NA  | CN           | 20088010964 8-5  | NA           |
| METHOD AND APPARATUS FOR REMOTELY MONITORING RAILROAD EQUIPMENT USING NETWORK PROTOCOLS | EP           | 08796413-6       | NA           |
| NA  | IN           | 1715/DELNP/ 2010 | NA           |
| Systems and methods for determining an operating state using RFID                       | US           | 12/048403        | 8400270      |
| Method and system for generating electricity  | US           | 12/139967        | 8310070      |

| Short title PAF   | Country Code | Filing Number | Grant Number |
|---|--------------|---------------|--------------|
| SYSTEMS AND METHODS FOR DETERMINING WHETHER A TRANSPORTATION TRACK IS OCCUPIED        | US           | 12/184014     | NA           |
| System, method and computer readable media for regulating the speed of a rail vehicle | US           | 12/046678     | 7647142      |
| Signal alignment monitoring system and method of assembling the same                  | US           | 12/402607     | 8149129      |
| RAILWAY SENSOR COMMUNICATION SYSTEM AND METHOD  | EP           | 09709162-3    | NA           |
| Railway sensor communication system and method  | US           | 12/852073     | 8469319      |
| RAILWAY SENSOR COMMUNICATION SYSTEM AND METHOD  | ZA           | 2010/06003    | 2010/06003   |
| System and method for operating train in the presence of multiple alternate routes    | US           | 12/405654     | 8170732      |
| Foreign track current suppression system and method                                   | AU           | 2010355287    | NA           |
| Foreign track current suppression system and method                                   | GB           | 1222599-1     | NA           |
| Foreign track current suppression system and method                                   | US           | 12/818472     | 8376286      |
| WARNING HORN CONTROL SYSTEM, RADAR SYSTEM, AND METHOD                                 | US           | 12/830081     | 9019115      |
| SIGNAL DETECTION SYSTEM AND METHOD  | US           | 13/668507     | NA           |
| Einrichtung zur Begrenzung der axialen Last einer Endlosschraube                      | DE           | 99109609-0    | 69907065-1   |
| CURRENT SENSOR  | AU           | 2013101467    | 2013101467   |
| Method and system for determining signal state  | US           | 13/108379     | 8581499      |



| Short title PAF  | Country Code | Filing Number | Grant Number |
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| TRANSPORTATION NETWORK SCHEDULING SYSTEM AND METHOD  | AU           | 2014100418    | 2014100418   |
| COMMUNICATION SYSTEMS AND METHOD FOR A RAIL VEHICLE OR OTHER POWERED SYSTEM                          | AU           | 2013101457    | 2013101457   |
| NA   | EA           | 201391517     | NA           |
| Communication systems and method for a rail vehicle or other powered system                          | US           | 13/311252     | 8731747      |
| SYSTEMS AND METHOD FOR A CROSSING EQUIPMENT CONTROL  | AU           | 2014100027    | 2014100027   |
| APPARATUS AND METHOD FOR SAFE STATE RETENTION  | AU           | 2013213662    | NA           |
| Apparatus and method for safe state retention  | EP           | 13179262-4    | NA           |
| APPARATUS AND METHOD FOR SAFE STATE RETENTION  | US           | 13/586909     | NA           |
| RAILWAY CODE GENERATION AND SIGNALING SYSTEM AND METHOD  | US           | 14/066884     | NA           |
| Methods and system for crossing prediction   | US           | 13/446659     | 8725405      |
| Spread Spectrum Signals in ERTMS/ETCS Systems  | US           | 13/747507     | NA           |
| Spread Spectrum Signals in ERTMS/ETCS Systems  | EP           | 14152080.9    | NA           |
| Spread Spectrum Signals in ERTMS/ETCS Systems  | IN           | 83/CHE/2014   | NA           |
| Spread Spectrum Signals in ERTMS/ETCS Systems  | HK           |               |              |
| Algorithmic approach to optimize metro timetables in terms of energy consumption online and offline. | US           | 13/676279     | 8670890      |

| Short title PAF  | Country Code | Filing Number | Grant Number |
|--|--------------|---------------|--------------|
| Algorithmic approach to optimize metro timetables in terms of energy consumption online and offline. | AU           | 2013206546    | NA           |
| Algorithmic approach to optimize metro timetables in terms of energy consumption online and offline. | IN           | 1746/DEL/2013 | NA           |
| Algorithmic approach to optimize metro timetables in terms of energy consumption online and offline. | EP           | 13174982.2    | NA           |
| Algorithmic approach to optimize metro timetables in terms of energy consumption online and offline. | HK           | 14102670.7    | NA           |
| METHODS AND SYSTEM OF AUTOMATING TRACK CIRCUIT CALIBRATION   | US           | 13/478448     | NA           |
| METHODS AND SYSTEMS FOR SIGNAL FINGERPRINTING  | US           | 13/851248     | NA           |
| ETCS Signals Fingerprinting  | AU           | 2013206087    | NA           |
| ETCS Signals Fingerprinting  | IN           | 1453/DEL/2013 | NA           |
| ETCS Signals Fingerprinting  | EP           | 13172266.2    | NA           |
| ETCS Signals Fingerprinting  | HK           | 14102601.1    | NA           |
| SYSTEMS AND METHODS FOR MANAGEMENT OF CROSSINGS NEAR STATIONS  | AU           | 2014100507    | 2014100507   |
| SYSTEMS AND METHODS FOR MANAGEMENT OF CROSSINGS NEAR STATIONS  | US           | 13/900649     | NA           |
| SYSTEMS AND METHODS FOR VEHICLE BRAKING CONTROL  | AU           | 2013101329    | 2013101329   |
| SYSTEMS AND METHODS FOR VEHICLE BRAKING CONTROL  | US           | 14/049389     | NA           |
| SYSTEMS AND METHODS FOR PROVIDING CONSTANT WARNING TIME AT CROSSINGS                                 | US           | 13/910412     | 9026360      |

| Short title PAF   | Country Code | Filing Number     | Grant Number |
|---|--------------|-------------------|--------------|
| Systems and methods for providing constant warning time at crossings                  | AU           |                   | 2014100563   |
| SYSTEMS AND METHODS FOR MAINTAINING INTERLOCKINGS OF TRANSPORTATION NETWORKS          | US           | 14/148864         | 14/148864    |
| Systems and methods for maintaining interlockings of transportation networks          | AU           |                   | 2014100586   |
| SYSTEMS AND METHODS FOR CONTROLLING WARNINGS AT VEHICLE CROSSINGS                     | US           | 14/146873         | 9126609      |
| GE WIU tester with crossing functionality   | AU           | 2014100628        | 2014100628   |
| SYSTEMS AND METHODS FOR DETERMINING ROUTE LOCATION                                    | AU           | 2014100528        | 2014100528   |
| Systems and Methods for Determining Route Location                                    | US           | 13/899821         | 8924066      |
| Detection and position measurement system for cars in railways and other environments | US           | 14/154297         | NA           |
| SYSTEMS AND METHODS FOR VEHICLE POSITION DETECTION                                    | WO           | PCT/US2015/010392 |              |
| Systems and methods for controlling warnings at vehicle crossings                     | US           | 14/285231         | 14/285231    |
| Systems and methods for controlling warnings at vehicle crossings                     | AU           |                   | 2014100572   |
| A METHOD AND SYSTEM FOR TIMETABLE OPTIMIZATION UTILIZING ENERGY CONSUMPTION FACTORS   | WO           | PCT/US2015/011972 |              |
| Cold Movement Detector Onboard Vehicle  | WO           | PCT/US2015/20081  |              |
| SYSTEMS AND METHODS FOR COLD MOVEMENT DETECTION                                       | US           | 14/644764         |              |
| POINTS MACHINE MONITORING SYSTEM AND METHOD   | AU           | 2014265085        | NA           |

| Short title PAF   | Country Code | Filing Number         | Grant Number |
|---|--------------|-----------------------|--------------|
| POINTS MACHINE MONITORING SYSTEM AND METHOD   | BR           | 10201402918<br>0-6    | NA           |
| SYSTEMS AND METHODS FOR PREDICTIVE MAINTENANCE OF CROSSINGS                               | US           | 14/260338             | NA           |
| SYSTEMS AND METHODS FOR PREDICTIVE MAINTENANCE OF CROSSINGS                               | AU           | 2015200059.0          |              |
| SYSTEMS AND METHODS FOR PREDICTIVE MAINTENANCE OF CROSSINGS                               | BR           | 10201500042<br>9-0    |              |
| SYSTEM AND METHOD FOR TESTING INSULATED JOINTS IN TRACK SYSTEMS                           | US           | 14/631907             |              |
| PROTECTION FOR WIRELESS LINKS AT TRAIN CARRIAGE ROOFTOPS AGAINST JAMMING AND INTERFERENCE | US           | 62/115494             |              |
| PROTECTION FOR WIRELESS LINKS AT TRAIN CARRIAGE ROOFTOPS AGAINST JAMMING AND INTERFERENCE | US           | 14/678036             |              |
| ZONE-BASED SECURITY ARCHITECTURE FOR INTRA-VEHICULAR WIRELESS COMMUNICATION               | US           | 14/540145             |              |
| VIBRATION MONITORING SYSTEM AND METHOD  | US           | 14/501177             | NA           |
| LOCATION AND/OR DIRECTION OF TRAVEL DETECTION SYSTEM AND METHOD                           | US           | 14/698130             |              |
| SYSTEM, APPARATUS AND METHOD FOR MOUNTING A DEVICE  | US           | 62/161583             |              |
| EQUIPMENT LIFE SPAN MONITORING SYSTEM AND METHOD  | US           | 62/173418             |              |
| METHOD AND APPARATUS FOR SWITCHING DEVICE   | WO           | PCT/CN2015/<br>076757 |              |
| VIBRATION MONITORING SYSTEM AND METHOD  | US           | 62/161712             |              |
| INTEGRATED LAMP ASSEMBLY AND METHOD   | US           | 62/161623             |              |

| Short title PAF  | Country Code | Filing Number   | Grant Number |
|--|--------------|-----------------|--------------|
| Track Warrant Authority Validation and Allocation using an Associative Logical Node Topology | US           | 62/170250       |              |
| SYSTEM AND METHOD FOR CONTROLLING A WAYSIDE DEVICE   | US           | 62/184936       |              |
| Dispositif de signalment a surete integree de materiau roulant                               | IT           |                 | 2002FI0220   |
| Wayside rail lubrication apparatus and method  | US           | 10/023246       | 6854563      |
| Wayside rail lubrication apparatus and method  | US           | 11/054868       | 7121383      |
| METHODS AND SYSTEM FOR JOINTLESS TRACK CIRCUITS USING PASSIVE SIGNALING                      | IN           | 3555/DELNP/2009 | NA           |
| DATA MANAGEMENT SYSTEM AND METHOD (Prototype pattern)  | US           | 62/174586       |              |
| SYSTEMS AND METHODS FOR TESTING WAYSIDE UNITS  | US           | 14/146882       | NA           |
| SURGE ARRESTOR UNIT  | US           | 08/140678       | 5436787      |
| FIXED DATA TRANSMISSION SYSTEM FOR CONTROLLING TRAIN MOVEMENT                                | US           | 08/259892       | 5452870      |
| CLAMP MOUNT FOR CONCRETE TIES  | US           | 08/261000       | 5507434      |
| INCREMENTAL TRAIN CONTROL SYSTEM   | US           | 08/293064       | 5533695      |
| ISLAND PRESENCE DETECTOR   | US           | 08/939777       | 5924652      |
| RAILROAD SWITCH POINT POSITION SENSING SYSTEM AND METHOD                                     | US           | 08/816167       | 5806809      |
| SYSTEM FOR ELECTRICALLY CONNECTING CONDUCTOR TO TRACK MEMBER                                 | US           | 13/637266       | 8764461      |

| Short title PAF  | Country Code | Filing Number | Grant Number |
|--|--------------|---------------|--------------|
| SYSTEMS AND METHOD FOR A CROSSING EQUIPMENT CONTROLLER | US           | 13/448430     | 9/16/2014    |
| CURRENT SENSOR   | US           | 13/158235     | 9128128      |



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**Extrait Kbis**

**EXTRAIT D'IMMATRICULATION PRINCIPALE AU REGISTRE DU COMMERCE ET DES SOCIÉTÉS**  
à jour au 4 février 2016

**IDENTIFICATION DE LA PERSONNE MORALE**

|   |   |
|---|---|
| <i>Immatriculation au RCS, numéro</i>       | 752 364 778 R.C.S. Bobigny                      |
| <i>Date d'immatriculation</i>               | 13/11/2015                                      |
| <i>Transfert du</i>                         | R.C.S. de Nanterre en date du 05/10/2015        |
| <i>Dénomination ou raison sociale</i>       | <b>ALSTOM TRANSPORT TECHNOLOGIES</b>            |
| <i>Forme juridique</i>                      | Société par actions simplifiée à associé unique |
| <i>Capital social</i>                       | 673 015 000,00 Euros                            |
| <i>Adresse du siège</i>                     | 48 Rue Albert Dhalenne 93400 Saint-Ouen         |
| <i>Activités principales</i>                | Holding   |
| <i>Durée de la personne morale</i>          | Jusqu'au 25/06/2111                             |
| <i>Date de clôture de l'exercice social</i> | 31 mars   |

**GESTION, DIRECTION, ADMINISTRATION, CONTRÔLE, ASSOCIÉS OU MEMBRES**

**Président**

|                                  |  |
|----------------------------------|--|
| <i>Nom, prénoms</i>              | LE GOFF Pierrick                           |
| <i>Date et lieu de naissance</i> | Le 05/11/1966 à Bayeux (14)                |
| <i>Nationalité</i>               | Française                                  |
| <i>Domicile personnel</i>        | 64 BIS Avenue Raymond Poincaré 75016 Paris |

**Commissaire aux comptes titulaire**

|                                       |   |
|---------------------------------------|---|
| <i>Dénomination</i>                   | MAZARS  |
| <i>Forme juridique</i>                | Société anonyme   |
| <i>Adresse</i>                        | 61 Rue HENRI REGNAULT - TOUR EXALTIS - 92400 Courbevoie |
| <i>Immatriculation au RCS, numéro</i> | 784 824 153 R.C.S. Nanterre                             |

**Commissaire aux comptes suppléant**

|  |  |
|--|--|
| <i>Nom, prénoms</i>                                  | EL NOUCHI Jean-Maurice                 |
| <i>Date et lieu de naissance</i>                     | Le 05/04/1965 à Dugny (93)             |
| <i>Nationalité</i>                                   | Française                              |
| <i>Domicile personnel ou adresse professionnelle</i> | 61 Rue Henri Regnault 92400 Courbevoie |

**RENSEIGNEMENTS RELATIFS A L'ACTIVITÉ ET A L'ÉTABLISSEMENT PRINCIPAL**

|  |   |
|--|---|
| <i>Adresse de l'établissement</i>        | 48 Rue Albert Dhalenne 93400 Saint-Ouen   |
| <i>Activité(s) exercée(s)</i>            | L'acquisition, l'exploitation et la gestion par tous moyens de tous biens immobiliers, meubles corporels et incorporels, de tous brevets, licences, procédés et marques réalisés ou à réaliser par la société dans le domaine du transport ferroviaire. |
| <i>Date de commencement d'activité</i>   | 31/03/2013  |
| <i>Origine du fonds ou de l'activité</i> | Création  |
| <i>Mode d'exploitation</i>               | Exploitation directe  |

**OBSERVATIONS ET RENSEIGNEMENTS COMPLÉMENTAIRES**

|   |  |
|---|--|
| <i>- Mention n° 81038 du 11/04/2013</i> | Réalisation apport de la société ALSTOM TRANSPORT SA 389 191 982 RCS NANTERRE - à compter 31/03/2013 |
|---|--|

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- *Mention n° 1189 du 13/11/2015*

La société ne conserve aucune activité à son ancien siège date d'effet 5 octobre 2015

Le Greffier



FIN DE L'EXTRAIT