

## PATENT ASSIGNMENT COVER SHEET

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
QIANDENG LIANG	01/05/2018
XIAOHU XU	01/04/2018
QIN WU	01/05/2018
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	HUAWEI TECHNOLOGIES CO., LTD.
<b>Street Address:</b>	HUAWEI ADMINISTRATION BUILDING, BANTIAN,
<b>Internal Address:</b>	LONGGANG DISTRICT
<b>City:</b>	SHENZHEN, GUANGDONG
<b>State/Country:</b>	CHINA
<b>Postal Code:</b>	518129
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15866305
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(972)628-3616
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<b>ATTORNEY DOCKET NUMBER:</b>	HUAW08-72562
<b>NAME OF SUBMITTER:</b>	ROBERT D. MCCUTCHEON
<b>SIGNATURE:</b>	/Robert D. McCutcheon, Reg. #38,717/
<b>DATE SIGNED:</b>	01/09/2018
<b>Total Attachments: 4</b>	
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PATENT

Attorney Docket No. \_\_\_\_\_  
Client Reference No. 84472562US04

ASSIGNMENT

WHEREAS, WE,

Qiandeng Liang  
Huawei Administration Building  
Bantian, Longgang District  
Shenzhen, 518129, Guangdong  
P.R.CHINA; and

Xiaohu Xu  
Huawei Administration Building  
Bantian, Longgang District  
Shenzhen, 518129, Guangdong  
P.R.CHINA; and

Qin Wu  
Huawei Administration Building  
Bantian, Longgang District  
Shenzhen, 518129, Guangdong  
P.R.CHINA;

have invented and own a certain invention entitled:

METHOD FOR OBTAINING PATH INFORMATION AND APPARATUS

for which invention we have executed an application (provisional or non-provisional) for a U.S. patent, which was filed on \_\_\_\_\_, under U.S. Application No. \_\_\_\_\_ and

WHEREAS, HUAWEI TECHNOLOGIES CO.,LTD., Huawei Administration Building Bantian, Longgang District Shenzhen, 518129, Guangdong P.R.CHINA; hereinafter referred to as Assignee, is desirous of acquiring the entire domestic and foreign right, title, and interest in and under the invention described in the patent application.

NOW, THEREFORE, for good and valuable considerations, the receipt and sufficiency of which are hereby acknowledged, we assign and transfer to the Assignee and the Assignee's legal representatives, successors and assigns the full and exclusive rights in and to the invention in the U.S. and every foreign country and the entire right, title, and interest in and to the patent application and other such applications (e.g., provisional applications, non-provisional applications, continuations, continuations-in-part, divisionals, reissues, reexaminations, National phase applications, including petty patent applications, and utility model applications) that may be filed in the United States and every foreign country on the invention, and the patents, extensions, or derivations thereof, both foreign and domestic, that may issue thereon, and we do hereby authorize and request the Commissioner of Patents to issue U.S. patents to the above-mentioned Assignee agreeably with the terms of this assignment document.

WE HEREBY AUTHORIZE the Assignee to insert in this assignment document the filing date and application number of the application if the date and number are unavailable at the time this document is executed.

WE DO HEREBY COVENANT and agree with the Assignee that we will not execute any writing or do any act whatsoever conflicting with the terms of this assignment document set

forth herein, and that we will at any time upon request, without further or additional consideration, but at the expense of the Assignee, execute such additional assignments and other writings and do such additional acts as the Assignee may deem necessary or desirable to

PATENT

REEL: 044578 FRAME: 0062

In re Appln. of Liang et al.  
Attorney Docket No. \_\_\_\_\_

perfect the Assignee's enjoyment of this assignment, and render all necessary assistance in making application for and obtaining original, continuation, continuation-in-part, divisional, reissued, reexamined, and National phase patents of the U.S. or of any and all foreign countries on the invention, and in enforcing any rights or chooses in action accruing as a result of such applications or patents, and by executing statements and other affidavits, it being understood that the foregoing covenant and agreement shall bind, and inure to the benefit of, the assigns and legal representatives of all parties hereto.

IN WITNESS WHEREOF, We have hereunder set our hands on the dates shown below.

Date Jan 5, 2018

Qiandeng Liang  
Qiandeng Liang

Date \_\_\_\_\_

\_\_\_\_\_  
Xiaohu Xu

Date \_\_\_\_\_

\_\_\_\_\_  
Qin Wu

In re Appln. of Liang et al.  
Attorney Docket No. \_\_\_\_\_

other writings and do such additional acts as the Assignee may deem necessary or desirable to perfect the Assignee's enjoyment of this assignment, and render all necessary assistance in making application for and obtaining original, continuation, continuation-in-part, divisional, reissued, reexamined, and National phase patents of the U.S. or of any and all foreign countries on the invention, and in enforcing any rights or chooses in action accruing as a result of such applications or patents, and by executing statements and other affidavits, it being understood that the foregoing covenant and agreement shall bind, and inure to the benefit of, the assigns and legal representatives of all parties hereto.

**IN WITNESS WHEREOF**, We have hereunder set our hands on the dates shown below.

Date \_\_\_\_\_

\_\_\_\_\_  
Qiandeng Liang

Date Jan 4, 2018

Xiaohu Xu  
\_\_\_\_\_  
Xiaohu Xu

Date \_\_\_\_\_

\_\_\_\_\_  
Qin Wu

In re Appln. of Liang et al.

Attorney Docket No. \_\_\_\_\_

other writings and do such additional acts as the Assignee may deem necessary or desirable to perfect the Assignee's enjoyment of this assignment, and render all necessary assistance in making application for and obtaining original, continuation, continuation-in-part, divisional, reissued, reexamined, and National phase patents of the U.S. or of any and all foreign countries on the invention, and in enforcing any rights or chooses in action accruing as a result of such applications or patents, and by executing statements and other affidavits, it being understood that the foregoing covenant and agreement shall bind, and inure to the benefit of, the assigns and legal representatives of all parties hereto.

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\_\_\_\_\_  
Qiandeng Liang

Date \_\_\_\_\_

\_\_\_\_\_  
Xiaohu Xu

Date Jan 5, 2018

Qin Wu  
\_\_\_\_\_  
Qin Wu