

## PATENT ASSIGNMENT COVER SHEET

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<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
ARAFAT AL-DWEIK	06/06/2018
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<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15996910
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<b>SIGNATURE:</b>	/Mariel Koons/
<b>DATE SIGNED:</b>	07/12/2018
<b>Total Attachments: 2</b>	
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source=2018-07-12 Assignment 097226-1088222#page2.tif	

**ASSIGNMENT**  
(Patent Application)

I, the undersigned, have invented certain inventions and improvements disclosed in a utility non-provisional patent application entitled "DIRECT DATA DETECTION FOR MIMO COMMUNICATIONS SYSTEMS," filed with the U.S. Patent & Trademark Office on June 4, 2018 and assigned serial no. 15/996,910.


For good and valuable consideration, the receipt and sufficiency of which I acknowledge,  
I:

1. Agree to assign, transfer, convey, and sell, hereby assign, transfer, convey, and sell and have assigned, transferred, conveyed, and sold to Khalifa University of Science and Technology, having a principal place of business at PO Box 127788, Abu Dhabi, United Arab Emirates ("Assignee"), the entire right, title, and interest in and to:
  - (a) all intellectual property (including, without limitation, any innovation, information, invention, discovery, product, process, work or design) disclosed, embodied, shown, or claimed in the above-referenced patent application, implicitly or explicitly;
  - (b) the above-referenced patent application, and all applications based in whole or in part upon the above-referenced patent application, including, without limitation, all applications that are a provisional, non-provisional, design, divisional, continuation, continuation-in-part, registration, utility model, industrial design, reissue, renewal, substitute, extension, reexamination, post-grant review, inter partes review, supplemental examination or non-U.S. patent application or application for other rights based in whole or in part on the above-referenced patent application;
  - (c) the right to claim priority to the above-referenced patent application, and any and all applications referenced in subsection (b); and
  - (d) all patents (including, without limitation, all U.S. and non-U.S. patents, registrations, utility models, industrial designs, design patents, counterparts, continuations, continuations-in-part, divisionals, reissues, renewals, substitutes, extensions, reexaminations, post-grant reviews, inter partes reviews and supplemental examinations) that are granted or issued upon, or that claim priority to, any and all applications described in (b) of this paragraph or that disclose or claim intellectual property described in (a) of this paragraph, in whole or in part; and
  - (e) all claims for damages by reason of past infringement of any rights under the applications or patents described in (a), (b) or (c) of this paragraph (including provisional rights to reasonable royalties pursuant to 35 U.S.C. §154(d)) and the right to sue for and collect such damages and royalties for Assignee's own use.
2. Authorize and request the U.S. Patent and Trademark Office or any other U.S. or non-U.S. agency to issue to the Assignee any and all patent(s), or other rights or documents, resulting from the intellectual property, patent application(s) and patents described in paragraph 1 of this Assignment.
3. Agree to sign all papers and documents, including without limitation, applications, declarations, oaths and petitions, and, at the Assignee's expense, perform any other acts that

are necessary in connection with prosecution of patent application(s) or intellectual property described in paragraph 1 of this Assignment and the enforcement of patent(s) or other rights resulting from such patent application(s) or intellectual property.

4. Agree that the terms, covenants, and conditions of this Assignment shall inure to the benefit of the Assignee, its successors, assigns and other legal representative, and shall be binding upon me, as well as my heirs, legal representatives, and assigns.
5. Promise and affirm that I have not entered, and will not enter, into any assignment, contract, or understanding that conflicts with this Assignment.

Signed on the date indicated beside my signature.

Signature:  Date: 06/06/2018  
Arafat Al-Dweik

Assignee hereby accepts this Assignment.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_