

## PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT												
NATURE OF CONVEYANCE:	ASSIGNMENT												
CONVEYING PARTY DATA													
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Madhavan Narasimhan POYYAPAKKAM</td> <td>06/01/2012</td> </tr> <tr> <td>Fernando BIAGIOLI</td> <td>06/01/2012</td> </tr> <tr> <td>Khawar SYED</td> <td>06/06/2012</td> </tr> <tr> <td>Ronghai MAO</td> <td>06/18/2012</td> </tr> <tr> <td>Stefano BERNERO</td> <td>05/25/2012</td> </tr> </tbody> </table>		Name	Execution Date	Madhavan Narasimhan POYYAPAKKAM	06/01/2012	Fernando BIAGIOLI	06/01/2012	Khawar SYED	06/06/2012	Ronghai MAO	06/18/2012	Stefano BERNERO	05/25/2012
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<table border="1"> <tr> <td>Name:</td> <td>ALSTOM TECHNOLOGY LTD</td> </tr> <tr> <td>Street Address:</td> <td>Brown Boveri Strasse 7</td> </tr> <tr> <td>City:</td> <td>Baden</td> </tr> <tr> <td>State/Country:</td> <td>SWITZERLAND</td> </tr> <tr> <td>Postal Code:</td> <td>CH-5400</td> </tr> </table>		Name:	ALSTOM TECHNOLOGY LTD	Street Address:	Brown Boveri Strasse 7	City:	Baden	State/Country:	SWITZERLAND	Postal Code:	CH-5400		
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CORRESPONDENCE DATA													
<p>Fax Number: (703)836-7419</p> <p>Phone: 7032996934</p> <p>Email: Ashley.Fernandez@bipc.com</p> <p><i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.</i></p> <p>Correspondent Name: Buchanan Ingersoll &amp; Rooney PC</p> <p>Address Line 1: P.O. Box 1404</p> <p>Address Line 4: Alexandria, VIRGINIA 22313-1404</p>													
ATTORNEY DOCKET NUMBER:	1033275-000639												
NAME OF SUBMITTER:	Patrick C. Keane												

OP \$40.00 13470109

Total Attachments: 6

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# ASSIGNMENT

## (JOINT)

THIS ASSIGNMENT, by (1) Madhavan Narasimhan POYYAPAKKAM, (2) Fernando BIAGIOLI, (3) Khawar SYED, (4) Ronghai MAO, and (5) Stefano BERNERO, residing at (1) Rotkreuz, Switzerland; (2) Fislisbach, Switzerland; (3) Oberrohrdorf, Switzerland; (4) Windisch, Switzerland; and (5) Oberrohrdorf, Switzerland (hereinafter referred to as "the Assignors"), respectively, witnesseth:

WHEREAS, the Assignors have invented certain new and useful improvements in LOBED SWIRLER set forth in an application for Letters Patent of the United States, which is a

- (1) ☐ provisional application
  - (a) ☐ bearing Application No. \_\_\_\_\_, and filed on \_\_\_\_\_;
  - (b) ☐ to be filed herewith; or
- (2) ☒ non-provisional application
  - (a) ☒ bearing Application No. 13/470,109, and filed on May 11, 2012;
  - (b) ☐ having an oath or declaration executed on even date herewith prior to filing of application;
  - (c) ☐ having an oath or declaration executed on a different date than this Assignment; and

WHEREAS, ALSTOM TECHNOLOGY LTD, a corporation duly organized under and pursuant to the laws of Switzerland and having a principal place of business at Brown Boveri Strasse 7, 5400 Baden, Switzerland (hereinafter referred to as "the Assignee"), is desirous of acquiring the entire right, title, and interest in and to said inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications, including provisional applications for Letters Patent of the United States or other countries claiming priority to said application, and in and to any Letters Patent or Patents, United States or foreign, to be obtained therefor and thereon.

NOW, THEREFORE, for good and sufficient consideration, the receipt of which is hereby acknowledged, the Assignors have sold, assigned, transferred, and set over, and by these presents do sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns the entire right, title, and interest in and to the above-mentioned inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications for Letters Patent of the United States or other countries claiming priority to said applications, and any and all Letters Patent or Patents of the United States of America and all foreign countries that may be granted therefor and thereon, and in and to any and all applications claiming priority to said applications, divisions, continuations, and continuations-in-part of said applications, and reissues and extensions of said Letters Patent or Patents, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by the Assignee, for its own use and behoof and the use and behoof of its successors, legal representatives, and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted as fully and entirely as the same would have been held and enjoyed by the Assignors had this sale and assignment not been made;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns, that, at the time of execution and delivery of these presents, the Assignors are the sole and lawful owners of the entire right, title, and interest in and to the inventions set forth in said applications and said applications, including provisional applications, above-mentioned, and that the same are unencumbered, and that the Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns that the Assignors will, whenever counsel of the Assignee, or the counsel of its successors, legal representatives, and assigns, shall advise that any proceeding in connection with said inventions or said applications for Letters Patent or Patents, or any proceeding in connection with Letters Patent or Patents for said inventions in any country, including interference proceedings, is lawful and desirable,

or that any application claiming priority to said application, division, continuation, or continuation-in-part of any applications for Letters Patent or Patents, or any reissue or extension of any Letters Patent or Patents to be obtained thereon, is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement, and defense of Letters Patent or Patents for said inventions, without charge to the Assignee, its successors, legal representatives, and assigns, but at the cost and expense of the Assignee, its successors, legal representatives, and assigns;

AND the Assignors hereby authorize and request the attorneys of Buchanan Ingersoll & Rooney PC to insert in the spaces provided above the title of the invention, filing date, application number, and attorney's docket number of said application when known.

AND the Assignors hereby request the Commissioner of Patents to issue any and all said Letters Patent of the United States to the Assignee as the Assignee of said invention, the Letters Patent to be issued for the sole use and behoof of the Assignee, its successors, legal representatives, and assigns.

DATE 01 JUN 2012

  
MADHAVAN NARASIMHAN POYYAPPAKKAM

DATE 01 JUNE 2012

  
FERNANDO BIAGIOLI

DATE 6/6/2012

  
KHAWAR SYED

DATE \_\_\_\_\_

\_\_\_\_\_  
RONGHAI MAO

DATE \_\_\_\_\_

\_\_\_\_\_  
STEFANO BERNERO

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WHEREAS, ALSTOM TECHNOLOGY LTD., a corporation duly organized under and pursuant to the laws of Switzerland and having a principal place of business at Brown Boveri Strasse 7, 5400 Baden, Switzerland (hereinafter referred to as "the Assignee"), is desirous of acquiring the entire right, title, and interest in and to said inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications, including provisional applications for Letters Patent of the United States or other countries claiming priority to said application, and in and to any Letters Patent or Patents, United States or foreign, to be obtained therefor and thereon.

NOW, THEREFORE, for good and sufficient consideration, the receipt of which is hereby acknowledged, the Assignors have sold, assigned, transferred, and set over, and by these presents do sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns the entire right, title, and interest in and to the above-mentioned inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications for Letters Patent of the United States or other countries claiming priority to said applications, and any and all Letters Patent or Patents of the United States of America and all foreign countries that may be granted therefor and thereon, and in and to any and all applications claiming priority to said applications, divisions, continuations, and continuations-in-part of said applications, and reissues and extensions of said Letters Patent or Patents, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by the Assignee, for its own use and behoof and the use and behoof of its successors, legal representatives, and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted as fully and entirely as the same would have been held and enjoyed by the Assignors had this sale and assignment not been made;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns, that, at the time of execution and delivery of these presents, the Assignors are the sole and lawful owners of the entire right, title, and interest in and to the inventions set forth in said applications and said applications, including provisional applications, above-mentioned, and that the same are unencumbered, and that the Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns that the Assignors will, whenever counsel of the Assignee, or the counsel of its successors, legal representatives, and assigns, shall advise that any proceeding in connection with said inventions or said applications for Letters Patent or Patents, or any proceeding in connection with Letters Patent or Patents for said inventions in any country, including interference proceedings, is lawful and desirable,

or that any application claiming priority to said application, division, continuation, or continuation-in-part of any applications for Letters Patent or Patents, or any reissue or extension of any Letters Patent or Patents to be obtained thereon, is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement, and defense of Letters Patent or Patents for said inventions, without charge to the Assignee, its successors, legal representatives, and assigns, but at the cost and expense of the Assignee, its successors, legal representatives, and assigns;

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DATE \_\_\_\_\_

\_\_\_\_\_  
MADHAVAN NARASIMHAN POYYAPAKKAM

DATE \_\_\_\_\_

\_\_\_\_\_  
FERNANDO BIAGIOLI

DATE \_\_\_\_\_

\_\_\_\_\_  
KHAWAR SYED

DATE June 18, 2012

Mao Ronghai  
\_\_\_\_\_  
RONGHAI MAO

DATE \_\_\_\_\_

\_\_\_\_\_  
STEFANO BERNERO

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MADHAVAN NARASIMHAN POYYAPAKKAM

DATE \_\_\_\_\_

\_\_\_\_\_  
FERNANDO BIAGIOLI

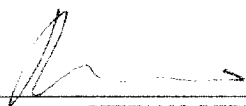
DATE \_\_\_\_\_

\_\_\_\_\_  
KHAWAR SYED

DATE \_\_\_\_\_

\_\_\_\_\_  
RONGHAI MAO

DATE 25.05.2012

  
\_\_\_\_\_  
STEFANO BERNERO

RIRPC Black