504183977 01/18/2017 PATENT ASSIGNMENT COVER SHEET

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| | SUBMISSION TYPE: | | NEW ASSIGNMENT | | |
|--|---------------------------------|--|---|--------|--|
| NATURE OF CONVEYANCE: | | ASSIGNMENT | ASSIGNMENT | | |
| CONVEYING PARTY | ΔΤΑ | | | | |
| | | Name | Execution | Date | |
| YANFENG JIA | | | 01/10/2017 | | |
| LEI TANG | | | 01/13/2017 | | |
| PENGFEI XIE | | | 01/10/2017 | | |
| RECEIVING PARTY D | ΑΤΑ | | | | |
| Name: | HUAW | HUAWEI TECHNOLOGIES CO., LTD. | | | |
| Street Address: | Huawe | Huawei Administration Building | | | |
| Internal Address: | Bantia | Bantian, Longgang District | | | |
| City: | Shenzl | Shenzhen | | | |
| State/Country: | CHINA | N | | | |
| Postal Code: | 518129 | 518129 | | | |
| | | 15326308 | | | |
| Property Type Application Number: 1532 | | | Number 6308 | | |
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| CORRESPONDENCE DATA Fax Number: (972) | | (972)731-2289 | | | |
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PATENT REEL: 041007 FRAME: 0287

PATENT Attorney Docket No. 4576-53800 Client Reference No. 84029597US03

ASSIGNMENT

WHEREAS, WE,

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

Pengfei Xie Huawei Administration Building Bantian, Longgang District Shenzhen, 518129, Guangdong P.R.CHINA; Lei Tang Huawei Administration Building Bantian, Longgang District Shenzhen, 518129, Guangdong P.R.CHINA; and

have invented and own a certain invention entitled:

METHOD FOR DETECTING SUBSTRATE CRACK, SUBSTRATE, AND DETECTION CIRCUIT

for which invention we have executed an application (provisional or non-provisional) for a U.S. patent, which was filed on 01/13/2017, under U.S. Application No 15326308 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, 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

PATENT REEL: 041007 FRAME: 0288

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In re Appln, of Jia et al. Attorney Docket No. 4576-53800

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.

| DateJon10201] | Yanfeni J.a. |
|---------------|--------------|
| | Yanfeng Jia |
| Date | Lei Tang |
| Date | Pengfei Xie |

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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 | Yanfong Jia |
|------------------|-------------|
| Date Jan 13 2017 | Lei Jang |
| | Lei Tang & |
| Date | |
| | Pengfei Xie |

In re Appln. of Jia et al. Attorney Docket No. 4576-53800

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 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_____

Yanfeng Jia

Date

Lei Tang

an.10 201 Date

Pengfei Xie

PengfeiXie