

## PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT8090586

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
RONNY HADANI	03/17/2020
SHLOMO SELIM RAKIB	03/11/2020
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	COHERE TECHNOLOGIES, INC.
<b>Street Address:</b>	2331 ZANKER ROAD
<b>City:</b>	SAN JOSE
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	95131
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	18307436
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(408)608-2809
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	4082141201
<b>Email:</b>	uspto@paradiceli.com
<b>Correspondent Name:</b>	PARADICE AND LI LLP/COHERE TECHNOLOGIES, INC.
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<b>ATTORNEY DOCKET NUMBER:</b>	COHE.P072C1C1
<b>NAME OF SUBMITTER:</b>	RACHEL MENA
<b>SIGNATURE:</b>	/Rachel Mena/
<b>DATE SIGNED:</b>	08/01/2023
<b>Total Attachments: 10</b>	
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In re Patent Application of:  
Ronny HADANI, et al.

Art Unit: 2474

Application No.: 16/041,779

Confirmation No.: 7369

Filed: July 21, 2018

For: METHODS OF DATA CHANNEL  
CHARACTERIZATION AND USES THEREOF

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION AND ASSIGNMENT BY INVENTOR**  
**UNDER RULE 37 C.F.R. § 1.63**

I, Ronny HADANI, of Santa Clara, California, hereby declare that:

I believe I am the sole original inventor or an original joint inventor of a claimed invention in a patent application entitled:

**METHODS OF DATA CHANNEL CHARACTERIZATION AND USES THEREOF**

which was filed on July 21, 2018, as Application No. 16/041,779, which is a continuation in part of US application 15/604,072, filed May 24, 2017, now US Patent No. 10,034,184, issued July 24, 2018, which is a continuation of US patent application 14/805,407, filed July 21, 2015, now US patent 9,668,148, issued May 30, 2017, which is a continuation in part of US patent application 14/583,911 "OTFS METHODS OF DATA CHANNEL CHARACTERIZATION AND USES THEREOF", filed January 19, 2015, now US patent 9,444,514, issued September 13, 2016, which claimed the priority benefit of US provisional application 62/027,231, "METHODS OF OPERATING AND IMPLEMENTING WIRELESS OTFS COMMUNICATIONS SYSTEMS", filed July 21, 2014; application 14/583,911 is also a continuation in part of US patent application 14/341,820, "ORTHONORMAL TIME-FREQUENCY SHIFTING AND SPECTRAL SHAPING COMMUNICATIONS METHOD", filed July 27, 2014, now US patent 9,083,483, issued July 14, 2015; application 14/341,820 in turn was a continuation of US application 13/117,119, "ORTHONORMAL TIME-FREQUENCY SHIFTING AND SPECTRAL SHAPING COMMUNICATIONS METHOD", filed May 26, 2011, now US patent 8,879,378, issued November 4, 2014; application 13/117,119 claimed the priority benefit of US provisional patent application 61,349,619, "ORTHONORMAL TIME-FREQUENCY SHIFTING AND SPECTRAL SHAPING COMMUNICATIONS METHOD", filed May 28, 2010; Application 14/583,911 was also a

continuation in part of US patent application 13/430,690, "SIGNAL MODULATION METHOD RESISTANT TO ECHO REFLECTIONS AND FREQUENCY OFFSETS", filed March 27, 2012, now US patent 9,083,595, issued July 14, 2015; application 13/430,690 in turn claimed the priority benefit of US provisional patent provisional application 61/615,884, "SIGNAL MODULATION METHOD RESISTANT TO ECHO REFLECTIONS AND FREQUENCY OFFSETS", filed March 26, 2012; application 13/430,690 was also a continuation in part of US patent application 13/117, 119, "ORTHONORMAL TIME-FREQUENCY SHIFTING AND SPECTRAL SHAPING COMMUNICATIONS METHOD", filed May 26, 2011, now US patent 8,879,378, issued November 4, 2014; application 14/583,911 was also a continuation in part of US patent application 13/927,091, filed June 25, 2013, "Modulation and equalization in an orthonormal time-frequency shifting communications system", now US patent 9,130,638, issued September 8, 2015; application 13/927,091 claimed the priority benefit of US provisional patent application 61/664,020 filed June 25, 2012.

I believe the following persons are original joint inventors of the above-identified patent application(s):

Shlomo Selim RAKIB, of Santa Clara, California

The above-identified application was made or authorized to be made by me.

I have reviewed and understand the contents of the above-identified patent application including the claims.

I am aware of the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 CFR §1.56.

I hereby acknowledge that any willful false statement made in the above declaration is punishable under 18 USC §1001 by fine or imprisonment of not more than five (5) years, or both.

## ASSIGNMENT

I hereby assign to **Cohere Technologies, Inc.**, a corporation of Delaware, having a place of business at 2550 Walsh Avenue, Suite 150, Santa Clara, California 95051, and its successors and assigns (collectively hereinafter called "the Assignee"), the entire right, title and interest throughout the world in any and all inventions and improvements which are described in an application for United States Patent, entitled *METHODS OF DATA CHANNEL CHARACTERIZATION AND USES THEREOF*, filed on July 21, 2018, as Application No. 16/041,779, which is a continuation in part of US application 15/604,072, filed May 24, 2017, now US Patent No. 10,034,184, issued July 24, 2018, which is a continuation of US patent application 14/805,407, filed July 21, 2015, now US patent 9,668,148, issued May 30, 2017, which is a continuation in part of US patent application 14/583,911 "OTFS METHODS OF DATA CHANNEL CHARACTERIZATION AND USES THEREOF", filed January 19, 2015, now US patent 9,444,514, issued September 13, 2016, which claimed the priority benefit of US provisional application 62/027,231, "METHODS OF OPERATING AND IMPLEMENTING WIRELESS OTFS COMMUNICATIONS SYSTEMS", filed July 21, 2014; application 14/583,911 is also a continuation in part of US patent application 14/341,820, "ORTHONORMAL TIME-FREQUENCY SHIFTING AND SPECTRAL SHAPING COMMUNICATIONS METHOD", filed July 27, 2014, now US patent 9,083,483, issued July 14, 2015; application 14/341,820 in turn was a continuation of US application 13/117,119, "ORTHONORMAL TIME-FREQUENCY SHIFTING AND SPECTRAL SHAPING COMMUNICATIONS METHOD", filed May 26, 2011, now US patent 8,879,378, issued November 4, 2014; application 13/117,119 claimed the priority benefit of US provisional patent application 61,349,619, "ORTHONORMAL TIME-FREQUENCY SHIFTING AND SPECTRAL SHAPING COMMUNICATIONS METHOD", filed May 28, 2010; Application 14/583,911 was also a continuation in part of US patent application 13/430,690, "SIGNAL MODULATION METHOD RESISTANT TO ECHO REFLECTIONS AND FREQUENCY OFFSETS", filed March 27, 2012, now US patent 9,083,595, issued July 14, 2015; application 13/430,690 in turn claimed the priority benefit of US provisional patent provisional application 61/615,884, "SIGNAL MODULATION METHOD RESISTANT TO ECHO REFLECTIONS AND FREQUENCY OFFSETS", filed March 26, 2012; application 13/430,690 was also a continuation in part of US patent application 13/117, 119, "ORTHONORMAL TIME-FREQUENCY SHIFTING AND SPECTRAL SHAPING COMMUNICATIONS METHOD", filed May 26, 2011, now US patent 8,879,378, issued November 4, 2014; application 14/583,911 was also a continuation in part of US patent application 13/927,091, filed June 25, 2013, "Modulation and equalization in an orthonormal time-frequency shifting communications system", now US patent 9,130,638, issued September 8, 2015; application 13/927,091 claimed the priority benefit of US provisional patent application 61/664,020 filed June 25, 2012.

This assignment includes the entire right, title and interest in said application(s), all legal equivalents thereof in any country, any and all United States and foreign patents, utility models,

and design registrations granted for any of said inventions and improvements, including, but not limited to, all divisions, continuations, reissues, reexamination certificates, any and all certificates issued in any post-grant proceeding, and extensions of said application(s) and patents of the United States, foreign patents, utility models, and design registrations, and the right to claim priority based on the filing date of said application(s) under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes, and the right to seek relief and recover all damages, including, but not limited to, a reasonable royalty, by reason of infringement or any other violation of patent or patent application rights. I authorize the Assignee to apply in all countries in my name or in the name of the Assignee for patents, utility models, design registrations and like rights of exclusion and for inventors' certificates for said inventions and improvements.

In addition, I hereby confirm the sale, assignment, and transfer to the Assignee of the entire right, title and interest throughout the world in said inventions and improvements by operation of an employment agreement between me and the Assignee existing at the time said inventions and improvements were made. Should I have any remaining interest, I hereby sell, assign, and transfer to the Assignee any right, title and interest I may have in said inventions and improvements anywhere in the world.

The foregoing assignments, sale and transfer have been made for good and valuable consideration, the receipt of which is hereby acknowledged.

I hereby represent and covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into that would conflict with the assignment of said inventions and improvements to the Assignee.

I further covenant for myself and my respective heirs, legal representatives and assigns, to assist the Assignee in handling various procedures, tasks and documentation in connection with this assignment, including, but not limited to, providing to the Assignee promptly upon the request of the Assignee all pertinent facts and documents relating to said invention and improvements, and said patents, said legal equivalents or other legal instrument as may be known and accessible to me and testifying as to the same in any interference, litigation, or proceeding relating thereto, and promptly executing and delivering to the Assignee or its legal representative any and all papers, documents, instruments or affidavits in connection with obtaining, maintaining, issuing or enforcing said application(s), said inventions and improvements, and said patents, said equivalents and other legal instrument which may be necessary or desirable to carry out the purposes thereof.

I am competent to execute the above declaration and assignment. I hereby have duly executed the declaration and assignment below with my name.

Full name of inventor: Ronny HADANI

Inventor's signature:  \_\_\_\_\_

Date: March 17, 2020

The Assignee hereby acknowledges the assignment. The undersigned is authorized to act on behalf of the Assignee.

Assignee: **Cohere Technologies, Inc.**

Authorized officer's legal name: \_\_\_\_\_

Authorized officer's title: \_\_\_\_\_

Authorized officer's signature: \_\_\_\_\_

Date: \_\_\_\_\_

Perkins Coie LLP  
P.O. Box 1247  
Seattle, Washington 98111-1247  
Telephone: (858) 720-5700  
Facsimile: (206) 359-7198

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In re Patent Application of:  
Ronny HADANI, et al.

Art Unit: 2474

Application No.: 16/041,779

Confirmation No.: 7369

Filed: July 21, 2018

For: METHODS OF DATA CHANNEL  
CHARACTERIZATION AND USES THEREOF

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Commissioner for Patents  
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**DECLARATION AND ASSIGNMENT BY INVENTOR**  
**UNDER RULE 37 C.F.R. § 1.63**

I, Shlomo Selim RAKIB, of Santa Clara, California, hereby declare that:

I believe I am the sole original inventor or an original joint inventor of a claimed invention in a patent application entitled:

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and design registrations granted for any of said inventions and improvements, including, but not limited to, all divisions, continuations, reissues, reexamination certificates, any and all certificates issued in any post-grant proceeding, and extensions of said application(s) and patents of the United States, foreign patents, utility models, and design registrations, and the right to claim priority based on the filing date of said application(s) under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes, and the right to seek relief and recover all damages, including, but not limited to, a reasonable royalty, by reason of infringement or any other violation of patent or patent application rights. I authorize the Assignee to apply in all countries in my name or in the name of the Assignee for patents, utility models, design registrations and like rights of exclusion and for inventors' certificates for said inventions and improvements.

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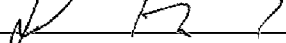
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I am competent to execute the above declaration and assignment. I hereby have duly executed the declaration and assignment below with my name.

Full name of inventor: Shlomo Selim RAKIB

Inventor's signature:  \_\_\_\_\_

Date: March 11, 2020

The Assignee hereby acknowledges the assignment. The undersigned is authorized to act on behalf of the Assignee.

Assignee: **Cohere Technologies, Inc.**

Authorized officer's legal name: \_\_\_\_\_

Authorized officer's title: \_\_\_\_\_

Authorized officer's signature: \_\_\_\_\_

Date: \_\_\_\_\_

Perkins Coie LLP  
P.O. Box 1247  
Seattle, Washington 98111-1247  
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Facsimile: (206) 359-7198