

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

Assignment ID: PATI740854

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
SEQUENCE:	1

CONVEYING PARTY DATA

Name	Execution Date
Alstom Holdings SA	07/03/2024

RECEIVING PARTY DATA

Company Name:	Alstom Signaling Inc.
Street Address:	4545 East River Road
City:	West Henrietta
State/Country:	NEW YORK
Postal Code:	14586

PROPERTY NUMBERS Total: 108

Property Type	Number
Application Number:	13952064
Application Number:	14980861
Application Number:	15281621
Application Number:	15093601
Application Number:	15281628
Application Number:	15462125
Application Number:	15466071
Application Number:	15904992
Application Number:	15466103
Application Number:	15466134
Application Number:	15452114
Application Number:	15685397
Application Number:	15910255
Application Number:	15910284
Application Number:	15902672
Application Number:	16059423
Application Number:	15899578
Application Number:	15834397
Application Number:	16055727

PATENT

Property Type	Number
Application Number:	16213034
Application Number:	16259243
Application Number:	16027630
Application Number:	15883657
Application Number:	16584271
Application Number:	16367936
Application Number:	16193444
Application Number:	16719482
Application Number:	16686533
Application Number:	16811244
Application Number:	16932169
Application Number:	17065626
Application Number:	17175996
Application Number:	17123055
Application Number:	17316361
Application Number:	17304104
Application Number:	17448825
Application Number:	18052829
Application Number:	17660557
Application Number:	18317693
Application Number:	18063039
Application Number:	10743591
Application Number:	11039643
Application Number:	11533384
Application Number:	11750486
Application Number:	12349996
Application Number:	12324032
Application Number:	12184014
Application Number:	12402607
Application Number:	12405654
Application Number:	12818472
Application Number:	12830081
Application Number:	13668507
Application Number:	13108379
Application Number:	13311252
Application Number:	13586909
Application Number:	14066884
Application Number:	13446659

Property Type	Number
Application Number:	13478448
Application Number:	13676279
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Application Number:	14049389
Application Number:	13910412
Application Number:	14148864
Application Number:	14146873
Application Number:	13899821
Application Number:	14285231
Application Number:	14168645
Application Number:	15114896
Application Number:	14260338
Application Number:	14631907
Application Number:	14501177
Application Number:	14698130
Application Number:	15153034
Application Number:	15178286
Application Number:	15153525
Application Number:	15889972
Application Number:	15192653
Application Number:	14146882
Application Number:	13637266
Application Number:	13448430
Application Number:	13158235
Application Number:	10881959
Application Number:	10820499
Application Number:	10882033
Application Number:	11005344
Application Number:	11005175
Application Number:	10898774
Application Number:	10955631
Application Number:	10988853
Application Number:	11248725
Application Number:	11167015
Application Number:	11272336
Application Number:	11317533
Application Number:	12374432
Application Number:	11350063

Property Type	Number
Application Number:	11651229
Application Number:	11342875
Application Number:	11669271
Application Number:	11591521
Application Number:	11733807
Application Number:	11796056
Application Number:	11757708
Application Number:	11821665
Application Number:	12116792
Application Number:	12048403
Application Number:	12139967
Application Number:	12046678
Application Number:	12852073

CORRESPONDENCE DATA

Fax Number: 3152188100

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.

Phone: 3152188530

Email: bskpto@bsk.com

Correspondent Name: Mr. David L. Nocilly

Address Line 1: One Lincoln Center

Address Line 4: Syracuse, NEW YORK 13202

ATTORNEY DOCKET NUMBER:	777W001
NAME OF SUBMITTER:	Mr. David Nocilly
SIGNATURE:	Mr. David Nocilly
DATE SIGNED:	01/08/2025

Total Attachments: 41

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INTELLECTUAL PROPERTY ASSIGNMENT AGREEMENT
entered between

ALSTOM HOLDINGS SA

and

ALSTOM SIGNALING INC.

BY AND BETWEEN:

ALSTOM Holdings SA

A French Société Anonyme duly existing and organized under the laws of France, registered with the Trade and Companies Registry of Bobigny (France) under SIREN 347 951 238, having its registered office located at 48 rue Albert Dhalenne 93400 Saint-Ouen, France,
Hereinafter referred to as "**AH**" or the "**Assignor**",

ON THE ONE HAND

AND

ALSTOM SIGNALING INC.

A company duly existing and organized under the laws of the state of Delaware, registered under the number 2243331 having its registered office located at 4545 East River Road, 14586 West Henrietta, New York, USA.

Hereinafter referred to as the "**Assignee**",

ON THE OTHER HAND

Each a "**Party**" or collectively as the "**Parties**".

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RECITALS

WHEREAS, ALSTOM Transport Holdings US Inc, a Delaware company, having its registered office located at 641 Lexington Avenue, 28th Floor, 10022 New York, United States of America, registered with the number 20-3999346 in the State of Delaware ("**ATH**") has entered into a Stock Purchase Agreement ("**SPA**") dated April 19, 2024 by and among Purchaser, Alstom S.A. and Assignee, pursuant to which ATH will sell to Purchaser one hundred percent (100%) of all of the issued and outstanding shares of common stock of Assignee.

WHEREAS, pursuant to the SPA, ATH has agreed to deliver, or cause to be delivered, executed copies of this Agreement as a condition to the Closing;

WHEREAS, Assignor owns certain intellectual property that is exclusively used (or exclusively held for use) in or that exclusively relates to the Assignee's or its subsidiaries' respective businesses, and

WHEREAS, Assignor wishes to assign and transfer to Assignee, and Assignee desires to accept and receive, the Transferred IPR (as defined below) on the terms and conditions set forth herein.

NOW, THEREFORE, in consideration of the premises and the mutual agreements, covenants, and obligations set forth herein and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged and accepted, the Parties, intending to be legally bound, hereby agree as follows:

ARTICLE 1 DEFINITIONS

Capitalized terms used in this Agreement (including in the Recitals) shall have the meanings defined in this ARTICLE 1 (Definitions).

"Affiliates" of any Person shall mean any Person directly or indirectly controlling, controlled by, or under common control with, such Person; provided, that, for the purposes of this definition, "control" (including, with correlative meanings, the terms "controlled by" and "under common control with"), as used with respect to any Person, shall mean the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of such Person, whether through the ownership of voting securities, by Contract or otherwise.

"Agreement" shall mean this intellectual property rights assignment agreement including all Schedules attached hereto.

"ALSTOM Group" shall mean ALSTOM SA, a French *société anonyme*, having its registered office 48, rue Albert Dhalenne, 93400 Saint-Ouen-sur-Seine, France, registered with the Trade and Companies Registry of Bobigny under number 389 058 447, together with its direct or indirect Affiliates.

"ATH" shall have the meaning set forth in the Recitals.

"Business Products and Components" shall mean those products and components listed in Schedule A attached hereto.

"Execution Date" shall mean the date of full execution of this Agreement by the Parties.

"Know-How" shall mean the technical, industrial and commercial information, know-how, and techniques documented in any form (including paper, electronically stored data, magnetic and optical), including drawings, formulas, test results, reports, project reports and testing procedures,

instruction and training manuals, tables of operating conditions, specifications, quotations, tables, lists and details of customers and suppliers, technical methods and procedures, and any other technical, industrial and commercial information and techniques, and whether or not protected by trade secret under applicable laws.

"Materials" shall mean all materials, documentation, data, information, plans, software code (whether object or source), drawings, photographs, samples, marketing materials, product configurations, test results, reports, project reports, instruction and training manuals, tables of operating conditions, specifications, quotations, tables, lists and details of customers and suppliers, advertising material, manuals, packaging material, product descriptions, customer documentation, leaflets, handouts, customer and supplier related product material used in connection with trade fairs, exhibits or presentation, marketing documents, and any other technical, industrial and commercial works, in each case, that are exclusively used (or exclusively held for use) in or exclusively relate to the Business Products and Components and includes, for clarity, all files and documents (including source code, Gerber files, bill of materials, and other documents) existing as of the Execution Date that are identified in the folder for such Business Product and Component in the ALSTOM document repository known as "AEC".

"Patent Rights" shall mean, with respect to patent or patent applications: (a) such patent or patent application; (b) any patent or patent application that claims priority to and is a divisional, continuation, reissue, renewal, reexamination, substitution or extension of any patent or patent application described in (a); (c) any patents issuing on any patent application described in (a) or (b), including any reissues, renewals, reexaminations, substitutions or extensions thereof; (d) any claim of a continuation-in-part application or patent (including any reissues, renewals, reexaminations, substitutions or extensions thereof) that is entitled to the priority date of, and is directed specifically to subject matter specifically described in, at least one of the patents or patent applications identified in (a), (b) or (c); and (e) any foreign counterpart (including PCTs) of any patent or patent application identified in (a), (b) or (c) or of the claims identified in (d).

"Person" shall mean any individual, sole proprietorship, partnership, firm, corporation, association, trust, unincorporated organization, joint venture, company, limited liability company or other entity.

"Price" shall have the meaning set forth in subpart (a) of ARTICLE 6 .

"Purchaser" shall mean Knorr Brake Holding Corporation.

"Retained Assets" shall mean any and all intellectual property listed in Schedule C attached hereto.

"SPA" shall have the meaning set forth in the Recitals.

"Third Party(ies)" shall mean any natural or legal person, either private or public, other than one of the Parties.

"Transferred IPR" shall mean (a) those patents, patent applications and invention disclosures set forth on Schedule B.1 attached hereto, together with all Patent Rights therein; (b) those trademarks set forth on Schedule B.2 attached hereto together with all goodwill symbolized thereby; (c) those domain name registrations set forth on Schedule B.3 attached hereto together with all goodwill symbolized thereby; (d) all software, trade secrets, copyrights, design rights, and Know-How, in each case of (d) that, as of the Execution Date, are (i) unregistered, (ii) owned by Assignor, and (iii) exclusively used (or exclusively held for use) in or exclusively relate to the Business Products and Components; and (e) all copyrights in and to any Materials; but in any event and for the sake of clarity, "Transferred IP" expressly excludes any and all Retained Assets and intellectual property rights of

Third Parties (including for clarity any open source software or components).

ARTICLE 2 ASSIGNMENT

Effective upon the Closing (as defined in the SPA), Assignor hereby absolutely and irrevocably sells, conveys, assigns, and transfers to Assignee, and Assignee (on behalf of itself and its successors and assigns) hereby purchases, accepts and acquires from Assignor, all of Assignor's entire worldwide right, title and interest in and to the Transferred IPR, including:

- (a) any and all rights in any applications to apply for and prosecute in any or all countries of the world for certificates of invention, utility models, patents, trademark registrations, copyright registrations, design registrations, domain name registrations, or other governmental grants or issuances of intellectual property rights of any type in or to any of the Transferred IPR and maintain, renew, perfect, enforce, or defend any registrations or issuances of any the foregoing applications;
- (b) all claims or causes of action (whether known or unknown, whether accruing before, on and/or after the date hereof, or whether currently pending, filed or otherwise) and other enforcement rights under, or on account of, any of the Transferred IPR, including for: (i) damages or restitution, (ii) injunctive relief, or (iii) any other legal or equitable remedies or relief for any kind for past, current and future infringement, misappropriation, dilution, misuse, breach, default, or other violation thereof; and
- (c) all royalties, fees, damages, income, proceeds, or other payments and the right to collect the foregoing now or hereafter due or payable under or on account of any of the Transferred IPR,

all of the foregoing to be held and enjoyed by Assignee for its own use and enjoyment and 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 and sale had not been made, as assignee of its entire right, title and interest therein.

Effective as of the Closing (as defined in the SPA), Assignee is the sole and exclusive owner of the Transferred IPR.

For the sake of clarity, as regards the patents, patent applications, and trademarks included in the Transferred IPR, as set forth on Schedule B to this Agreement, this assignment covers all registrations and applications for registration thereof, all rights therein provided by international treaties, national or regional conventions, and all reissues, extensions and renewals thereof, as well as the priority rights attached to those patents, design registrations and trademarks, if any.

ARTICLE 3 PROVISIONS SPECIFIC TO COPYRIGHTS

- a. For clarity and without any derogation to the provisions of ARTICLE 2 of this Agreement, the provisions of this ARTICLE 3 aim to specify the terms of the assignment of any copyrights included in the Transferred IPR, including any copyrights relating to the Materials.
- b. For any Materials, all copyrights relating thereto are assigned for the maximum legal period of protection under French law and any other national or international regulation applying to such rights with no limitation whatsoever, and include the following rights:

- i. the exclusive right to use the Materials to manufacture, assemble, sell, supply, and maintain the Business Products and Components;
 - ii. the exclusive right to reproduce, duplicate, print, record, permanently or temporarily, by any means and in any form, all or part of the Materials on any existing or future media, including paper, digital, computing or online, for any purpose whatsoever, which could be informative, commercial or advertising, including loading, displaying, running, transmitting or storing the Materials, on all sites;
 - iii. the exclusive right to directly or indirectly exploit, adapt, modernize, modify, arrange, monitor, maintain, correct errors, reverse engineer or decompile, add to, incorporate all or part of the Materials, and the reproduction of the results thereof, in any graphical form and/or in any environment, especially online, for any purpose whatsoever, which could be informative or commercial;
 - iv. the exclusive right to integrate interfaces in the Materials in whole or in part;
 - v. the exclusive right to translate all or part of the Materials (into any language, in particular executable by a computer), for any purpose, which could be informative, commercial or for advertising;
 - vi. the exclusive right to represent, communicate, perform all or part of the Materials on any existing or future communication media on a wire or wireless basis, including digital, online, by radio relay channel, cable or satellite for any purpose, which could be informative, commercial or for advertising;
 - vii. the exclusive right to market, license, sublicense, rent, lease and distribute by any means all or part of the Materials in exchange for any consideration or for free;
 - viii. the exclusive right to file and register in its name, as the case may be, the copyrights relating to the Materials, with any appropriate intellectual property office, in particular as trademark and/or design. For the avoidance of doubt, this right does not entail an obligation on the part of Assignee to exploit the Materials.
- c. For clarity, regarding those portions of the Materials constituting a software, the foregoing assignment shall cover any copyrights in or to both the object code and the source code of those portions and documentation thereto.

ARTICLE 4 TECHNOLOGY TRANSFER

The Parties acknowledge and agree that, as of the Closing, the Assignee is in possession of (or after the Closing will become, pursuant to the Transitional Services Agreement (as defined in the SPA), in possession of) tangible embodiments of the Transferred IPR and Materials and therefore Assignor has no obligation under this Agreement to deliver or provide any embodiments of any Transferred IPR or Materials nor any other technology transfer, training, consulting, support, maintenance, or other services.

ARTICLE 5 ADMINISTRATION AND INFRINGEMENT OF THE TRANSFERRED IPR

- (a) Nothing in this Agreement shall oblige Assignee or Assignor to apply for, maintain or defend any intellectual property rights in any country.
- (b) For the avoidance of doubt, from and after the Closing, the application, prosecution and defense of the Transferred IPR and the administrative measures taken to maintain or abandon such rights shall, as between the Parties, be the sole right and responsibility of Assignee and Assignee will have, as between the Parties, the sole right to sue, counterclaim and recover for past, present and future infringement, misappropriation or violation of the Transferred IPR.

ARTICLE 6 PRICE

- (a) **Price.** In total, Assignee shall pay to Assignor the fixed and final price of ninety-eight million, two hundred thousand United States Dollars (\$ 98,200,000) (the "**Price**"), in consideration of the value of the Transferred IPR. This amount breaks down as follows:
 - The fixed and final price of 1 EUR (one Euro) in consideration of the trademarks covered by this Agreement; and
 - The fixed and final price of ninety-eight million, one-hundred ninety-nine thousand, and nine-hundred ninety-nine United States Dollars (\$ 98,199,999) in consideration of the remainder of the Transferred IPR assigned under this Agreement.
- (b) **Payment.** The Price shall be paid or be deemed paid in full as of immediately prior to 11:59 P.M. Eastern Time on the day immediately prior to the Closing Date (as defined in the SPA).
- (c) **Invoices.** For clarity, Assignor shall issue the respective invoice to Assignee.
- (d) **Taxes.** The sale of the IP Rights shall not be subject to VAT in France in accordance with article 259,1 of the French tax code. Assignee shall be liable for all taxes and duties in relation with this Agreement, including all indirect taxes including sales taxes, service taxes and duties (as applicable).
- (e) **Confidentiality.** Assignee acknowledges and agrees that (i) the Price and the other financial terms of this Agreement constitute the confidential information of Assignor and (ii) from and after the Execution Date, Assignee shall maintain the confidentiality of the Price and the other financial terms of this Agreement and shall not use or disclose to any third party the Price and the other financial terms of this Agreement for any purpose without the prior written consent of Assignor (in its sole discretion).

ARTICLE 7 WARRANTIES

(a) Representations and Warranties

Each Party represents and warrants to the other that it has the corporate power and authority to (a) enter into this Agreement and (b) perform its obligations hereunder.

(b) Exclusion of Representations and Warranties

THE PARTIES ACKNOWLEDGE AND AGREE THAT THE TRANSFERRED IPR ARE ASSIGNED "AS-IS" AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, ASSIGNOR DOES NOT MAKE ANY WARRANTIES OR REPRESENTATIONS UNDER THIS AGREEMENT, WHETHER IMPLIED,

EXPRESS, OR STATUTORY, INCLUDING THE WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, NON-INFRINGEMENT OF THIRD PARTY RIGHTS, QUALITY, PERFORMANCE, USEFULNESS, COMMERCIAL UTILITY, ADEQUACY, COMPLIANCE WITH ANY LAW, DOMESTIC OR FOREIGN, RESULTS, ENFORCEABILITY, OR VALIDITY OF ANY TRANSFERRED IPR OR ANY IMPLIED WARRANTIES ARISING FROM COURSE OF DEALING OR COURSE OF PERFORMANCE, AND SUCH OTHER WARRANTIES AND REPRESENTATIONS ARE HEREBY EXPRESSLY EXCLUDED AND DISCLAIMED TO THE FULLEST EXTENT PERMITTED BY LAW. FOR CLARITY, THE FOREGOING IS WITHOUT PREJUDICE TO THE REPRESENTATIONS, WARRANTIES AND OTHER PROVISIONS OF THE SPA.

ARTICLE 8 BINDING EFFECT

The provisions of this Agreement shall be binding upon and shall inure to the benefit of the Parties and their respective successors and assigns. Except expressly provided herein, no provision of this Agreement is intended to confer any rights, benefits, remedies or Liabilities hereunder upon any Person other than the Parties and their respective successors and assigns.

ARTICLE 9 CONSTRUCTION

The definitions in the body of this Agreement shall apply equally to both the singular and plural forms of the terms defined. Whenever the context may require, any pronoun shall include the corresponding masculine, feminine and neuter forms. The words "include", "includes" and "including" shall be deemed to be followed by the phrase "without limitation." The words "herein", "hereof" and "hereunder" and words of similar import refer to this Agreement (including the Schedules to this Agreement) in its entirety and not to any part hereof unless the context shall otherwise require. All references herein to Articles, Sections, and Schedules shall be deemed references to Articles and Sections of, and Schedules to, this Agreement unless the context shall otherwise require. Unless the context shall otherwise require, any references to this Agreement, any other agreement or other instrument or statute or regulation are to it as amended and supplemented from time to time (and, in the case of a statute or regulation, to any successor provisions). Any reference to any federal, state, local or foreign statute or law shall be deemed also to refer to all rules and regulations promulgated thereunder, unless the context requires otherwise. Any reference in this Agreement to a "day" or a number of "days" (without explicit reference to business days) shall be interpreted as a reference to a calendar day or number of calendar days. If any action is to be taken or given on or by a particular calendar day, and such calendar day is not a business day, then such action may be deferred until the next business day. For the purposes of this Agreement "business day" shall mean any day except a Saturday, a Sunday or any other day on which commercial banks are required or authorized to close in New York, New York, Paris, France or Munich, Germany.

ARTICLE 10 NOTICES

(a) Notices to Party

All notices, requests and other communications required or permitted under, or otherwise made in connection with, this Agreement, shall be in writing and shall be deemed to have been duly given (a) when delivered in person, (b) when transmitted by electronic mail (in which case effectiveness shall be the earlier of (i) upon confirmation of receipt (excluding out-of-office or other similar automated replies) or (ii) in the event that confirmation of receipt is not delivered, if such electronic mail is sent prior to 5:00 p.m. Eastern Time on a business day, on such business day, and if such electronic mail is sent on or after 5:00 p.m. Eastern Time on a business day or sent not on a business day, the next business day), (c) upon receipt after dispatch by registered or certified mail, postage prepaid or (d) on

the next business day if transmitted by national overnight courier (with confirmation of delivery), in each case, addressed as follows:

Assignor:

ALSTOM Holdings SA

Address: 48 rue Albert Dhalenne 93400 Saint-Ouen-sur-Seine

E-mail: frederic.lerner@alstomgroup.com;

For the attention of: Frédéric LERNER

Vice President Legal Procurement & Legal Intellectual Property

with a copy (which shall not constitute notice) to:

White & Case LLP

1221 Avenue of the Americas

New York, New York 10020-1095

Attention: Kimberly Petillo-Décosard; Caitlin Powell

Gimpel

Email: kimberly.petillo-decosard@whitecase.com;

caitlin.powell.gimpel@whitecase.com

Assignee:

ALSTOM Signaling Inc. c/o Knorr-Bremse AG

Corporate IP Department

Moosacher Str. 80

D-80809 Munich, Germany

Attention: Dr. Christina Heinzl, Head of Trademarks & IP Legal, L/P

E-mail: Christina.Heinzl@knorr-bremse.com

with copies (which shall not constitute notice) to:

Hengeler Mueller

Leopoldstraße 8-10

80802 Munich, Germany

Attention: Hans-Jörg Ziegenhain

E-mail: Hans-Joerg-Ziegenhain@hengeler.com

and

Hughes Hubbard & Reed LLP

One Battery Park Plaza

New York, New York

10004-1482

Attention: Gerold Niggemann

E-mail: Gerold.Niggemann@hugheshubbard.com

ARTICLE 11 RELATIONSHIP OF THE PARTIES

Nothing in this Agreement shall be interpreted or construed to create any relationship of agency, association, joint venture, or partnership between the Parties or to impose any partnership obligation or liability upon either Party. Neither Party shall have any right, power or authority to enter into any

contract or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party, unless expressly agreed otherwise in writing.

ARTICLE 12 SEVERABILITY

If any term, provision, covenant or restriction of this Agreement is held by a court of competent jurisdiction or other governmental entity to be invalid, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions of this Agreement shall remain in full force and effect and shall in no way be affected, impaired or invalidated. Upon such a determination, the Parties shall negotiate in good faith to modify this Agreement so as to effect the original intent of the Parties as closely as possible in an acceptable manner in order that the transactions contemplated by this Agreement be consummated as originally contemplated to the fullest extent possible.

ARTICLE 13 ENTIRE AGREEMENT

This Agreement together with the SPA and the Transaction Agreements (as defined in the SPA) constitutes the entire agreement and understanding of the Parties with respect to the subject matter of this Agreement, superseding all previous agreements, understandings or arrangements.

ARTICLE 14 WAIVER; COUNTERPARTS; EFFECTIVENESS

(a) Waiver

No failure or delay by any Party in exercising any right, power or privilege hereunder shall operate as a waiver thereof nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or privilege.

(b) Counterparts; Effectiveness

This Agreement may be signed in any number of counterparts, each of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument. This Agreement shall become effective when each Party shall have received a counterpart hereof signed by the other Party. Until and unless each Party has received a counterpart hereof signed by the other Party, this Agreement shall have no effect and no Party shall have any right or obligation hereunder (whether by virtue of any other oral or written agreement or other communication). The exchange of a fully executed Agreement (in counterparts or otherwise) by electronic transmission in .PDF format or by facsimile shall be sufficient to bind the Parties to the terms and conditions of this Agreement.

ARTICLE 15 LANGUAGE

The Agreement is written in the English language.

ARTICLE 16 RECORDAL OF ASSIGNMENT

Assignor hereby authorizes the Commissioners for Patents and Trademarks in the United States Patent and Trademark Office and the Register of Copyrights in the United States Copyright Office, and the officials of all corresponding foreign government entities, offices and agencies in any applicable jurisdiction to record and register this Agreement upon request by Assignee.

To the extent any of the Transferred IPR is registered in any intellectual property office register or other competent body, Assignee shall promptly file for the change in ownership of the respective Transferred IPR with the relevant intellectual property office register or other competent body at Assignee's sole cost and expense. Assignor will provide, at no cost for the Assignor, reasonable

support necessary for the registration of the change in ownership with the relevant register or other competent body. Assignee will provide proof of such filings for the recordal of change in ownership to Assignor upon Assignor's request.

In the event of recordal of the present assignment with an intellectual property office, such registration shall be made on the basis of a deed confirming the assignment or extracts thereof, which shall include only the elements strictly necessary for registration and shall not include any confidential information of either Party (including the Price or terms of this Agreement). Assignor undertakes to sign, upon Assignee's request, all necessary documents to proceed with such recordal.

For clarity, all costs and expenses incurred in order to record this Agreement with any Intellectual Property office with respect to the Transferred IPR shall be solely borne by the Assignee.

ARTICLE 17 CONSENTS OR APPROVALS

Unless expressly specified to the contrary in respect of any particular consent or approval, any consent or approval given by a Party pursuant to the terms of this Agreement shall not be valid and binding unless it has been given in writing and signed by or on behalf of the Party giving it.

ARTICLE 18 APPLICABLE LAW AND WAIVER OF JURY TRIAL

(a) THIS AGREEMENT AND THE LEGAL RELATIONS BETWEEN THE PARTIES SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK, WITHOUT REGARD TO THE CONFLICT OF LAWS RULES THEREOF. THE STATE OR FEDERAL COURTS LOCATED WITHIN THE COUNTY OF NEW YORK IN THE STATE OF NEW YORK SHALL HAVE EXCLUSIVE JURISDICTION OVER ANY AND ALL DISPUTES BETWEEN THE PARTIES, WHETHER IN LAW OR EQUITY, ARISING OUT OF OR RELATING TO THIS AGREEMENT AND THE AGREEMENTS, INSTRUMENTS AND DOCUMENTS CONTEMPLATED HEREBY AND THE PARTIES CONSENT TO AND AGREE TO SUBMIT TO THE EXCLUSIVE JURISDICTION OF SUCH COURTS. EACH OF THE PARTIES HEREBY WAIVES AND AGREES NOT TO ASSERT IN ANY SUCH DISPUTE, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY CLAIM THAT (I) SUCH PARTY IS NOT PERSONALLY SUBJECT TO THE JURISDICTION OF SUCH COURTS, (II) SUCH PARTY AND SUCH PARTY'S PROPERTY IS IMMUNE FROM ANY LEGAL PROCESS ISSUED BY SUCH COURTS OR (III) ANY LITIGATION OR OTHER PROCEEDING COMMENCED IN SUCH COURTS IS BROUGHT IN AN INCONVENIENT FORUM. THE PARTIES HEREBY AGREE THAT MAILING OF PROCESS OR OTHER PAPERS IN CONNECTION WITH ANY SUCH ACTION OR PROCEEDING IN THE MANNER PROVIDED IN ARTICLE 11, OR IN SUCH OTHER MANNER AS MAY BE PERMITTED BY LAW, SHALL BE VALID AND SUFFICIENT SERVICE THEREOF AND HEREBY WAIVE ANY OBJECTIONS TO SERVICE ACCOMPLISHED IN THE MANNER HEREIN PROVIDED.

(b) EACH OF THE PARTIES TO THIS AGREEMENT HEREBY IRREVOCABLY WAIVES, AND AGREES TO CAUSE ITS SUBSIDIARIES TO WAIVE, ALL RIGHT TO A TRIAL BY JURY IN ANY ACTION, PROCEEDING OR COUNTERCLAIM ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.

ARTICLE 19 SCHEDULES

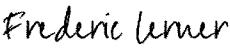
Each of the following Schedules shall be construed with and as an integral part of the Agreement to the same extent as if the same has been set forth verbatim herein:

[Remainder of page intentionally left blank]

IN WITNESS THEREOF, each of the Parties has duly executed this Agreement by its duly authorized representatives.

ALSTOM HOLDINGS SA

By:

DocuSigned by:

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Name: Frédéric Lerner

Title: Authorized Representative

Date: 03 juillet 2024

ALSTOM SIGNALING Inc

By:

Name: Guillaume Denis

Title: Authorized Representative

Date:

IN WITNESS THEREOF, each of the Parties has duly executed this Agreement by its duly authorized representatives.

ALSTOM HOLDINGS SA

By:

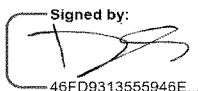
Name: Frédéric Lerner

Title: Authorized Representative

Date:

ALSTOM SIGNALING Inc

By:

Signed by:

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Name: Guillaume Denis

Title: Authorized Representative

Date: 03 July 2024

SCHEDULE B – REGISTERED TRANSFERRED IPR: PATENTS, TRADEMARKS AND DOMAIN NAMES

B.1. Patents, Patent Applications, and Invention Disclosures

Jurisdiction	Title	App. No.	App. Date	Reg. No.	Reg. Date	Status	Record Owner	Beneficial Owner (if different from Record Owner)
US	Vital Current Sensor suitable for railway applications	13/952064	7/26/2013	9701327	7/11/2017	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
BR	Railroad switch machine controller	BR102016030641-8	12/27/2016	1020160306418	5/9/2023	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
MX	Railroad switch machine controller	MX/a/2016/017319	12/20/2016	380326	3/3/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Railroad switch machine controller	14/980861	12/28/2015	9889867	2/13/2018	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AU	Wayside communication and train detection using power substation lines	2017235902	9/26/2017	2017235902	6/30/2022	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
BR	Wayside communication and train detection using power substation lines	BR1020170208419	9/28/2017	1020170208419	4/25/2023	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
CA	Wayside communication and train detection using power substation lines	2980226	9/22/2017			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
US	Wayside communication and train detection using power substation lines	15/281621	9/30/2016	10293840	5/21/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Wayside searchlight signal LED replacement system	15/093601	4/7/2016	9622311	4/11/2017	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
CA	Lidar based equipment positioning surveillance	2980808	9/28/2017			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings

US	Lidar based equipment positioning surveillance	15/281628	9/30/2016	10094657	10/9/2018	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AU	Track code transponder	2018201907	3/16/2018	2018201907	9/1/2022	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
BR	Track code transponder	1020180052330	3/16/2018		Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings	
CA	Track code transponder	2996530	2/26/2018		Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings	
US	Track code transponder	15/462125	3/17/2017	10202132	2/12/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AU	Wireless crossing island using reflective radar	2018201898	3/16/2018	2018201898	6/9/2022	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
BR	Wireless crossing island using reflective radar	1020180054724	3/20/2018		Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings	
CA	Wireless crossing island using reflective radar	2996737	2/27/2018		Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings	
MX	Wireless crossing island using reflective radar	MX/a/2018/003247	3/15/2018	379404	1/27/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Wireless crossing island using reflective radar	15/466071	3/22/2017	10479381	11/19/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Wireless crossing island using reflective radar	15/904992	2/26/2018	10471978	11/12/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AU	Wireless crossing island using wireless communication beam	2018201890	3/16/2018	2018201890	6/16/2022	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
BR	Wireless crossing island using wireless communication beam	1020180055526	3/21/2018		Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings	
CA	Wireless crossing island using wireless communication beam	2997844	3/8/2018		Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings	
MX	Wireless crossing island using wireless communication beam	MX/a/2018/003065	3/12/2018	379403	1/27/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Wireless crossing island using wireless communication beam	15/466103	3/22/2017	10479383	11/19/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AU	Wireless crossing island using virtual occupancy & messaging	2018201912	3/16/2018	2018201912	6/9/2022	Granted	ALSTOM Transport Technologies	ALSTOM Holdings

BR	Wireless crossing island using virtual occupancy & messaging	1020180055542	3/21/2018			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
CA	Wireless crossing island using virtual occupancy & messaging	2997854	3/8/2018			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
MX	Wireless crossing island using virtual occupancy & messaging	MX/a/2018/003063	3/12/2018	377042	11/6/2020	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Wireless crossing island using virtual occupancy & messaging	15/466134	3/22/2017	10562555	2/18/2020	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
CA	Jointless track circuit boundary definition	2995674	2/16/2018			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
US	Jointless track circuit boundary definition	15/452114	3/7/2017	10427700	10/1/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
CA	Switch/point machine integrated voltage/current processor module	3012510	7/25/2018			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
US	Switch/point machine integrated voltage/current processor module	15/685397	8/24/2017	10,710,617	7/14/2020	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
FR	Low conductivity metallic insulated joint	19160010.5	2/28/2019	3533928	12/15/2021	Granted	ALSTOM Holdings	
IT	Low conductivity metallic insulated joint	19160010.5	2/28/2019	502022000017876	12/15/2021	Granted	ALSTOM Holdings	
US	Low conductivity metallic insulated joint	15/910255	3/2/2018	11001974	5/11/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AU	Use of High precision GPS and regular GPS to vitally figure out location.	2019201373	2/27/2019			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
CN	Use of High precision GPS and regular GPS to vitally figure out location.	201910160453.3	3/4/2019			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
CO	Use of High precision GPS and regular GPS to vitally figure out location.	NC20190001638	2/22/2019	40540	9/26/2022	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Use of High precision GPS and regular GPS to vitally figure out location.	15/910284	3/2/2018	10661817	5/26/2020	Granted	ALSTOM Transport Technologies	ALSTOM Holdings

AU	Use of Machine Vision coupled with other technologies to Viallyly identify rail track.	2019201157	2/19/2019	2019201157	6/1/2023	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
CA	Use of Machine Vision coupled with other technologies to Viallyly identify rail track.	3033871	2/12/2019			Published	ALSTOM Transport Technologies	ALSTOM Holdings
CN	Use of Machine Vision coupled with other technologies to Viallyly identify rail track.	201910133572.X	2/22/2019			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
US	Use of Machine Vision coupled with other technologies to Viallyly identify rail track.	15/902672	2/22/2018	10,679,505	6/9/2020	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
CA	Use of a VITAL camera configuration to detect trains at a crossing	3051338	8/6/2019			Published	ALSTOM Transport Technologies	ALSTOM Holdings
BR	Use of a VITAL camera configuration to detect trains at a crossing	BR1020190164751	8/8/2019			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
AU	Use of a VITAL camera configuration to detect trains at a crossing	2019213311	8/6/2019	2019213311	3/23/2023	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
FR	Use of a VITAL camera configuration to detect trains at a crossing	19190992.8	8/9/2019	3608202	6/23/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AT	Use of a VITAL camera configuration to detect trains at a crossing	19190992.8	8/9/2019	3608202	6/23/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
BE	Use of a VITAL camera configuration to detect trains at a crossing	19190992.8	8/9/2019	3608202	6/23/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
DE	Use of a VITAL camera configuration to detect trains at a crossing	19190992.8	8/9/2019	3608202	6/23/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
GB	Use of a VITAL camera configuration to detect trains at a crossing	19190992.8	8/9/2019	3608202	6/23/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
NO	Use of a VITAL camera configuration to detect trains at a crossing	19190992.8	8/9/2019	3608202	6/23/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
TR	Use of a VITAL camera configuration to detect trains at a crossing	19190992.8	8/9/2019	3608202	6/23/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings

US	Use of a VITAL camera configuration to detect trains at a crossing	16/059423	8/9/2018	10946883	3/16/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AU	Train & broken rail location determination using dc track current	2019200790	2/6/2019	2019200790	3/23/2023	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
BR	Train & broken rail location determination using dc track current	1020190032910	2/18/2019			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
CA	Train & broken rail location determination using dc track current	3033358	2/8/2019			Published	ALSTOM Transport Technologies	ALSTOM Holdings
MX	Train & broken rail location determination using dc track current	MX/a/2019/001775	2/12/2019	393747	7/7/2022	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Train & broken rail location determination using dc track current	15/899578	2/20/2018	10647338	5/12/2020	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Use of RAT array for moving block train detection	15/834397	12/7/2017	10457304	10/29/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
CA	Wireless crossing island using magnetometers	3050944	7/30/2019			Published	ALSTOM Transport Technologies	ALSTOM Holdings
MX	Wireless crossing island using magnetometers	MX/a/2019/008899	7/26/2019	398845	1/3/2023	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Wireless crossing island using magnetometers	16/055727	8/6/2018	10988151	4/27/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Means to detect track train is traveling on using fiber optic cables	16/213034	12/7/2018	11124211	9/21/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AU	Wayside train detection and boundary definition by way of fiber optic signal disturbance	2020200493	1/23/2020	2020200493	6/8/2023	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
CA	Wayside train detection and boundary definition by way of fiber optic signal disturbance	3069922	1/24/2020			Published	ALSTOM Transport Technologies	ALSTOM Holdings
US	Wayside train detection and boundary definition by way of fiber optic signal disturbance	16/259243	1/28/2019	10614708	4/7/2020	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Featureless Classification of Switch Machine Data using Wavelet Scattering	16/027630	7/5/2018	11186304	11/30/2022	Granted	ALSTOM Transport Technologies FLORIDA	ALSTOM Holdings FLORIDA INSTITUTE OF TECHNOLOGY (F.L.T)

	Transform and k Nearest Neighbour Algorithms						INSTITUTE OF TECHNOLOGY (I.I.T)	
US	Track wire magnetic connectors	15/883657	1/30/2018	10533288	1/14/2020	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
EP	Relay Monitoring Apparatus and Method	20198125.5	9/24/2020			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
CA	Relay Monitoring Apparatus and Method	3094175	9/24/2020			Published	ALSTOM Transport Technologies	ALSTOM Holdings
US	Relay Monitoring Apparatus and Method	16/584271	9/26/2019	11004638	5/11/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AU	Transfer function to enable self adjusting track circuits	2020202071	3/23/2020			Published	ALSTOM Transport Technologies	ALSTOM Holdings
BR	Transfer function to enable self adjusting track circuits	BR102020005275-6	3/17/2020			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
IT	Transfer function to enable self adjusting track circuits	102020000006310	3/25/2020	102020000006310	5/20/2022	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
MX	Transfer function to enable self adjusting track circuits	MX/a/2020/003309	3/23/2020	405916	9/6/2023	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Transfer function to enable self adjusting track circuits	16/367936	3/28/2019	11148690	10/19/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AU	Clustering Algorithms for DC Track Coded Signals	2019264513	11/11/2019	2019264513	4/20/2023	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
BR	Clustering Algorithms for DC Track Coded Signals	BR1020190239891	11/14/2019			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
CA	Clustering Algorithms for DC Track Coded Signals	3061523	11/12/2019			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
MX	Clustering Algorithms for DC Track Coded Signals	MX/a/2019/013382	11/8/2019			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
FR	Clustering Algorithms for DC Track Coded Signals	19209320.1	11/15/2019	3653465	4/21/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
BE	Clustering Algorithms for DC Track Coded Signals	19209320.1	11/15/2019	3653465	4/21/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
DE	Clustering Algorithms for DC Track Coded Signals	19209320.1	11/15/2019	3653465	4/21/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings

ES	Clustering Algorithms for DC Track Coded Signals	19209320.1	11/15/2019	3653465	4/21/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
GB	Clustering Algorithms for DC Track Coded Signals	19209320.1	11/15/2019	3653465	4/21/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
IT	Clustering Algorithms for DC Track Coded Signals	19209320.1	11/15/2019	502021000056126	4/21/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
SE	Clustering Algorithms for DC Track Coded Signals	19209320.1	11/15/2019	3653465	4/21/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Clustering Algorithms for DC Track Coded Signals	16/193444	11/16/2018	11260888	3/1/2022	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Wayside to Train Communication over the Rail	16/719482	12/18/2019	11643122	5/9/2023	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AU	Track circuit parameter based receiver	2020267200	11/11/2020			Published	ALSTOM Transport Technologies	ALSTOM Holdings
BR	Track circuit parameter based receiver	1020200234609	11/17/2020			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
CA	Track circuit parameter based receiver	3098788	11/12/2020			Published	ALSTOM Transport Technologies	ALSTOM Holdings
MX	Track circuit parameter based receiver	MX/a/2020/012335	11/17/2020			Filed	ALSTOM Transport Technologies	ALSTOM Holdings
US	Track circuit parameter based receiver	16/686533	11/18/2019	11352033	6/7/2022	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AU	Dynamic Time Warping Calibration Method for Virtual Block Track Circuits	2021201394	3/3/2021			Filed	ALSTOM Transport Technologies	ALSTOM Holdings
BR	Dynamic Time Warping Calibration Method for Virtual Block Track Circuits	1020210042451	3/5/2021			Filed	ALSTOM Transport Technologies	ALSTOM Holdings
CA	Dynamic Time Warping Calibration Method for Virtual Block Track Circuits	3111223	3/4/2021			Filed	ALSTOM Transport Technologies	ALSTOM Holdings
MX	Dynamic Time Warping Calibration Method for Virtual Block Track Circuits	MX/a/2021/002550	3/4/2021			Filed	ALSTOM Transport Technologies	ALSTOM Holdings

US	Dynamic Time Warping Calibration Method for Virtual Block Track Circuits	16/811244	3/6/2020	11577763	2/14/2023	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
CA	Solid state vital relay	3124791	7/15/2021			Filed	ALSTOM Transport Technologies	ALSTOM Holdings
US	Solid state vital relay	16/932169	7/17/2020	11724724	8/15/2023	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	PCB connector solid insulation system	17/065626	10/8/2020	11527843	12/13/2022	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
CA	Train Location using Barycenter Averaging	3148438	2/14/2022			Filed	ALSTOM Holdings	
US	Train Location using Weighted Div Barycenter Averaging	17/175996	2/15/2021			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
AU	Track Circuit Signal Predictor and Parameter Estimator	2021286256	12/13/2021			Filed	ALSTOM Transport Technologies	ALSTOM Holdings
CA	Track Circuit Signal Predictor and Parameter Estimator	3141589	12/9/2021			Filed	ALSTOM Transport Technologies	ALSTOM Holdings
MX	Track Circuit Signal Predictor and Parameter Estimator	MX/a/2021/015443	12/13/2021			Filed	ALSTOM Transport Technologies	ALSTOM Holdings
US	Track Circuit Signal Predictor and Parameter Estimator	17/123055	12/15/2020			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
AU	3DDT - Method of Train Detection	2022203079	5/9/2022			Filed	ALSTOM Holdings	
CA	3DDT - Method of Train Detection	3157551	5/4/2022			Filed	ALSTOM Holdings	
GB	3DDT - Method of Train Detection	2206524.7	5/4/2022			Under Examination	ALSTOM Holdings	
MX	3DDT - Method of Train Detection	MX/a/2022/005626	5/9/2022			Published	ALSTOM Holdings	
US	3DDT - Method of Train Detection	17/316361	5/10/2021	11702119	7/18/2023	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AU	Train move classification using track circuit measurements	2022204079	6/10/2022			Filed	ALSTOM Holdings	
CA	Train move classification using track circuit measurements	3162147	6/9/2022			Filed	ALSTOM Holdings	

MX	Train move classification using track circuit measurements	MX/a/2022/007328	6/14/2022			Published	ALSTOM Holdings	
US	Train move classification using track circuit measurements	17/304104	6/14/2021			Published	ALSTOM Transport Technologies	ALSTOM Holdings
EP	Determination of Potentially Hazardous Rail Stress Conditions Using Track Circuit Data	22197453.8	9/23/2022			Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
US	Determination of Potentially Hazardous Rail Stress Conditions Using Track Circuit Data	17/448825	9/24/2021			Published	ALSTOM Transport Technologies	ALSTOM Holdings
WO	System and Method for Improving Rail Shunting	PCT/EP2023/080595	11/2/2023			Filed	ALSTOM Holdings	
US	System and Method for Improving Rail Shunting	18/052829	11/4/2022			Filed	ALSTOM Holdings	
WO	Machine Learning and Artificial Intelligence Methods for Detecting and Diagnosing Hazardous Rail Stress Conditions using Track C	PCT/FR2023/000105	5/25/2023			Filed	ALSTOM Holdings	
CA	System and Method for Block Entry Detection for Cab Signaling	3197531	4/20/2023			Filed	ALSTOM Holdings	
US	System and Method for Block Entry Detection for Cab Signaling	17/660557	4/25/2022			Published	ALSTOM Holdings	
US	System and Method for Detecting Broken Rails	18/317693	5/15/2023			Filed	ALSTOM Holdings	
TW	Temperature Compensation of Acceleration Measurement Unit	112147067	12/04/2023			Filed	ALSTOM Holdings	
US	Temperature Compensation of Acceleration Measurement Unit	18/065039	12/7/2022	11951962		Under Examination	ALSTOM Holdings	

US	Digital train system for automatically detecting trains approaching a crossing	10/743591	12/22/2003	725467	8/7/2007	Granted	General Electric Company	ALSTOM Holdings
US	Railway controller with improved application programming	11/039643	1/20/2005	7315770	1/1/2008	Granted	General Electric Company	ALSTOM Holdings
AU	Railway controller with improved application programming	2005210648	2/1/2005	2005210648	1/20/2011	Granted	General Electric Company	ALSTOM Holdings
BR	Railway controller with improved application programming	PI0506509-7	2/1/2005	PI0506509-7	10/18/2016	Granted	General Electric Company	ALSTOM Holdings
GB	Railway controller with improved application programming	0615175.7	2/1/2005	2426110	12/21/2007	Granted	General Electric Company	ALSTOM Holdings
IT	A system for a greaseless switch assembly	06802761.4	8/31/2006	1960244	2/23/2011	Granted	General Electric Company	ALSTOM Holdings
US	Method, computer software code, and system for determining a train direction at a railroad crossing	11/533384	9/20/2006	7618010	11/17/2009	Granted	General Electric Company	ALSTOM Holdings
US	Systems and methods for changing parameters of a controller	11/750486	5/18/2007	8145799	3/27/2012	Granted	General Electric Company	ALSTOM Holdings
US	Systems and method for communicating data in a railroad system	12/349996	1/7/2009	8264330	9/11/2012	Granted	General Electric Company	ALSTOM Holdings
US	System and method to provide communication-based train control system capabilities	12/324032	11/26/2008	8224510	7/17/2012	Granted	General Electric Company	ALSTOM Holdings
AU	Method and apparatus for remotely monitoring railroad equipment using network protocols	2008305504	7/22/2008	2008305504	6/14/2012	Granted	General Electric Company	ALSTOM Holdings
BR	Method and apparatus for remotely monitoring railroad equipment using network protocols	PI0816039-2	7/22/2008	PI08160392	3/30/2021	Granted	General Electric Company	ALSTOM Holdings

US	Systems and methods for determining whether a transportation track is occupied	12/18/014	7/31/2008	9290190	3/22/2016	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Signal alignment monitoring system and method of assembling the same	12/402607	3/12/2009	8149129	4/3/2012	Granted	General Electric Company	ALSTOM Holdings
US	System and method for operating train in the presence of multiple alternate routes	12/405654	3/17/2009	8170732	5/1/2012	Granted	General Electric Company	ALSTOM Holdings
US	Foreign track current suppression system and method	12/818472	6/18/2010	8376286	2/19/2013	Granted	General Electric Company	ALSTOM Holdings
AU	Foreign track current suppression system and method	2010355287	11/23/2010	2010355287	10/12/2015	Granted	General Electric Company	ALSTOM Holdings
GB	Foreign track current suppression system and method	1222599.1	11/23/2010	2494348	11/4/2015	Granted	General Electric Company	ALSTOM Holdings
US	Warning horn control system, radar system, and method	12/830081	7/2/2010	9019115	4/28/2015	Granted	General Electric Company	ALSTOM Holdings
US	Signal detection system and method	13/668507	11/5/2012	9598093	3/21/2017	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Method and system for determining signal state	13/108379	5/16/2011	8581499	11/12/2013	Granted	General Electric Company	ALSTOM Holdings
US	Communication systems and method for a rail vehicle or other powered system	13/311252	12/5/2011	8731747	5/20/2014	Granted	General Electric Company	ALSTOM Holdings
EA	Communication systems and method for a rail vehicle or other powered system	201391517	4/27/2012	031210	12/28/2018	Granted	General Electric Company	ALSTOM Holdings
AM	Communication systems and method for a rail vehicle or other powered system	201391517	4/27/2012	031210	12/28/2018	Granted	General Electric Company	ALSTOM Holdings
AZ	Communication systems and method for a rail vehicle or other powered system	201391517	4/27/2012	031210	12/28/2018	Granted	General Electric Company	ALSTOM Holdings

BY	Communication systems and method for a rail vehicle or other powered system	201391517	4/27/2012	031210	12/28/2018	Granted	General Electric Company	ALSTOM Holdings
KZ	Communication systems and method for a rail vehicle or other powered system	201391517	4/27/2012	031210	12/28/2018	Granted	General Electric Company	ALSTOM Holdings
KG	Communication systems and method for a rail vehicle or other powered system	201391517	4/27/2012	031210	12/28/2018	Granted	General Electric Company	ALSTOM Holdings
RU	Communication systems and method for a rail vehicle or other powered system	201391517	4/27/2012	031210	12/21/2018	Granted	General Electric Company	ALSTOM Holdings
TJ	Communication systems and method for a rail vehicle or other powered system	201391517	4/27/2012	031210	12/28/2018	Granted	General Electric Company	ALSTOM Holdings
TM	Communication systems and method for a rail vehicle or other powered system	2013391517	4/27/2012	031210	12/28/2018	Granted	General Electric Company	ALSTOM Holdings
US	Apparatus and method for safe state retention	13/586909	8/16/2012	9208941	12/8/2015	Granted	General Electric Company	ALSTOM Holdings
AU	Apparatus and method for safe state retention	2013213662	8/6/2013	2013213662	2/2/2017	Granted	General Electric Company	ALSTOM Holdings
DE	Apparatus and method for safe state retention	131792624	8/5/2013	6020130596697	8/28/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
FR	Apparatus and method for safe state retention	131792624	8/5/2013	2698797	8/28/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
GB	Apparatus and method for safe state retention	131792624	8/5/2013	2698797	8/28/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
IT	Apparatus and method for safe state retention	131792624	8/5/2013	502019000097980	8/28/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
NL	Apparatus and method for safe state retention	131792624	8/5/2013	2698797	8/28/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
RO	Apparatus and method for safe state retention	131792624	8/5/2013	2698797	8/28/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
SE	Apparatus and method for safe state retention	131792624	8/5/2013	2698797	8/28/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings

US	Railway code generation and signaling system and method	14/066884	10/30/2013	9391820	7/12/2016	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Methods and system for crossing prediction	13/446659	4/13/2012	8725405	5/13/2014	Granted	General Electric Company	ALSTOM Holdings
AU	Methods and system for crossing prediction	2013246396	3/22/2013	2013246396	3/29/2018	Granted	General Electric Company	ALSTOM Holdings
BR	Methods and system for crossing prediction	112014023802-2	3/22/2013	1120140238022	4/26/2022	Granted	General Electric Company	ALSTOM Holdings
US	Methods and system of automating track circuit calibration	13/478448	5/23/2012	9254852	2/9/2016	Granted	General Electric Company	ALSTOM Holdings
US	Method and system for timetable optimization utilizing energy consumption factors	13/676279	11/14/2012	8670890	3/11/2014	Granted	General Electric Company	ALSTOM Holdings
AU	Method and system for timetable optimization utilizing energy consumption factors	2013206546	6/26/2013	2013206546	3/21/2019	Granted	General Electric Company	ALSTOM Holdings
IN	Method and system for timetable optimization utilizing energy consumption factors	1746/DEL/2013	6/12/2013	374406	8/12/2021	Granted	General Electric Company	ALSTOM Holdings
US	Systems and Methods for Management of Crossings Near Stations	13/900649	5/29/2013	9340220	5/17/2016	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Systems and methods for vehicle braking control	14/049389	10/9/2013	9889829	2/13/2018	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Systems and methods for providing constant warning time at crossings	13/910412	6/5/2013	9026360	5/5/2015	Granted	General Electric Company	ALSTOM Holdings
US	Systems and methods for maintaining interlockings of transportation networks	14/148864	1/7/2014	9842502	12/12/2017	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Systems and methods for controlling warnings at vehicle crossings	14/146873	1/3/2014	9126609	9/8/2015	Granted	General Electric Company	ALSTOM Holdings
US	Systems and Methods for Determining Route Location	13/899821	5/22/2013	8924066	12/30/2014	Granted	General Electric Company	ALSTOM Holdings
US	Systems and method for controlling warnings at vehicle crossings	14/285231	5/22/2014	9150229	10/6/2015	Granted	General Electric Company	ALSTOM Holdings

US	A method and system for timeable optimization utilizing energy consumption factors	14/168645	1/30/2014	9108652	8/18/2015	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	A method and system for timeable optimization utilizing energy consumption factors	15/114896	1/20/2015	10202133	2/12/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
SA	A method and system for timeable optimization utilizing energy consumption factors	516371577	1/20/2015	6826	4/29/2020	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
IN	A method and system for timeable optimization utilizing energy consumption factors	201647026009	1/20/2015	380958	10/29/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
SG	A method and system for timeable optimization utilizing energy consumption factors	11201606294R	1/20/2015	11201606294R	10/22/2018	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
HK	A method and system for timeable optimization utilizing energy consumption factors	16114269.7	1/20/2015	HK1226033	3/26/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
FR	A method and system for timeable optimization utilizing energy consumption factors	15702337.5	1/20/2015	3099553	6/3/2020	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
BE	A method and system for timeable optimization utilizing energy consumption factors	15702337.5	1/20/2015	3099553	6/3/2020	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
NO	A method and system for timeable optimization utilizing energy consumption factors	15702337.5	1/20/2015	3099553	6/3/2020	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Systems and methods for predictive factors	14/260338	4/24/2014	9481385	11/1/2016	Granted	ALSTOM Transport Technologies	ALSTOM Holdings

	maintenance of crossings							
AU	Systems and methods for predictive maintenance of crossings	2015200059.0	1/7/2015	2015200059	8/20/2020	Granted	General Electric Company	ALSTOM Holdings
BR	Systems and methods for predictive maintenance of crossings	102015000429-0	1/8/2015	1020150004290	7/26/2022	Granted	General Electric Company	ALSTOM Holdings
US	System and method for testing insulated joints in track systems	14/631907	2/26/2015	9689911	6/27/2017	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
CA	System and method for testing insulated joints in track systems	2921838	2/24/2016	2921838	8/22/2023	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AU	System and method for testing insulated joints in track systems	2016201184	2/25/2016	2016201184	2/18/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
BR	System and method for testing insulated joints in track systems	1020160040841	2/25/2016	1020160040841	11/8/2022	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
MX	System and method for testing insulated joints in track systems	MX/a/2016/002440	2/25/2016	357578	7/16/2018	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
NL	System and method for testing insulated joints in track systems	2016321	2/25/2016	2016321	6/11/2018	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
ZA	System and method for testing insulated joints in track systems	2016/01318	2/25/2016	2016/01318	2/28/2018	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Vibration monitoring system and method	14/501177	9/30/2014	9417215	8/16/2016	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Location and/or direction of travel detection system and method	14/698130	4/28/2015	9663128	5/30/2017	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
BR	Location and/or direction of travel detection system and method	1020160093171	4/27/2016	1020160093171	11/8/2022	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	System, apparatus and method for mounting a device	15/153034	5/12/2016	10288218	5/14/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AU	System, apparatus and method for mounting a device	2016203016	5/10/2016	2016203016	7/16/2020	Granted	ALSTOM Transport Technologies	ALSTOM Holdings

US	Equipment life span monitoring system and method	15/178286	6/9/2016	9997049	6/12/2018	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AU	Equipment life span monitoring system and method	2016203798	6/8/2016	2016203798	10/15/2020	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
BR	Equipment life span monitoring system and method	102016013251-7	6/9/2016	1020160132517	7/12/2022	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
MX	Equipment life span monitoring system and method	MX/a/2016/007574	6/9/2016	358985	9/11/2018	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
SG	Equipment life span monitoring system and method	10201604764Y	6/10/2016	10201604764Y	5/22/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
ZA	Equipment life span monitoring system and method	2016/03860	6/7/2016	2016/03860	9/27/2018	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Vibration monitoring system and method	15/153525	5/12/2016	10145983	12/4/2018	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Vibration monitoring system and method	15/889972	5/12/2016	10324067	6/18/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AU	Vibration monitoring system and method	2016203095	5/12/2016	2016203095	2/4/2021	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
BR	Vibration monitoring system and method	1020160109094	5/13/2016	1020160109094	9/13/2022	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
CA	Vibration monitoring system and method	2929920	5/13/2016	2929920	8/15/2023	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
MX	Vibration monitoring system and method	MX/a/2016/006287	5/13/2016	361449	12/6/2018	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	System and method for controlling a wayside device	15/192653	6/24/2016	10292230	5/14/2019	Granted	ALSTOM Transport Technologies	ALSTOM Holdings
AU	System and method for controlling a wayside device	2016204264	6/22/2016	2016204264	7/29/2021	Under Examination	ALSTOM Transport Technologies	ALSTOM Holdings
CA	System and method for controlling a wayside device	2933911	6/22/2016			Granted	ALSTOM Transport Technologies	ALSTOM Holdings
US	Systems and methods for testing wayside units	14/146882	1/3/2014	9751545	9/5/2017	Granted	General Electric Company	ALSTOM Holdings
US	System for electrically connecting conductor to track member	13/637266	2/28/2011	8764461	7/1/2014	Granted	General Electric Company	ALSTOM Holdings

US	Systems and method for a crossing equipment controller	13/448430	4/17/2012	8833703	9/16/2014	Granted	General Electric Company	ALSTOM Holdings
US	Current sensor	13/158235	6/10/2011	9128128	9/8/2015	Granted	General Electric Company	ALSTOM Holdings
AU	Digital train system for automatically detecting trains approaching a crossing	2004210872	2/13/2004	2004210872	3/18/2010	Expired/Inactive	General Electric Company	ALSTOM Holdings
BR	Digital train system for automatically detecting trains approaching a crossing	P10407219-7	2/13/2004	P10407219-7	7/28/2015	Expired/Inactive	General Electric Company	ALSTOM Holdings
GB	Method and apparatus for remotely monitoring railroad equipment using network protocols	08/96413.6	7/22/2008	2205473	11/7/2018	Expired/Inactive	ALSTOM Transport Technologies	ALSTOM Holdings
MX	Un sistema y metodo para monitorear la condicion de un	PA/02003/01 0949	11/28/2003	242308	6/21/2004	Expired/Inactive	General Electric Company	ALSTOM Holdings
MX	Maquina cambiadora de via	PA/02002/00 3240	3/27/2002	236981	38301	Expired/Inactive	General Electric Company	ALSTOM Holdings
CN	Na	200410071458-2		200410071458-2		Expires May 2024 - Seller decision not to maintain		
RU	Rail and train monitoring system and method thereof	2006102369	5/19/2004	2365517	8/27/2009	Expires May 2024 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
BR	Sistema digital ferroviario para detectar automaticamente trens se aproximando de um cruzamento	P10407219-7	2/13/2004	P10407219-7	7/28/2015	Expired/Inactive	General Electric Company	ALSTOM Holdings
RU	Railway digital system for automatic detection of trains approaching crossing	2005128503	2/13/2004	2342274	12/27/2008	Expired/Inactive	General Electric Company	ALSTOM Holdings
CN	Na	20048000412 0-3		ZL 200480004120.3		Expired/Inactive		
US	Electronically controlled grade crossing gate system and method	10/881959	6/29/2004	7195211	3/27/2007	Expires 8/25/2024 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
US	Remote system for monitoring and controlling railroad wayside equipment	10/820499	8/4/2004	7140577	11/28/2006	Expires 7/30/2024 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings

ZA	Railway controller with improved application programming	2006/06875	8/17/2006	2006/06875	6/25/2008	Expired/Inactive	General Electric Company	ALSTOM Holdings
CN	Railway controller with improved application programming	20058000400 4-6	1/2/2005	ZL200580004004.6	11/25/2009	Expired/Inactive	General Electric Company	ALSTOM Holdings
US	Apparatus and method for monitoring the output of a warning or indicator light	10/882033	6/30/2004	7154403	12/26/2006	Expires 6/30/2024 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
CA	Switch machine with switch point connectors	2555727	1/26/2005	2555727	12/3/2013	Expired/Inactive	General Electric Company	ALSTOM Holdings
GB	Pivoting connector assembly for a railroad switch	05712112-1	1/26/2005	1718803	12/12/2007	Expired/Inactive	General Electric Company	ALSTOM Holdings
IT	Pivoting connector assembly for a railroad switch	05712112-1	1/26/2005	1718803	12/12/2007	Expired/Inactive	General Electric Company	ALSTOM Holdings
RU	Switch gear with connectors of switch points	2006133314	1/26/2005	2358057	10/6/2009	Expired/Inactive	General Electric Company	ALSTOM Holdings
ZA	Switch machine with switch point connectors	2006/07346	1/9/2006	2006/07346	4/30/2008	Expired/Inactive	General Electric Company	ALSTOM Holdings
CN	Switch machine with improved switch point connectors	20058000505 9-9	1/26/2005	ZL200580005059.9	6/4/2011	Expired/Inactive	General Electric Company	ALSTOM Holdings
DE	Drehbare verbinderanordnung für eine eisenbahnweiche	05712112-1	1/26/2005	602005003796-9	11/27/2008	Expired/Inactive	General Electric Company	ALSTOM Holdings
IN	Na	4504/DEL.NP/2006		291168		Expired/Inactive		
US	Self powered railway monitoring system	11/005344	12/6/2004	7364123	4/29/2008	Expires 8/25/2025 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
US	Rail based electric power generation system	11/005175	6/12/2004	7148581	12/12/2006	Expires 2/25/2025 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
US	Apparatus and method for monitoring the output of a warning or indicator light	10/898774	7/26/2004	7123165	10/17/2006	Expires 11/16/2024 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
US	System and method for monitoring status of a visual signal device	10/955631	9/30/2004	7270442	9/18/2007	Expires 10/21/2025 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
ZA	System and method for providing access to	2006/07753	9/15/2006	2006/07753	6/25/2008	Expired/Inactive	General Electric Company	ALSTOM Holdings

	wireless railroad data network						
EP	System and method for providing access to wireless railroad data network	06254933-2	9/25/2006	1770953	10/7/2019	Expired/Inactive	ALSTOM Transport Technologies
IN	Na	2044/DEL/2006		282680		Expired/Inactive	
CN	System and method for providing secure access to a wayside rail network	20151021820 9.X	9/29/2006	201510218209.X		Expired/Inactive	General Electric Company
US	Machine for railway switching	10/988853	11/15/2004	7300023	11/27/2007	Expires 4/17/2025 - Seller decision not to maintain	General Electric Company
US	Movable point frog switching assembly	11/248725	11/10/2005	7341226	3/11/2008	Expires 8/3/2026 - Seller decision not to maintain	General Electric Company
RU	Method and software product to keep track of rolling stock integrity	2006122617	6/23/2006	2408490	10/1/2011	Expired/Inactive	General Electric Company
US	Method and computer program product for monitoring integrity of railroad train	11/167015	6/24/2005	7222003	5/22/2007	Expires 1/27/2026 - Seller decision not to maintain	General Electric Company
ZA	Method and computer program product for monitoring integrity of a railroad	2006/04878	6/13/2006	2006/04878	4/25/2007	Expired/Inactive	General Electric Company
IN	Na	1385/DEL/2006		282733		Expired/Inactive	
RU	System and method of detecting rail fracture or vehicle	2008130877	12/14/2006	2419568	5/27/2011	Expired/Inactive	General Electric Company
ZA	System and method for detecting rail break or vehicle	2008/06064	11/7/2008	2008/06064	7/29/2009	Expired/Inactive	General Electric Company
IN	Na	5080/DEL.NP/ 2008		276229		Expired/Inactive	
US	Railroad wayside signal system	11/272336	10/11/2005	7561066	7/14/2009	Expires 2/27/2027 - Seller decision not to maintain	General Electric Company
US	System and method for monitoring train arrival and departure latencies	11/317533	12/23/2005	7428453	9/23/2008	Expires 4/19/2027 - Seller decision not to maintain	General Electric Company
IT	Motore idraulico per scambi ferroviari	MI2006A0016 47	8/28/2006	1375158	2/29/2008	Expired/Inactive	General Electric Company

US	Hydraulic motor for railway switches	12/374432	7/17/2007	8302915	11/6/2012	Next due date of 5/6/2024 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
US	Railway power supply system and method for powering an electrical device situated along a railway	11/350063	2/8/2006	7547988	6/16/2009	Expires 3/4/2027 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
US	System and method for railroad wayside monitoring	11/651229	9/1/2007	8245983	8/21/2012	Final due date of 8/21/2024 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
US	Method and apparatus for selectively disabling train location reports	11/342875	1/31/2006	7797087	9/14/2010	Expires 7/17/2029 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
FI	Järjestelmä voiteluaineeton ja vaihdelyksikköä varten	06802761-4	8/31/2006	1960244		Expired/Inactive	General Electric Company	ALSTOM Holdings
RU	System for unlubricated switch assembly	2008127425	8/31/2006	2406634	12/20/2010	Expired/Inactive	General Electric Company	ALSTOM Holdings
TR	Na	06802761-4		2011/02193		Expired/Inactive		
IN	Na	4365/DEL.NP/2008		280406		Expired/Inactive		
US	System and method for temporary protection operation of a controller box for a railroad switch turnout	11/669271	1/31/2007	7753318	7/13/2010	Expires 10/10/2028 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
US	Method of planning the movement of trains using preallocation of resources	11/591521	2/11/2006	8433461	4/30/2013	Next due date of 10/30/2024 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
CN	Na	20091013932-7-6		ZL200910139327.6		Expired/Inactive		
IN	Methods and system for jointless track circuits using passive signaling	3555/DEL.NP/2009		326453		Expired/Inactive		
US	System and method for sensing misalignment of a railroad signaling system	11/733807	4/11/2007	7554457	6/30/2009	Expires 8/7/2028 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
IT	Sistema riscaldante per antenne a microonde montate a bordo di locomotori ferroviari	MI2007A000611		1382205		Expired/Inactive		
US	Methods and systems for testing a functional status of a light unit	11/796056	4/26/2007	7652480	1/26/2010	Expires 2/23/2028 -	General Electric Company	ALSTOM Holdings

						Seller decision not to maintain		
US	Methods and systems for verifying the operation of a railroad gate	11/757708	4/6/2007	7789348	9/7/2010	Expires 2/23/2029 Seller decision not to maintain	General Electric Company	ALSTOM Holdings
EP	Methods and systems for fail-safe communication	10742342-8	7/27/2010	2460319	3/24/2021	Expired/Inactive	ALSTOM Transport Technologies	ALSTOM Holdings
US	Methods and systems for variable rate communication timeout	11/821665	6/25/2007	7731129	6/8/2010	Expires 9/16/2028 Seller decision not to maintain	General Electric Company	ALSTOM Holdings
AU	Methods and system of automating track circuit calibration	2009204324	6/1/2009	2009204324	10/5/2012	Final due date of 7/6/2024 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
AU	Methods and system of automating track circuit calibration	2012201972	4/4/2012	2012201972	3/26/2015	Final due date of 7/6/2024 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
ZA	Methods and systems of automating track circuit calibration	2010/05280	7/23/2010	2010/05280	3/30/2011	Expired/Inactive	General Electric Company	ALSTOM Holdings
BR	Method for calibrating a railroad circuit and railroad circuit	P10905666-1	6/1/2009	P109056661	2/2/2021	Expired/Inactive	General Electric Company	ALSTOM Holdings
US	Methods and system for detecting railway vacancy	12/116792	7/5/2008	8452466	5/28/2013	Next due date of 11/28/2024 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
IN	Na	1715/DELNP/2010		316065		Expired/Inactive		
US	Systems and methods for determining an operating state using RFID	12/048403	3/14/2008	8400270	3/19/2013	Next due date of 9/19/2024 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
US	Method and system for generating electricity	12/139967	6/16/2008	8310070	11/13/2012	Next due date of 5/13/2024 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
US	System, method and computer readable media for regulating the speed of a rail vehicle	12/046678	12/3/2008	7647142	1/12/2010	Expires 4/16/2028 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings
US	Railway sensor communication system and method	12/852073	6/8/2010	8469319	6/25/2013	Next due date of 12/25/2024 - Seller decision not to maintain	General Electric Company	ALSTOM Holdings

ZA	Railway sensor communication system and method	2010/06003		2010/06003		Expired/Inactive		
EP	Apparatus and method for safe state retention	13179262.4	5/8/2013	2698797	8/28/2019	Expired/Inactive	ALSTOM Transport Technologies	ALSTOM Holdings
HK	Algorithmic approach to optimize metro timetables in terms of energy consumption online and offline.	14102670.7		14102670.7		Expired/Inactive		
WO	Systems and methods for vehicle position detection	PCT/US2015/010392	7/1/2015	PCT/US2015/010392		Expired/Inactive	General Electric Company	ALSTOM Holdings
WO	A method and system for timetable optimization utilizing energy consumption factors	PCT/US2015/011972	1/20/2015	PCT/US2015/011972		Expired/Inactive	ALSTOM Transport Technologies	ALSTOM Holdings
WO	Method and apparatus for switching device	PCT/CN2015/076757	4/16/2015	PCT/CN2015/076757		Expired/Inactive	ALSTOM Transport Technologies	ALSTOM Holdings
IT	Dispositif de signallement a surete integree de materian roulant	FI2002A000220		1334109		Expired/Inactive		
WO	Detection of foreign material on a railroad track	PCT/IB2024/000083	02/27/2024			Filed	ALSTOM Holdings	ALSTOM Holdings




TIF number	Invention Disclosure Titles
<p style="text-align: center;">REDACTED</p>	

REDACTED

B.2 Trademarks

Jurisdiction	Title	App. No.	App. Date	Reg. No.	Reg. Date	Record Owner	Beneficial Owner (if different from Record Owner)
CA	ELECTROBLOX	1549498	10/27/2011	TM A888679	10/24/2014	ALSTOM Holdings	
BR	ELECTROBLOX	831249455	10/27/2011	831249455	10/17/2017	ALSTOM Transport Technologies	ALSTOM Holdings
US	ELECTROBLOX	85310112	5/2/2011	4649462	12/2/2014	ALSTOM Holdings	
AR	ELECTROBLOX	3816425	7/1/2019	3072933	4/30/2020	ALSTOM Holdings	
UY	ELECTROBLOX	506588	7/26/2019	506588	10/27/2021	ALSTOM Transport Technologies	ALSTOM Holdings
MX	ELECTROBLOX	119,852,229,459.00	7/3/2019	2047258	10/17/2019	ALSTOM Transport Technologies	ALSTOM Holdings
CO	ELECTROBLOX	SD2019/0053031	6/21/2019	638677	1/21/2020	ALSTOM Holdings	
EU	ELECTROBLOX	010374742	3/28/2021	010374742	3/28/2021	ALSTOM Holdings	
GB	ELECTROBLOX	UK00910374742	3/28/2012	UK00910374742	3/28/2012	ALSTOM Holdings	

AU	ELECTROBLOX	1456735	10/27/2011	1,456,735.00	10/27/2011	ALSTOM Holdings	
CA	ELECTROLOGIXS	1342847	4/11/2007	TMA775914	8/31/2010	ALSTOM Holdings	
AU	ELECTROLOGIXS	1165840	3/12/2007	1165840	3/12/2007	ALSTOM Holdings	
US	ELECTROLOGIXS	77,025,059.00	5/29/2017	3246029	5/29/2017	ALSTOM Holdings	
MX	ELECTROLOGIXS	119,850,847,411.00	4/26/2007	982707	4/26/2007	ALSTOM Transport Technologies	ALSTOM Holdings
FR	ElectroLogIXS	4559820	7/5/2019	4559820	10/4/2019	ALSTOM Transport Technologies	ALSTOM Holdings
UY	ELECTROLOGIXS	509598	11/8/2019	509598	1/20/2022	ALSTOM Transport Technologies	ALSTOM Holdings
ZA	ELECTROLOGIXS	2019/30513	10/25/2019	2019/30513	10/25/2019	ALSTOM Holdings	
BR	ELECTROLOGIXS	918544157	11/26/2019	918544157	6/2/2020	ALSTOM Transport Technologies	ALSTOM Holdings
CL	ELECTROLOGIXS	1340206	10/25/2019	1320054	4/8/2020	ALSTOM Holdings	
LK	ELECTROLOGIXS	246043	10/28/2019			ALSTOM Holdings	
WO	ELECTROLOGIXS	1484758	6/21/2019	1484758	6/21/2019	ALSTOM Transport Technologies	ALSTOM Holdings
AR	ELECTROLOGIXS	3,851,457	11/12/2019	3158022	4/6/2021	ALSTOM Holdings	
EG	ELECTROLOGIXS	1484758	6/21/2019	1484758	6/21/2019	ALSTOM Transport Technologies	ALSTOM Holdings
CO	ELECTROLOGIXS	1484758	6/21/2019	1484758	6/21/2019	ALSTOM Transport Technologies	ALSTOM Holdings
OM	ELECTROLOGIXS	1484758	6/21/2019	1484758	6/21/2019	ALSTOM Transport Technologies	ALSTOM Holdings
GB	ELECTROLOGIXS	1484758	6/21/2019	1484758	6/21/2019	ALSTOM Transport Technologies	ALSTOM Holdings
NZ	ELECTROLOGIXS	1484758	6/21/2019	1484758	6/21/2019	ALSTOM Transport Technologies	ALSTOM Holdings

EU	ELECTROLOGIXS	1484758	6/21/2019	1484758	6/21/2019	ALSTOM Transport Technologies	ALSTOM Holdings
US		72432796	4/24/2014	984360	6/14/2014	ALSTOM Holdings	
US		72432798	4/25/2014	984361	4/29/2014	ALSTOM Holdings	
CA		432488	10/24/2010	TMA251741	10/24/1980	ALSTOM Holdings	
US	IVPI	86356717	8/4/2014	5324108	10/31/2017	ALSTOM Holdings	
US	MICROCHRON	73512549	5/22/2015	1363055	10/1/1985	ALSTOM Holdings	
FR	VPI	3,463,130.00	11/13/2016	3,463,130.00	4/20/2017	ALSTOM Transport Technologies,	ALSTOM Holdings
WO	VPI	934647	4/20/2017	934647	4/20/2017	ALSTOM Transport Technologies	ALSTOM Holdings
CN	VPI	934647	4/20/2017	934647	4/20/2017	ALSTOM Transport Technologies	ALSTOM Holdings
US	VPI	934647	4/20/2017	934647	4/20/2017	ALSTOM Transport Technologies	ALSTOM Holdings
US	VPI	86557316	3/9/2015	5715709	4/2/2019	ALSTOM Holdings	
ID	VPI	D002007014718	7/2/2017	IDM000199509	3/31/2009	ALSTOM Transport Technologies	ALSTOM Holdings
ID	VPI	D002007014720	7/2/2017	IDM000193659	2/17/2009	ALSTOM Transport Technologies	ALSTOM Holdings
ID	VPI	J002007014723	7/2/2017	IDM000188553	12/31/2008	ALSTOM Transport Technologies	ALSTOM Holdings
ID	VPI	J002007014725	7/2/2017	IDM000188554	12/31/2008	ALSTOM Transport Technologies	ALSTOM Holdings
ID	VPI	J002007014728	7/2/2017	IDM000188555	12/31/2008	ALSTOM Transport Technologies	ALSTOM Holdings
ID	VPI	J002007014730	7/2/2017	IDM000188556	12/31/2008	ALSTOM Transport Technologies	ALSTOM Holdings
ID	VPI	J002007014731	7/2/2017	IDM000188557	12/31/2008	ALSTOM Transport	ALSTOM Holdings

					Technologies	
US	VPI	73561020	9/30/2015	1393084	5/13/1986	ALSTOM Holdings

B.3 Domain Names

Domain Name	Reg. Date	Expiry Date
electroblox.cn	30/04/2018	30/04/2024
electroblox.fr	30/04/2018	30/04/2024
electroblox.net	30/04/2018	30/04/2024
electroblox.ru	04/05/2018	04/05/2024
electrologixs.cn	30/04/2018	30/04/2024
electrologixs.com	30/04/2018	30/04/2024
electrologixs.fr	30/04/2018	30/04/2024
electrologixs.net	30/04/2018	30/04/2024
electrologixs.ru	04/05/2018	04/05/2024
ivpi.fr	30/04/2018	30/04/2024
microchtron.com	24/01/2024	24/01/2025
microchtron.net	25/01/2024	25/01/2025
microchtron.fr	26/01/2024	26/01/2025
microchtron.cn	27/01/2024	27/01/2025
microchtron.ru	28/01/2024	28/01/2025