

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT7561230

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
Peng GUAN	09/16/2020
Xiaoyong TANG	08/13/2015
Xiaona WANG	12/11/2020
Xi Zhang	12/10/2020
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	HUAWEI TECHNOLOGIES CO., LTD.
<b>Street Address:</b>	HUAWEI ADMINISTRATION BUILDING
<b>Internal Address:</b>	BANTIAN, 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>
Application Number:	17095017
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(877)769-7945
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	+1 (214) 760-6132
<b>Email:</b>	apsi@fr.com
<b>Correspondent Name:</b>	JONATHAN A. SOLOMON
<b>Address Line 1:</b>	FISH & RICHARDSON P.C.
<b>Address Line 2:</b>	P.O.BOX 1022
<b>Address Line 4:</b>	MINNEAPOLIS, MINNESOTA 55440-1022
<b>ATTORNEY DOCKET NUMBER:</b>	43968-1398001
<b>NAME OF SUBMITTER:</b>	JUDITH A. WITZEL
<b>SIGNATURE:</b>	/Judith A. Witzel/
<b>DATE SIGNED:</b>	09/27/2022
Total Attachments: 19	

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**PATENT**

Attorney Docket No. 43968-1398001

Client Reference No. 85754356US08

**ASSIGNMENT**

**WHEREAS, WE,**

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

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

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

Xi Zhang  
Kanata-Suite 400, 303 Terry Fox  
Drive, Ottawa 231  
Canada.;

have invented and own a certain invention entitled:

**BEAM TRAINING METHOD, APPARATUS, AND SYSTEM**

for which invention we have executed an application (provisional or non-provisional) for a U.S. patent, which was filed on 11/11/2020 under U.S. Application No. 17/095,017 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

In re Appln. of Guan 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 Sept 16, 2020

Peng Guan  
Peng Guan

Date \_\_\_\_\_

\_\_\_\_\_  
Xiaoyong Tang

Date \_\_\_\_\_

\_\_\_\_\_  
Xiaona Wang

Date \_\_\_\_\_

\_\_\_\_\_  
Xi Zhang

## VERIFICATION OF TRANSLATION

I, Hong Xiang, hereby solemnly affirm that I have a fluent knowledge of English and Chinese languages, and that the document titled "Partial Translation of Chengdu Huawei Technologies Co., Ltd. Employment Agreement" is the true and accurate translation of a relevant part of the Employment Agreement between Chengdu Huawei Technologies Co., Ltd. and employee Xiaoyong Tang.

\_\_\_\_\_  
Dated this    S e p , 22, 2022

Signature of Translator

Hong Xiang

协议编号：0441002120200001

委托技术开发框架协议

甲方：华为技术有限公司

乙方：成都华为技术有限公司

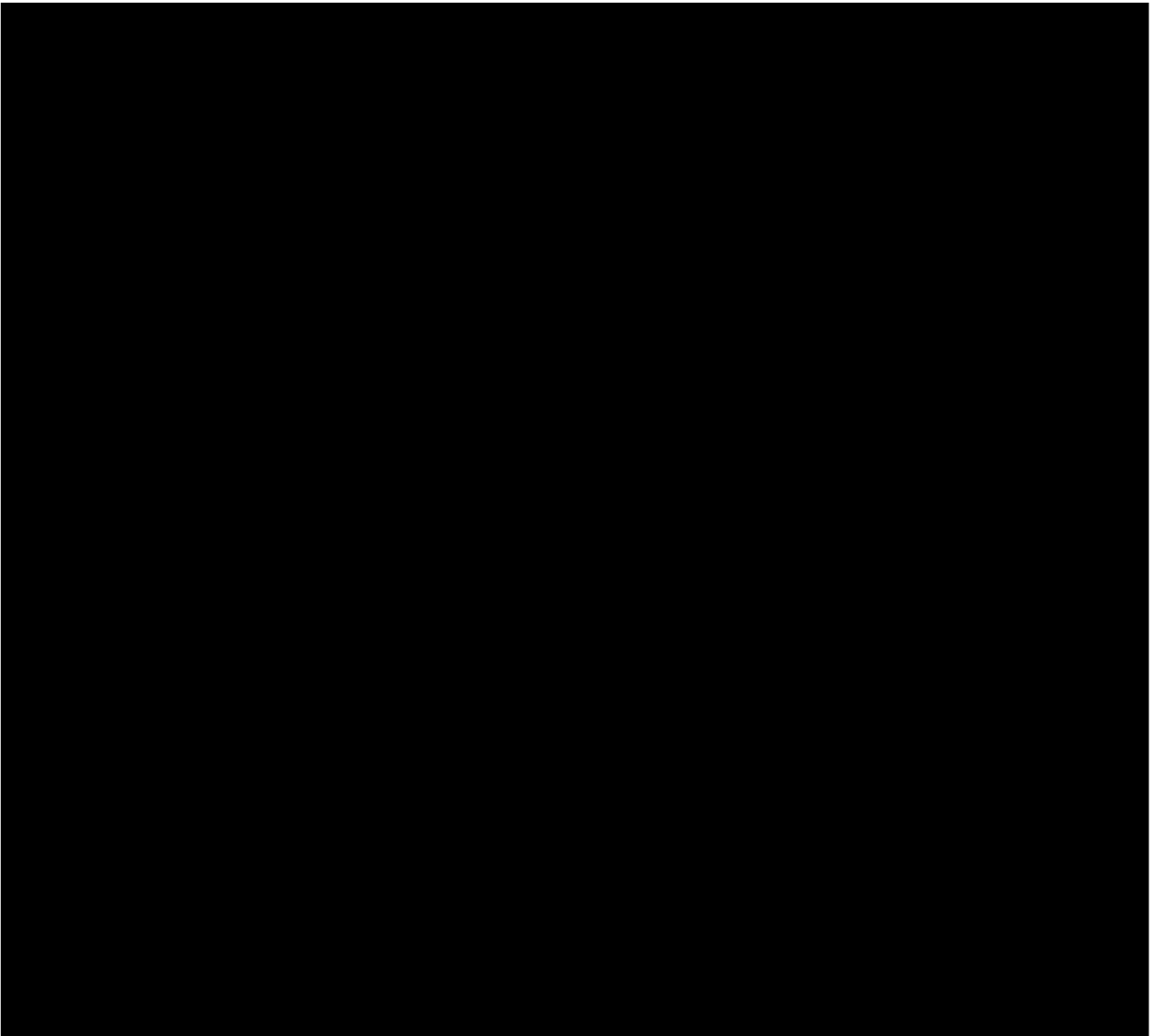
本协议由以下双方签署：


华为技术有限公司（“甲方”），一家根据中国法律在深圳市龙岗区坂田华为总部办公楼注册成立的企业；和

成都华为技术有限公司（“乙方”），一家根据中国法律在成都高新西区西源大道 1899 号注册成立的企业。

（以上甲方、乙方独称为“一方”，合称为“双方”）。

根据《中华人民共和国民法典》及其他有关法律法规，甲乙双方在平等自愿的基础上，经充分友好协商，甲方将委托乙方进行相关领域的研究开发工作（“协议工作”）事宜，现双方达成如下协议（“本协议”）。



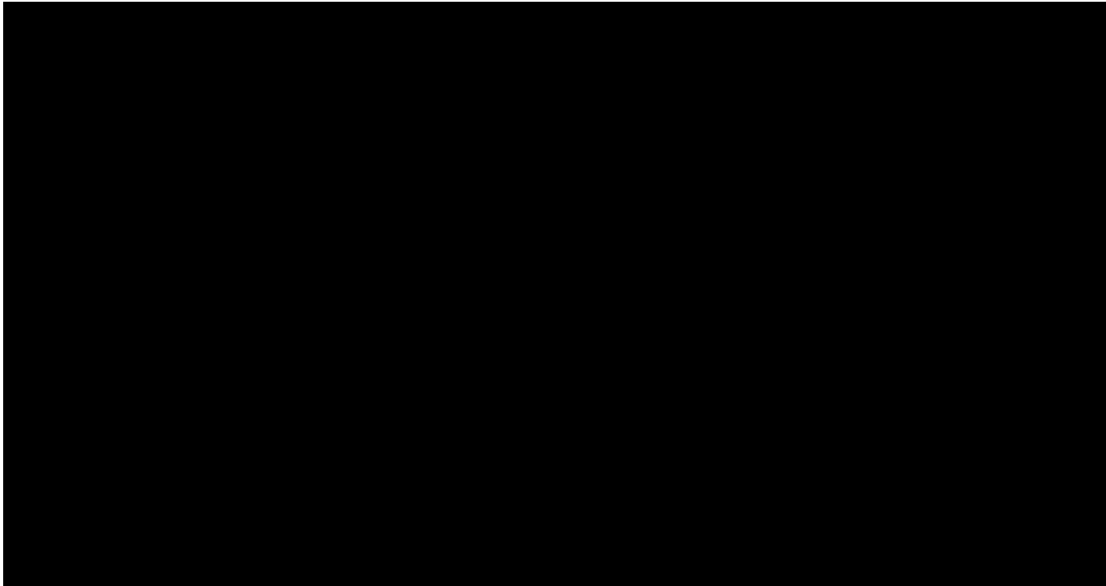


## 8. 知识产权归属

8.1 本协议下协议工作中产生的全部开发成果及其知识产权，包括但不限于申请专利的权利、专利申请权、专利权、版权、商业秘密，均归甲方所有。

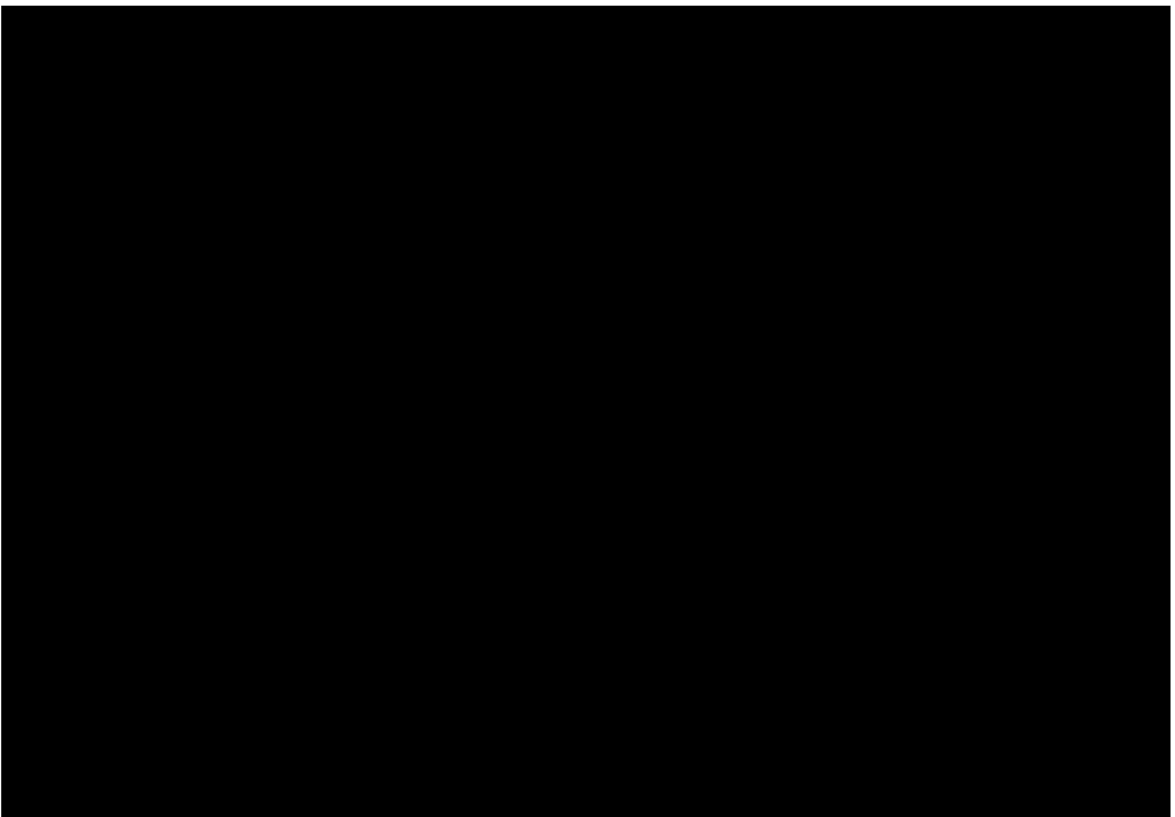
8.2 若乙方以任何形式对开发成果或其任何部分进行使用、修改和二次开发，或以任何形式向任何第三方披露开发成果或其它任何部分，需事先与甲方协商并经甲方同意。

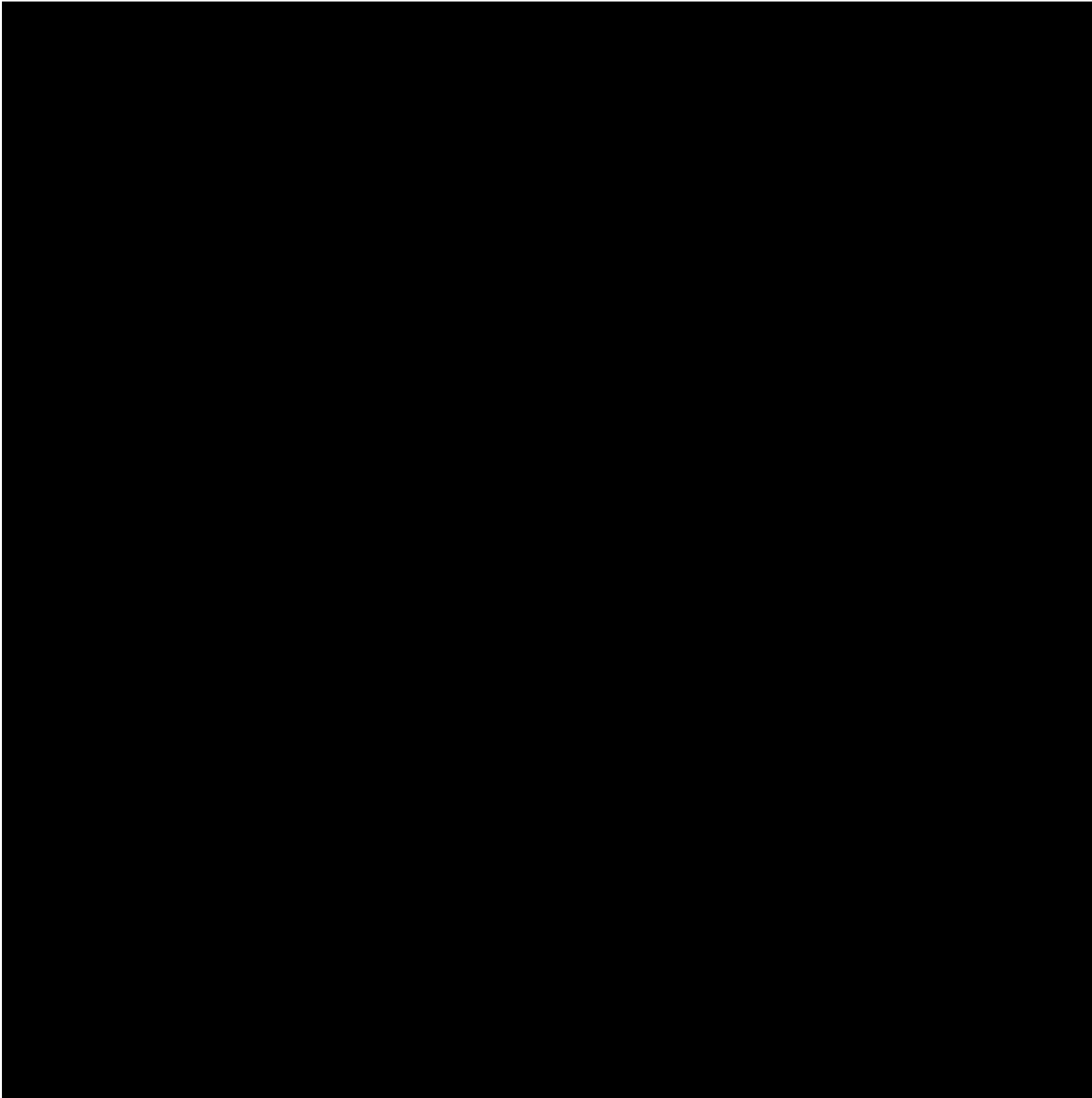




#### 11. 知识产权侵权

若任何第三方主张本协议下协议工作中产生的开发成果侵犯其知识产权，乙方应当负责处理前述第三方的权利主张，承担由此招致的全部费用，包括但不限于律师费和侵权赔偿，并保证甲方不会因此而遭受任何损失。





14.11 本协议自双方加盖公章后生效，本协议一式四份，双方各执两份，均具有同等法律效力。

甲方：华为技术有限公司



乙方：成都华为技术有限公司





# commissioned technology development agreement

Consigner (Party A): Huawei Technologies Co., Ltd.

Consignee (Party B): ChengDu Huawei Technologies Co., Ltd.

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This Agreement is signed by the following parties:

Huawei Technologies Co., Ltd. ("Party A") is an enterprise incorporated in accordance with the laws of China in the Huawei Administration Building, Bantian, Longgang District, Shenzhen, 518129, Guangdong, P.R. China. And ChengDu Huawei Technologies Co., Ltd. ("Party B") is an enterprise incorporated under Chinese laws at NO. 1899 Xiyuan Avenue, West High-tech District, Chengdu, Sichuan, P.R. China.

(Aforesaid Party A and Party B are referred to as the "Party" and collectively referred to as the "Party".)

In accordance with the Contract Law of the People's Republic of China and other relevant laws and regulations, Party A and Party B will entrust Party B to carry out research and development ("agreement work") in the relevant field on the basis of equality and voluntariness, and after full friendly negotiation, the Parties hereby agree as follows ("agreement").

#### 8. Ownership of intellectual property rights

8.1 All development achievements and intellectual property rights arising from the work under this Agreement, including but not limited to the right to apply for patents, the right to apply for patents, the right to apply for patents, the right to apply for patents, the right to apply for patents, the copyright, and the trade secrets, shall be owned by Party A.

8.2 Party B shall not use, modify, or perform secondary development on the development achievements or any part thereof in any form, nor shall Party B disclose the development achievements or any part thereof to any third party in any form, including but not limited to applying for patents by itself or authorizing others to apply for patents.

#### 11. Intellectual Property Infringement

If any third party claims that the development achievements arising from the work under this Agreement infringe upon its intellectual property rights, Party B shall be responsible for handling the claims of the third party, bear all expenses incurred therefrom, including but not limited to lawyers' fees and infringement compensation,

and guarantee that Party A will not suffer any loss.

Party A: Huawei Technologies Co., Ltd.

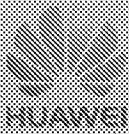
Party B: ChengDu Huawei Technologies Co., Ltd.

14.11 本协议自双方加盖公章  
有同等法律效力。

甲方：华为技术有限公司

乙方：成都华为技术有限公司





# 成都华为技术有限公司员工聘用协议书

ChengDu Huawei Technologies Co., Ltd.

## Employment Agreement

聘用方(甲方)Company: 成都华为技术有限公司

ChengDu Huawei Technologies Co., Ltd.

住所 Location: 四川省成都市高新西区西源大道1899号

No. 1899, Sichuan Province Chengdu hi tech area of Xi Yuan Road

法定代表人 Legal Representative: 李杰/LI Jie

受聘方(乙方) Employee: 唐小勇

工号 Employee ID: 194335 国籍 Nationality: 中国

护照号码 Passport Number/身份证号码 Citizen Identification:

[REDACTED]

户口所在地 Registered Permanent Residence(For Chinese):

成都市高新区

通信住址 Address for correspondence:

成都市 [REDACTED]

PATENT

REEL: 061229 FRAME: 0902



## 10 知识产权 Intellectual Property Rights

### 10.1 服务成果

#### Service Achievements

10.1.1 双方确认，乙方在甲方工作期间（包括离职之日起一年内），由于履行本人职务或甲方安排的本人职务之外的工作任务，或者主要利用甲方的物质条件和业务信息等，自行或与他人共同构思、开发、创造或研制出的发明创造、实用新型、外观设计、技术诀窍、产品、计算机软件、半导体芯片、作品或其他形式的智力成果，其中所包含的或与之有关的全部知识产权权利或其他财产权利（以下统称“知识产权”）均归甲方所有。

Both Company and the Employee agree that Company owns all the intellectual property rights and/or other property rights (hereinafter referred to as intellectual property rights) included in or related to the inventions, practical innovations, appearance designs, technical know-hows, products, computer software, semiconductor chips, works, and/or intellectual achievements in any other form that are solely or jointly made, researched, developed, or created by the Employee in performing the Employee's duties or fulfilling other tasks appointed by Company, or using physical conditions and business information of Company, during the employment period (including within one year after the Employee leaves the employment).

10.1.2 乙方同意以所有适当的方式通过适当的途径（包括但不限于申请专利、注册商标、登记软件等，相关费用由甲方承担）协助甲方或甲方指定的第三方，为甲方取得上述知识产权在任一国家、地区或全球范围内的各项权利。前述适当的方式包括但不限于：向甲方披露全部相关信息和数据，签署相关申请书、技术说明书以及甲方认为在申请取得该等权利或向甲方（或其继承人、受让人和指定者）转让知识产权的专属权利、权属和利益时所必需的文书。乙方同意，乙方签署任何该等文书或文件的义务、或促使该等文书或文件被签署的义务，在其与甲方的劳动关系终止之后仍应继续存在。

The Employee agrees to assist Company or a third Company appointed by Company to acquire the rights pertaining to the aforesaid intellectual property rights in any country or region or the whole world for Company in all proper ways through proper channels (including but not limited to patent application, trademark registration and software registration; the related expenses shall be undertaken by Company). The foregoing proper ways include but are not limited to disclosure of all related information and data to Company and signing related applications, technical descriptions, and other writings and documents deemed necessary by Company in applying for these rights or transferring the exclusive rights, ownership and benefits of the intellectual property rights to Company (or Company's successor, assignee or appointed entity). The Employee agrees that the Employee's obligation to sign these writings and documents or assist in getting these writings and

documents signed be valid after the termination of the employment.

10.1.3 甲方有权使用、转让或授权他人使用上述知识产权而无须获得乙方的同意。

Company has the right to use, transfer, or authorize a third party to use the foregoing intellectual property rights without requesting the permission of the Employee.

10.1.4 上述知识产权的署名权（依法律规定而应由甲方署名的除外），由作为发明人、制作者或设计人的乙方享有，并且乙方有权按甲方有关规定获得相应的物质奖励和精神鼓励。

The Employee, as the inventor, producer, or designer, owns the right of authorship of the foregoing intellectual property rights (except in cases in which Company owns the right of authorship by law) and the Employee shall be entitled to physical and spiritual rewards according to related regulations of Company.

10.1.5 若乙方作为发明人或设计人的职务发明创造经甲方申请并被授予专利权的，双方理解并同意甲方应当根据甲方当时正在生效的内部相关规章制度规定的奖励支付方式和数额向乙方支付相应奖金。

If the Employee's service invention-creation invented or designed by the Employee is granted a patent right after Company's filing in Company's own name, both Parties understand and agree that Company shall award the Employee a money prize according to the payment method and amount stipulated in the Company's then-current effective internal related rules and regulations.

10.1.6 若甲方因实施前述发明创造专利权并获得了利润，或甲方许可其他第三方实施前述专利权并收取使用费的，或甲方转让前述专利权并获得经济利益的，双方理解并同意甲方应当根据甲方当时正在生效的内部相关规章制度规定的报酬支付方式和数额向乙方支付相应报酬。

If Company exploits the foresaid patent for invention-creation to make a profit, or Company grants the license to the third party to exploit the foresaid patent to receive the royalty fees, or Company transfer or assign the foresaid patent to the third party to make profits, both Parties understand and agree that Company shall pay the Employee remunerations according to the payment method and amount stipulated in the Company's then-current effective internal related rules and regulations.

10.1.7 甲乙双方同意，甲方向乙方支付的薪酬待遇中，已考虑了因乙方职务发明创造被授予专利权及甲方实施、许可或转让前述专利权在所有适用法及本协议下乙方应当获得的全部奖励、报酬及其他利益。

Both Parties agree that, Company has taken all the reward, remunerations and other interests which the Employee deserves in all applicable jurisdictions and under this Agreement into consideration in the salary and benefits paid to the Employee under this Agreement due to: i) the Employee's service invention-creation which has been granted a patent right; or ii) Company's exploitation, granting the license or transfer/assignment to the third party of the foresaid patent.

10.1.8 甲乙双方同意，若前述专利权被无效，或甲方合理的认为前述专利权存在被无效的可能，甲方有权不发放或酌情减少前述奖励和/或报酬。

Both Parties agree that, if the foresaid patent is invalid or unenforceable or Company has reasonable doubt that the foresaid patent has the possibility to be invalid or unenforceable, Company has the right to withdraw or decrease the foresaid money prize and/or remunerations herein.





签 字 页

Signatures

本协议一式两份，其中一份本人已收到并保存。

This Agreement shall be in duplicate, one of which has been received and held by myself.

本协议为甲方、乙方双方真实意思表示，在此签字确认。

This Agreement describes true intentions of both Parties and the Parties hereto execute the Agreement.

甲方：成都华为技术有限公司

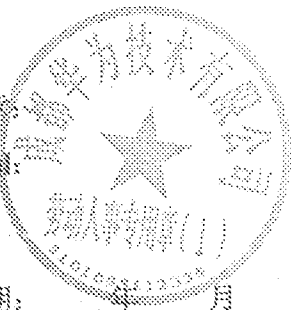
乙方：受聘方

Company: ChengDu Huawei Technologies  
Co., Ltd.

Employee:

公章:

Seal:



日期: \_\_\_\_\_ 年 \_\_\_\_\_ 月 \_\_\_\_\_ 日

Date: \_\_\_\_\_ (MM DD, YYYY)

签字:

Signature:

日期: 2015 年 8 月 13 日

Date: \_\_\_\_\_ (MM DD, YYYY)

PATENT

REEL: 061229 FRAME: 0905

## ASSIGNMENT

WHEREAS, WE,

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

Xiaoyong Tang  
Huawei Administration Building  
Bantian, Longgang District  
Shenzhen, 518129, Guangdong  
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Xiaona Wang  
Huawei Administration Building  
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P.R.CHINA; and

Xi Zhang  
Kanata-Suite 400, 303 Terry Fox  
Drive, Ottawa 231  
Canada.;

have invented and own a certain invention entitled:

## BEAM TRAINING METHOD, APPARATUS, AND SYSTEM

for which invention we have executed an application (provisional or non-provisional) for a U.S. patent, which was filed on 2020-11-11, under U.S. Application No. 17095017 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 perfect the Assignee's enjoyment of this assignment, and render all necessary assistance in

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

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 \_\_\_\_\_

\_\_\_\_\_  
Peng Guan

Date \_\_\_\_\_

\_\_\_\_\_  
Xiaoyong Tang

Date Dec 11, 2020

Xiaona Wang  
Xiaona Wang

Date \_\_\_\_\_

\_\_\_\_\_  
Xi Zhang

## ASSIGNMENT

WHEREAS, WE,

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

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

Xi Zhang  
Kanata-Suite 400, 303 Terry Fox  
Drive, Ottawa 231  
Canada;

have invented and own a certain invention entitled:

## BEAM TRAINING METHOD, APPARATUS, AND SYSTEM

for which invention we have executed an application (provisional or non-provisional) for a U.S. patent, which was filed on 2020-11-11, under U.S. Application No. 17095017 and

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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 perfect the Assignee's enjoyment of this assignment, and render all necessary assistance in

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

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 \_\_\_\_\_  
Peng Guan

Date \_\_\_\_\_  
Xiaoyong Tang

Date \_\_\_\_\_  
Xisong Wang

Date Dec 10, 2020  
Xi Zhang *Xi Zhang*