PATENT ASSIGNMENT

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NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Jiatong Sun	06/30/2011
Vincent Kin Nang Lau	06/30/2011

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PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	13173251

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NAME OF SUBMITTER:	Thomas E. Watson

Total Attachments: 3

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OF \$40.00 131/3251

ASSIGNMENT OF PATENT RIGHTS

(1) In consideration of the sum of one U.S. dollar (\$1.00) and other good and valuable consideration, the receipt of which is hereby acknowledged, I [we], the undersigned inventor[s]: Given Name: Jiatong SUN Residence: Hong Kong, China Citizenship: China Rm 609C, Tower A, University Apartment, Mailing Address: The Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong Given Name: Vincent Kin Nang LAU Residence: Citizenship: Hong Kong, China Hong Kong, China Rm 704, Kwong Ying House, Mailing Address: Kwong Ming Court, Tseung Kwan O, New Territories, Hong Kong hereby sell, assign, transfer, and convey unto: The Hong Kong University of Science and Technology a Hong Kong educational and research institution, having an address at Clear Water Bay, Kowloon, Hong Kong ("Assignee"), and its successors, assigns and legal representatives, all right, title, and interest that exist today and may exist in the future in and to any and all of the following (collectively, "Patent Rights"): (a) The U.S. Patent Application ("Application") entitled: CROSS-LAYER OPTIMIZATION FOR NEXT-GENERATION WIFL SYSTEMS which was filed on as

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United States Application Number	and
which has been executed by the undersigned prior hereto or concurrently her	ewith;
any and all patents and patent applications (i) to which the Application directly indirectly claims priority, (ii) for which the Application directly or indirectly form for priority, and/or (iii) that were co-owned applications that incorporate by reference into, the Application;	ns a basis
any and all reissue applications, reexaminations, extensions, continuation appropriate continuation-in-part applications, continuing prosecution applications, request continued examination, divisional applications, substitute applications, renewapplications, registrations, and any and all other patent applications that have shall be filed in the U.S. relating to any item in any of the foregoing categories	ts for al e been or
any and all patents (including, without limitation, reissues, continuations, cont part and divisions) issuing from or relating to any of the foregoing categories (c);	

- (e) any and all foreign patents, foreign patent applications, and foreign counterparts relating to any item in any of the foregoing categories (a) through (d), including, without limitation, certificates of invention, utility models, industrial design protection, design patent
- (f) any and all items in any of the foregoing in categories (a) through (e) whether or not claims in any of the foregoing have been rejected, withdrawn, cancelled, or the like;

protection, and other governmental grants or issuances;

- (g) any and all inventions, invention disclosures, improvements, and discoveries described in any item in any of the foregoing categories (a) through (e) and all other rights arising out of such inventions, invention disclosures, improvements, and discoveries;
- (h) any and all rights to apply in any or all countries of the world for patents, certificates of invention, utility models, industrial design protections, design patent protections, or other governmental grants or issuances of any type related to any item in any of the foregoing categories (a) through (e) and (g), including, without limitation, under the Paris Convention for the Protection of Industrial Property, the International Patent Cooperation Treaty, or any other convention, treaty, agreement, or understanding;
- (i) any and all causes of action (whether known or unknown or whether currently pending, filed, or otherwise) and other enforcement rights under, or on account of, any item in any of the foregoing categories (a) through (e), (g), and (h), including, without limitation, all causes of action and other enforcement rights for (i) damages, (ii) injunctive relief, and (iii) any other remedies of any kind for past, current, and future infringement; and
- (j) any and all rights to collect royalties and other payments under or on account of any item in any of the foregoing categories (a) through (e) and (g) through (i).
- (2) I [we] agree to, at the reasonable request of Assignee and without demanding any further consideration therefore, do all things necessary, proper, or advisable, including without limitation, the execution, acknowledgment, and recordation of specific assignments, oaths, declarations, and other documents on a country-by-country basis, to assist Assignee in obtaining, perfecting, sustaining, and/or enforcing the Patent Rights. Such assistance will include providing prompt production of pertinent facts and documents, giving of testimony, execution of petitions, oaths, powers of attorney, specifications, declarations or other papers, and other assistance reasonably

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(b)

(c)

(d)

necessary for filing patent applications, complying with any duty of disclosure, and conducting prosecution, reexamination, reissue, interference or other priority proceedings, opposition proceedings, cancellation proceedings, public use proceedings, infringement or other court actions and the like with respect to the Patent Rights. With prior written approval by Assignee, Assignee will pay Assignor's reasonable costs and expenses.

- (3) I [we] agree that said Assignee may apply for and receive patent or patents for said Patent Rights in its own name, and hereby authorize the respective patent office or governmental agency in each jurisdiction to issue any and all patents, certificates of invention, utility models or other governmental grants or issuances that may be granted upon any of the Patent Rights in the name of Assignee, as the assignee to the entire interest therein.
- (4) I [we] covenant that no assignment, grant, mortgage, license, or other agreement affecting the Patent Rights has been made to others or will be made to others, and that full right to convey the Patent Rights as herein expressed is possessed.
- (5) I [we] hereby authorize and request the attorneys Turocy & Watson, LLP of Cleveland, OH and Bellevue, WA to insert in the spaces provided above the filing date, application number, and attorney docket number of said application when known.
- (6) I [we] agree that the terms and conditions of this Assignment of Patent Rights will inure to the benefit of Assignee, its successors, assigns, and other legal representatives and will be binding upon the undersigned.

Inventor[s]:			
Inventor's Name:	Jiatong SUN		
Inventor's Signature:	Sun havening	Date	36 Jan 2017
Inventor's Name:	Vincent Kip Nang LAU		
Inventor's Signature:	- Av z	Date	30 Jun 2011
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