

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT4042569

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
DIRK R. ENGLUND	09/07/2016
PIERRE DESJARDINS	08/31/2016
JACOB MOWER	09/07/2016
RECEIVING PARTY DATA	
Name:	THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK
Street Address:	412 LOW MEMORIAL LIBRARY
Internal Address:	535 WEST 116TH STREET
City:	NEW YORK
State/Country:	NEW YORK
Postal Code:	10027
PROPERTY NUMBERS Total: 5	
Property Type	Number
Application Number:	14338034
Application Number:	61714951
Application Number:	61673374
Application Number:	61589610
PCT Number:	US2013021923
CORRESPONDENCE DATA	
Fax Number:	(212)408-2501
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
Phone:	212-408-2500
Email:	NYCDOCKET@BAKERBOTTSCOM
Correspondent Name:	BAKER BOTTS L.L.P.
Address Line 1:	30 ROCKEFELLER PLAZA
Address Line 2:	44TH FLOOR
Address Line 4:	NEW YORK, NEW YORK 10112-4498
ATTORNEY DOCKET NUMBER:	070050.5283
NAME OF SUBMITTER:	CHANELLE ROGERS

SIGNATURE:	/Chanelle Rogers/
DATE SIGNED:	09/08/2016
Total Attachments: 7 source=Assignment5283#page1.tif source=Assignment5283#page2.tif source=Assignment5283#page3.tif source=Assignment5283#page4.tif source=Assignment5283#page5.tif source=Assignment5283#page6.tif source=Assignment5283#page7.tif	

ASSIGNMENT

WHEREAS, WE, **Dirk R. Englund**, a citizen of the United States of America, having a residence address at 114 Morningside Drive, Apt. # 63, New York, NY 10027, **Pierre Desjardins**, a citizen of France, having a residence address at 31 Avenue, Kleber, France 75116, **Jacob Mower**, a citizen of United States of America, having a residence address at 160 West 96th Street, Apt. 2P, New York, NY 10025 (hereinafter "ASSIGNORS"), have made an invention entitled "**Systems And Methods For Telecommunication Using High-Dimensional Temporal Quantum Key Distribution**" as set forth and described in U.S. Application No. **14/338,034**, filed July 22, 2014; International Application No. **PCT/US2013/021923**, filed January 17, 2013; United States Provisional Application No. **61/714,951**, filed October 17, 2012; United States Provisional Application No. **61/673,374**, filed July 19, 2012; United States Provisional Application No. **61/589,610**, filed January 23, 2012; and

WHEREAS, **THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK** (hereinafter "ASSIGNEE"), having its principal place of business at **412 Low Memorial Library, 535 West 116th Street, New York, NY, 10027**, is desirous of acquiring the whole right, title and interest in and to said application for Letters Patent, and any continuations, divisions, extensions, substitutions, reissues and reexaminations thereof;

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN, BE IT KNOWN, that I, the said ASSIGNORS, for and in consideration of valuable considerations unto us moving from said ASSIGNEE, at or before the ensembling and delivery of these presents, the receipt and sufficiency of which is hereby acknowledged, have sold, assigned, transferred and conveyed and by these presents do sell, assign, transfer and convey, unto said ASSIGNEE, its successors and assigns, the entire right, title and interest in and to the said invention entitled "**Systems And Methods For Telecommunication Using High-Dimensional Temporal Quantum Key Distribution**" and any and all improvements thereto, and in and to said application and any division, continuation or continuation-in-part thereof, and in and to any Letters Patent of the United States which may be issued on any of said applications, and any reissues thereof, and in and to any and all applications for Letters Patent filed in foreign countries for said invention or improvements including all priority rights, and any and all Letters Patent which may be granted in foreign countries therefor, and in and to any other applications based in whole or in part on any of the foregoing, TO HAVE AND TO HOLD THE SAME to the full end of the term or terms for which any and all said Letters Patent may be granted;

AND WE, the said ASSIGNORS, do hereby authorize and request the Commissioner of Patents and Trademarks to issue the said Letters Patent of the United States to said ASSIGNEE, as the assignee of the entire right, title and interest in and to the same, for the sole use and benefit of said ASSIGNEE, its successors and assigns;

AND WE, the said **ASSIGNORS**, for the considerations aforesaid, do hereby covenant and agree to and with said **ASSIGNEE**, its successors and assigns, that we have the full power to make this assignment, and that the rights assigned are not encumbered by any grant, license or right heretofore given, and that we, our executors or administrators, shall and will do all lawful acts and things and make, execute and deliver without further compensation, any and all other instruments in writing, further applications, papers, affidavits, powers of attorney, assignments, and other documents which, in the opinion of counsel for said **ASSIGNEE**, its successors and assigns, may be required or necessary more effectively to secure to and vest in said **ASSIGNEE**, its successors and assigns, the entire right, title and interest in and to said invention and improvements, applications, Letters Patent, rights, titles, benefits, privileges, and advantages hereby sold, assigned, transferred and conveyed, and that we will sign any applications for reissue which may be desired by the owner of the patent or patents which may be issued for the said invention or improvements.

IN WITNESS WHEREOF, I, the said **ASSIGNOR** have executed this Assignment this

7th day of September, 2016.



DIRK R. ENGLUND

Witness Signature

Witness Name

IN WITNESS WHEREOF, I, the said **ASSIGNOR** have executed this Assignment this

_____ day of _____, 201____.


PIERRE DESJARDINS

Witness Signature

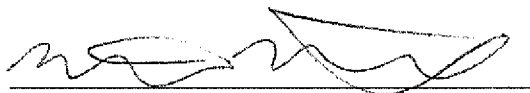
Witness Name

IN WITNESS WHEREOF, I, the said **ASSIGNOR** have executed this Assignment this

7th day of SEPTEMBER, 2016.



JACOB MOWER



Witness Signature

Michael Bernstein
Witness Name

ASSIGNMENT

WHEREAS, WE, **Dirk R. Englund**, a citizen of the United States of America, having a residence address at 114 Morningside Drive, Apt. # 63, New York, NY 10027, **Pierre Desjardins**, a citizen of France, having a residence address at 31 Avenue, Kleber, France 75116, **Jacob Mower**, a citizen of United States of America, having a residence address at 160 West 96th Street, Apt. 2P, New York, NY 10025 (hereinafter "ASSIGNORS"), have made an invention entitled "**Systems And Methods For Telecommunication Using High-Dimensional Temporal Quantum Key Distribution**" as set forth and described in U.S. Application No. **14/338,034**, filed July 22, 2014; International Application No. **PCT/US2013/021923**, filed January 17, 2013; United States Provisional Application No. **61/714,951**, filed October 17, 2012; United States Provisional Application No. **61/673,374**, filed July 19, 2012; United States Provisional Application No. **61/589,610**, filed January 23, 2012; and

WHEREAS, **THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK** (hereinafter "ASSIGNEE"), having its principal place of business at **412 Low Memorial Library, 535 West 116th Street, New York, NY, 10027**, is desirous of acquiring the whole right, title and interest in and to said application for Letters Patent, and any continuations, divisions, extensions, substitutions, reissues and reexaminations thereof;

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN, BE IT KNOWN, that I, the said **ASSIGNORS**, for and in consideration of valuable considerations unto us moving from said **ASSIGNEE**, at or before the ensembling and delivery of these presents, the receipt and sufficiency of which is hereby acknowledged, have sold, assigned, transferred and conveyed and by these presents do sell, assign, transfer and convey, unto said **ASSIGNEE**, its successors and assigns, the entire right, title and interest in and to the said invention entitled "**Systems And Methods For Telecommunication Using High-Dimensional Temporal Quantum Key Distribution**" and any and all improvements thereto, and in and to said application and any division, continuation or continuation-in-part thereof, and in and to any Letters Patent of the United States which may be issued on any of said applications, and any reissues thereof, and in and to any and all applications for Letters Patent filed in foreign countries for said invention or improvements including all priority rights, and any and all Letters Patent which may be granted in foreign countries therefor, and in and to any other applications based in whole or in part on any of the foregoing, TO HAVE AND TO HOLD THE SAME to the full end of the term or terms for which any and all said Letters Patent may be granted;

AND WE, the said **ASSIGNORS**, do hereby authorize and request the Commissioner of Patents and Trademarks to issue the said Letters Patent of the United States to said **ASSIGNEE**, as the assignee of the entire right, title and interest in and to the same, for the sole use and benefit of said **ASSIGNEE**, its successors and assigns;

AND WE, the said **ASSIGNORS**, for the considerations aforesaid, do hereby covenant and agree to and with said **ASSIGNEE**, its successors and assigns, that we have the full power to make this assignment, and that the rights assigned are not encumbered by any grant, license or right heretofore given, and that we, our executors or administrators, shall and will do all lawful acts and things and make, execute and deliver without further compensation, any and all other instruments in writing, further applications, papers, affidavits, powers of attorney, assignments, and other documents which, in the opinion of counsel for said **ASSIGNEE**, its successors and assigns, may be required or necessary more effectively to secure to and vest in said **ASSIGNEE**, its successors and assigns, the entire right, title and interest in and to said invention and improvements, applications, Letters Patent, rights, titles, benefits, privileges, and advantages hereby sold, assigned, transferred and conveyed, and that we will sign any applications for reissue which may be desired by the owner of the patent or patents which may be issued for the said invention or improvements.

IN WITNESS WHEREOF, I, the said **ASSIGNOR** have executed this Assignment this

_____ day of _____, 2015.

DIRK R. ENGLUND

Witness Signature

Witness Name

IN WITNESS WHEREOF, I, the said ASSIGNOR have executed this Assignment this

31st day of August, ~~2015~~ 2016.



PIERRE DESJARDINS



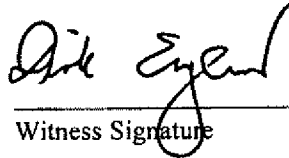
Witness Signature

Witness Name

IN WITNESS WHEREOF, I, the said ASSIGNOR have executed this Assignment this

_____ day of _____, 2015.

JACOB MOWER



Witness Signature

Witness Name