504757307 01/31/2018

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
MINSEOK NOH	01/30/2018
JINSAM KWAK	01/30/2018
JUHYUNG SON	01/30/2018
GEONJUNG KO	01/30/2018

RECEIVING PARTY DATA

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State/Country:	KOREA, REPUBLIC OF	
Postal Code:	06776	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15749097

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NAME OF SUBMITTER:	AZATUHI CHINARYAN	
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DATE SIGNED:	01/31/2018	

Total Attachments: 3

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PATENT 504757307 REEL: 044793 FRAME: 0030

ASSIGNMENT

WHEREAS, I/we, Minseok NOH of Seoul, Korea, Jinsam KWAK of Gyeonggi-do, Korea, Juhyung SON of Gyeonggi-do, Korea and Geonjung KO of Gyeonggi-do, Korea ("Assignor"), am/are the inventor(s) of an invention entitled "MULTI-CARRIER SIGNAL TRANSMISSION METHOD, DEVICE, AND SYSTEM" that is the subject matter of: (check all that apply)

- [x] an application for Letters Patent which claims the priority to Korean Patent Application No. <u>10-2015-0108494</u> filed on <u>July 31, 2015</u>.
- [x] an application for Letters Patent which claims the priority to Korean Patent Application No. <u>10-2015-0112736</u> filed on August 10, 2015,
- [x] an application for Letters Patent which claims the priority to Korean Patent Application No. <u>10-2015-0121293</u> filed on <u>August 27, 2015</u>.
- [x] an application for Letters Patent which claims the priority to Korean Patent Application No. <u>10-2015-0123518</u> filed on <u>September 1, 2015.</u>
- [x] an application for Letters Patent which claims the priority to Korean Patent Application No. 10-2015-0123523 filed on September 1, 2015.
- [x] an application for Letters Patent which claims the priority to Korean Patent Application No. 10-2015-0141876 filed on October 8, 2015.
- [x] an application made under the Patent Cooperation Treaty which is identifiable at WIPO by or claiming the priority or benefit of Application No. PCT/KR2016/008467 filed on August 1, 2016,
- [x] an application for Letters Patent which is identifiable in the Patent Office of <u>US</u> by Application No. <u>15/749,097</u> filed on <u>January 30, 2018</u>;

WHEREAS, <u>WILUS INSTITUTE OF STANDARDS AND TECHNOLOGY INC.</u>, an <u>institute</u> organized and existing under the laws of <u>Korea</u> ("Assignee"), and having offices at <u>2F 48 Mabang-ro Seocho-gu</u>, <u>Seoul</u>, <u>Korea 06776</u> is desirous of acquiring the entire right, title and interest in and to the invention, the applications, and any and all Letters Patent or similar foreign or domestic legal protection

[x]	in the United States
[]	in all other countries or jurisdictions

"NOW THEREFORE, for good and valuable consideration, the receipt and adequacy of which is hereby acknowledged,

- a) I/we agree to transfer, and
- b) I/we do hereby transfer,

to Assignee, its successors and assigns, effective as of <u>July 31, 2015</u> nunc pro tunc, my/our entire right, title and interest in the above named countries and jurisdictions in and to the following including the right to sue for past infringement: the invention, the above-identified applications, all applications from which any of the above-identified applications claim priority, corresponding U.S. and non-U.S. applications, any continuation, division, renewal, or substitute for the applications, all Letters Patent, any reissue, re-examination, or similar legal protection issuing related to the Letters Patent, and all rights and benefits under any applicable treaty or convention, and I/we authorize the Director of the United States Patent and Trademark Office or foreign equivalent to issue the Letters Patent or similar legal protection to the

Assignee."

I/We authorize the Assignee, its successors and assigns, to insert in this instrument the filing date(s) and application numbers when ascertained. I/We further authorize the Assignee, its successors and assigns, or anyone it may properly designate, to apply for Letters Patent or similar legal protection, in its own name if desired, in the above named countries and jurisdictions and appoint Assignee the common representative in the above identified international application and any international application for the invention.

I/We represent to the Assignee, its successors and assigns, that I/we shall not execute any writing or do any act whatsoever conflicting with this Assignment. I/We, my/our executors or administrators, will at any time upon request, without additional consideration, but at the expense of the Assignee, its successors and assigns, execute and deliver to Assignee or its legal representatives such additional writings and do such additional acts as the Assignee, its successors and assigns, may deem desirable to perfect its enjoyment of this grant, and render all assistance in making application for and obtaining, maintaining, and enforcing the Letters Patent or similar legal protection on the invention in any and all countries and jurisdictions, including without limitation providing testimony in any related interference, litigation or proceeding. To the extent that I/we, my/our executors or administrators are unable or unavailable to execute and deliver to Assignee or its legal representatives such additional writings and do such additional acts as Assignee, its successors and assigns may deem desirable to perfect its enjoyment of this grant, and render all assistance in making application for and obtaining, maintaining, and enforcing the Letters Patent or similar legal protection on the invention in any and all countries and jurisdictions, I/we, my/our executors or administrators hereby authorize Assignee, its successors and assigns to act on my/our behalf/behalves.

If any provision(s) of this Assignment are held unenforceable or in conflict with the law of any jurisdiction, the validity of the remaining provisions will not be affected by such holding and the part held unenforceable in or in conflict with the law of one jurisdiction will remain in effect for other jurisdictions until held unenforceable or in conflict with the law of that jurisdiction.

Minseok NOH

(Inventor / Assignor)

Jan-30-2018

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	Juhyung SON
	(Inventor / Assignor) Jan 30 20/8 Date
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	Geonjung KO
	(Inventor / Assignor)
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RECORDED: 01/31/2018