

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT6866707

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
SUNGWOO PARK	08/14/2021
WOOSEOK NAM	06/18/2021
TAO LUO	06/05/2021
JUNYI LI	06/06/2021
JUAN MONTOJO	06/01/2021
JING SUN	06/04/2021
XIAOXIA ZHANG	06/09/2021
JOHN EDWARD SMEE	06/30/2021
PETER GAAL	06/02/2021
TAESANG YOO	06/03/2021
SIMONE MERLIN	06/23/2021

RECEIVING PARTY DATA

Name:	QUALCOMM INCORPORATED
Street Address:	5775 MOREHOUSE DRIVE
City:	SAN DIEGO
State/Country:	CALIFORNIA
Postal Code:	92121-1714

PROPERTY NUMBERS Total: 2

Property Type	Number
Application Number:	17335761
Application Number:	63035091

CORRESPONDENCE DATA**Fax Number:**

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.

Email: lbreeden@wavsip.com**Correspondent Name:** WEAVER AUSTIN VILLENEUVE & SAMPSON LLP**Address Line 1:** P.O. BOX 70250**Address Line 4:** OAKLAND, CALIFORNIA 94612-0250

ATTORNEY DOCKET NUMBER:	QLCMP083US/205300
NAME OF SUBMITTER:	LELIA BREEDEN
SIGNATURE:	/Lelia Breeden/
DATE SIGNED:	08/16/2021

Total Attachments: 55

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ASSIGNMENT

WHEREAS, WE,

1. **Sungwoo PARK**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
2. **Wooseok NAM**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
3. **Tao LUO**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
4. **Junyi LI**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
5. **Juan MONTOJO**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
6. **Jing SUN**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
7. **Xiaoxia ZHANG**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
8. **John Edward SMEE**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
9. **Peter GAAL**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
10. **Taesang YOO**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
11. **Simone MERLIN**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,

have conceived of one or more processes, methods, machines, articles of manufacture, designs, compositions of matter, inventions, discoveries or new or useful improvements relating to **SYSTEMS AND METHODS FOR BI-STATIC RADIO-BASED OBJECT LOCATION DETECTION** (collectively the “**INVENTIONS**”) for which WE have executed and/or may execute one or more patent applications therefor; and

WHEREAS, **QUALCOMM Incorporated** (hereinafter “**ASSIGNEE**”), a Delaware corporation, having a place of business at **5775 Morehouse Drive, San Diego, California 92121-**

1714, U.S.A., desires to acquire or otherwise obtain the entire right, title, and interest in and to said INVENTIONS, including all inventions related thereto or thereof, all patent applications therefor, and all patents that have granted or may be granted hereafter thereon, including but not limited to those identified below.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, WE do hereby acknowledge that WE have sold, assigned, conveyed, and transferred, and by these presents do hereby sell, assign, convey, and transfer, unto ASSIGNEE, its successors, its legal representatives, and its assigns, the entire right, title, and interest throughout the world in and to said INVENTIONS, including all patent applications therefor that may have been filed or may be filed hereafter for said INVENTIONS in the United States, including but not limited to U.S. Application No(s). 17/335,761 filed June 1, 2021, **Qualcomm Reference Number 205300**, and all provisional applications relating thereto, together with U.S. Provisional Application No(s). 63/035,091, filed June 5, 2020, **Qualcomm Reference Number 205300P1**, (and do hereby authorize ASSIGNEE and its representative to hereafter add herein such application number(s) and/or filing date(s) when known), and all divisional applications, renewal applications, continuation applications, continuation-in-part applications, and design applications thereof, and all issued patents of the United States which may have granted or may be granted hereafter thereon and all reissues, renewals, reexaminations, and extensions to any of the foregoing and all patents issuing thereon in the United States;

AND WE further do acknowledge and agree that WE have sold, assigned, conveyed, and transferred, and by these presents do hereby sell, assign, convey, and transfer, unto ASSIGNEE, its successors, its legal representatives, and its assigns, all rights of priority under International Conventions, Treaties, or Agreements, and the entire right, title, and interest throughout the world in said INVENTIONS, including all inventions related thereto or thereof, and all patent applications therefor that may have been filed or may be filed hereafter for said INVENTIONS in any foreign country, countries, or treaty/union organizations, and all divisional applications, renewal applications, continuation applications, continuation-in-part applications, patent of addition applications, confirmation applications, validation applications, utility model applications, and design applications thereof, and all issued patents which may have granted or may be granted hereafter for said INVENTIONS in any country or countries foreign to the United States, and all reissues, renewals, reexaminations, and extensions thereof;


AND WE DO HEREBY authorize and request the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications or registrations, to issue all patents for said INVENTIONS to said ASSIGNEE, its successors, its legal representatives and its assigns, in accordance with the terms of this instrument;

AND WE DO HEREBY sell, assign, transfer, and convey to said ASSIGNEE, its successors, its legal representatives, and its assigns all claims for damages and all remedies arising out of or relating to any violation(s) of any of the rights assigned hereby that have or may have accrued prior to the date of assignment to said ASSIGNEE, or may accrue hereafter, including, but not limited to the right to sue for, seek, obtain, collect, recover, and retain damages and any

ongoing or prospective royalties to which WE may be entitled, or that WE may collect for any infringement or from any settlement or agreement related to any of said patents before or after issuance;

AND WE HEREBY covenant and agree that WE will communicate promptly to said ASSIGNEE, its successors, its legal representatives, and its assigns, any facts known to us respecting said INVENTIONS, and will testify in any legal proceeding, sign all lawful papers, execute all applications and certificates, make all rightful declarations and/or oaths, and provide all lawful assistance to said ASSIGNEE, its successors, its legal representatives and its assigns, to obtain and enforce patent protection for said INVENTIONS in all countries;

AND WE HEREBY covenant that WE will not execute any writing or do any act whatsoever conflicting with these presents.

Done at San Jose, on 8/14/2001 
City, State, Country Date Sungwoon PARK

Done at _____, on _____
City, State, Country Date Woosenk NAM

Done at _____, on _____
City, State, Country Date Tao LUO

Done at _____, on _____
City, State, Country Date Junyi LI

Done at _____, on _____
City, State, Country Date Juan MONTOJO

Done at _____, on _____
City, State, Country Date Jing SUN

Done at _____, on _____
City, State, Country Date Xiaoxia ZHANG

Done at _____, on _____
City, State, Country Date John Edward SMEE

Done at _____, on _____
City, State, Country Date Peter GAAL

Done at _____, on _____
City, State, Country Date Taesang YOO

Done at _____, on _____
City, State, Country Date Simone MERLIN

ASSIGNMENT

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11. **Simone MERLIN**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,

have conceived of one or more processes, methods, machines, articles of manufacture, designs, compositions of matter, inventions, discoveries or new or useful improvements relating to **SYSTEMS AND METHODS FOR BI-STATIC RADIO-BASED OBJECT LOCATION DETECTION** (collectively the “**INVENTIONS**”) for which WE have executed and/or may execute one or more patent applications therefor; and

WHEREAS, **QUALCOMM Incorporated** (hereinafter “**ASSIGNEE**”), a Delaware corporation, having a place of business at **5775 Morehouse Drive, San Diego, California 92121-**

1714, U.S.A., desires to acquire or otherwise obtain the entire right, title, and interest in and to said INVENTIONS, including all inventions related thereto or thereof, all patent applications therefor, and all patents that have granted or may be granted hereafter thereon, including but not limited to those identified below.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, WE do hereby acknowledge that WE have sold, assigned, conveyed, and transferred, and by these presents do hereby sell, assign, convey, and transfer, unto ASSIGNEE, its successors, its legal representatives, and its assigns, the entire right, title, and interest throughout the world in and to said INVENTIONS, including all patent applications therefor that may have been filed or may be filed hereafter for said INVENTIONS in the United States, including but not limited to U.S. Application No(s). 17/335,761 filed June 1, 2021, **Qualcomm Reference Number 205300**, and all provisional applications relating thereto, together with U.S Provisional Application No(s). 63/035,091, filed June 5, 2020, **Qualcomm Reference Number 205300P1**, (and do hereby authorize ASSIGNEE and its representative to hereafter add herein such application number(s) and/or filing date(s) when known), and all divisional applications, renewal applications, continuation applications, continuation-in-part applications, and design applications thereof, and all issued patents of the United States which may have granted or may be granted hereafter thereon and all reissues, renewals, reexaminations, and extensions to any of the foregoing and all patents issuing thereon in the United States;

AND WE further do acknowledge and agree that WE have sold, assigned, conveyed, and transferred, and by these presents do hereby sell, assign, convey, and transfer, unto ASSIGNEE, its successors, its legal representatives, and its assigns, all rights of priority under International Conventions, Treaties, or Agreements, and the entire right, title, and interest throughout the world in said INVENTIONS, including all inventions related thereto or thereof, and all patent applications therefor that may have been filed or may be filed hereafter for said INVENTIONS in any foreign country, countries, or treaty/union organizations, and all divisional applications, renewal applications, continuation applications, continuation-in-part applications, patent of addition applications, confirmation applications, validation applications, utility model applications, and design applications thereof, and all issued patents which may have granted or may be granted hereafter for said INVENTIONS in any country or countries foreign to the United States, and all reissues, renewals, reexaminations, and extensions thereof;

AND WE DO HEREBY authorize and request the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications or registrations, to issue all patents for said INVENTIONS to said ASSIGNEE, its successors, its legal representatives and its assigns, in accordance with the terms of this instrument;

AND WE DO HEREBY sell, assign, transfer, and convey to said ASSIGNEE, its successors, its legal representatives, and its assigns all claims for damages and all remedies arising out of or relating to any violation(s) of any of the rights assigned hereby that have or may have accrued prior to the date of assignment to said ASSIGNEE, or may accrue hereafter, including, but not limited to the right to sue for, seek, obtain, collect, recover, and retain damages and any

ongoing or prospective royalties to which WE may be entitled, or that WE may collect for any infringement or from any settlement or agreement related to any of said patents before or after issuance;

AND WE HEREBY covenant and agree that WE will communicate promptly to said ASSIGNEE, its successors, its legal representatives, and its assigns, any facts known to us respecting said INVENTIONS, and will testify in any legal proceeding, sign all lawful papers, execute all applications and certificates, make all rightful declarations and/or oaths, and provide all lawful assistance to said ASSIGNEE, its successors, its legal representatives and its assigns, to obtain and enforce patent protection for said INVENTIONS in all countries;

AND WE HEREBY covenant that WE will not execute any writing or do any act whatsoever conflicting with these presents.

Done at _____, on _____
City, State, Country Date Sungwoo PARK

Done at San Diego, CA, USA, on 6/18/2021
City, State, Country Date 
Wooseok NAM

Done at _____, on _____
City, State, Country Date Tao LUO

Done at _____, on _____
City, State, Country Date Junyi LI

Done at _____, on _____
City, State, Country Date Juan MONTOJO

Done at _____, on _____
City, State, Country Date Jing SUN

Done at _____, on _____
City, State, Country Date Xiaoxia ZHANG

Done at _____, on _____
City, State, Country Date John Edward SMEE

Done at _____, on _____
City, State, Country Date Peter GAAL

Done at _____, on _____
City, State, Country Date Taesang YOO

Done at _____, on _____
City, State, Country Date Simone MERLIN

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have conceived of one or more processes, methods, machines, articles of manufacture, designs, compositions of matter, inventions, discoveries or new or useful improvements relating to **SYSTEMS AND METHODS FOR BI-STATIC RADIO-BASED OBJECT LOCATION DETECTION** (collectively the “**INVENTIONS**”) for which WE have executed and/or may execute one or more patent applications therefor; and

WHEREAS, **QUALCOMM Incorporated** (hereinafter “**ASSIGNEE**”), a Delaware corporation, having a place of business at **5775 Morehouse Drive, San Diego, California 92121-**

1714, U.S.A., desires to acquire or otherwise obtain the entire right, title, and interest in and to said INVENTIONS, including all inventions related thereto or thereof, all patent applications therefor, and all patents that have granted or may be granted hereafter thereon, including but not limited to those identified below.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, WE do hereby acknowledge that WE have sold, assigned, conveyed, and transferred, and by these presents do hereby sell, assign, convey, and transfer, unto ASSIGNEE, its successors, its legal representatives, and its assigns, the entire right, title, and interest throughout the world in and to said INVENTIONS, including all patent applications therefor that may have been filed or may be filed hereafter for said INVENTIONS in the United States, including but not limited to U.S. Application No(s). 17/335,761 filed June 1, 2021, **Qualcomm Reference Number 205300**, and all provisional applications relating thereto, together with U.S. Provisional Application No(s). 63/035,091, filed June 5, 2020, **Qualcomm Reference Number 205300P1**, (and do hereby authorize ASSIGNEE and its representative to hereafter add herein such application number(s) and/or filing date(s) when known), and all divisional applications, renewal applications, continuation applications, continuation-in-part applications, and design applications thereof, and all issued patents of the United States which may have granted or may be granted hereafter thereon and all reissues, renewals, reexaminations, and extensions to any of the foregoing and all patents issuing thereon in the United States;

AND WE further do acknowledge and agree that WE have sold, assigned, conveyed, and transferred, and by these presents do hereby sell, assign, convey, and transfer, unto ASSIGNEE, its successors, its legal representatives, and its assigns, all rights of priority under International Conventions, Treaties, or Agreements, and the entire right, title, and interest throughout the world in said INVENTIONS, including all inventions related thereto or thereof, and all patent applications therefor that may have been filed or may be filed hereafter for said INVENTIONS in any foreign country, countries, or treaty/union organizations, and all divisional applications, renewal applications, continuation applications, continuation-in-part applications, patent of addition applications, confirmation applications, validation applications, utility model applications, and design applications thereof, and all issued patents which may have granted or may be granted hereafter for said INVENTIONS in any country or countries foreign to the United States, and all reissues, renewals, reexaminations, and extensions thereof;

AND WE DO HEREBY authorize and request the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications or registrations, to issue all patents for said INVENTIONS to said ASSIGNEE, its successors, its legal representatives and its assigns, in accordance with the terms of this instrument;

AND WE DO HEREBY sell, assign, transfer, and convey to said ASSIGNEE, its successors, its legal representatives, and its assigns all claims for damages and all remedies arising out of or relating to any violation(s) of any of the rights assigned hereby that have or may have accrued prior to the date of assignment to said ASSIGNEE, or may accrue hereafter, including, but not limited to the right to sue for, seek, obtain, collect, recover, and retain damages and any

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Done at _____, on _____
City, State, Country Date Sungwoo PARK

Done at _____, on _____
City, State, Country Date Wooseok NAM

Done at San Diego, CA, on 06/25/2021
City, State, Country Date Tao LUO

Done at _____, on _____
City, State, Country Date Junyi LI

Done at _____, on _____
City, State, Country Date Juan MONTOJO

Done at _____, on _____
City, State, Country Date Jing SUN

Done at _____, on _____
City, State, Country Date Xiaoxia ZHANG

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11. Simone MERLIN, having a mailing address located at 5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.,

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1714, U.S.A., desires to acquire or otherwise obtain the entire right, title, and interest in and to said INVENTIONS, including all inventions related thereto or thereof, all patent applications therefor, and all patents that have granted or may be granted hereafter thereon, including but not limited to those identified below.

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AND WE further do acknowledge and agree that WE have sold, assigned, conveyed, and transferred, and by these presents do hereby sell, assign, convey, and transfer, unto ASSIGNEE, its successors, its legal representatives, and its assigns, all rights of priority under International Conventions, Treaties, or Agreements, and the entire right, title, and interest throughout the world in said INVENTIONS, including all inventions related thereto or thereof, and all patent applications therefor that may have been filed or may be filed hereafter for said INVENTIONS in any foreign country, countries, or treaty/union organizations, and all divisional applications, renewal applications, continuation applications, continuation-in-part applications, patent of addition applications, confirmation applications, validation applications, utility model applications, and design applications thereof, and all issued patents which may have granted or may be granted hereafter for said INVENTIONS in any country or countries foreign to the United States, and all reissues, renewals, reexaminations, and extensions thereof;

AND WE DO HEREBY authorize and request the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications or registrations, to issue all patents for said INVENTIONS to said ASSIGNEE, its successors, its legal representatives and its assigns, in accordance with the terms of this instrument;

AND WE DO HEREBY sell, assign, transfer, and convey to said ASSIGNEE, its successors, its legal representatives, and its assigns all claims for damages and all remedies arising out of or relating to any violation(s) of any of the rights assigned hereby that have or may have accrued prior to the date of assignment to said ASSIGNEE, or may accrue hereafter, including, but not limited to the right to sue for, seek, obtain, collect, recover, and retain damages and any

ongoing or prospective royalties to which WE may be entitled, or that WE may collect for any infringement or from any settlement or agreement related to any of said patents before or after issuance;


AND WE HEREBY covenant and agree that WE will communicate promptly to said ASSIGNEE, its successors, its legal representatives, and its assigns, any facts known to us respecting said INVENTIONS, and will testify in any legal proceeding, sign all lawful papers, execute all applications and certificates, make all rightful declarations and/or oaths, and provide all lawful assistance to said ASSIGNEE, its successors, its legal representatives and its assigns, to obtain and enforce patent protection for said INVENTIONS in all countries;

AND WE HEREBY covenant that WE will not execute any writing or do any act whatsoever conflicting with these presents.

Done at _____, on _____
City, State, Country Date Sungwoo PARK

Done at _____, on _____
City, State, Country Date Woosook NAM

Done at _____, on _____
City, State, Country Date Tao LIU

Done at Bridgewater, NJ, on 6/6/2011
City, State, Country Date Junyi Li 

Done at _____, on _____
City, State, Country Date Juan MONTANO

Done at _____, on _____
City, State, Country Date Jing SUN

PATENT

Qualcomm Reference Number: 203300

Page 5 of 5

Done at _____, on _____
City, State, Country Date Xiaoxia ZHANG

Done at _____, on _____
City, State, Country Date John Edward SMEE

Done at _____, on _____
City, State, Country Date Peter GAAL

Done at _____, on _____
City, State, Country Date Taesang YOO

Done at _____, on _____
City, State, Country Date Simone MERLIN

PATENT

REEL: 057193 FRAME: 0674

ASSIGNMENT

WHEREAS, WE,

1. **Sungwoo PARK**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
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6. **Jing SUN**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
7. **Xiaoxia ZHANG**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
8. **John Edward SMEE**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
9. **Peter GAAL**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
10. **Taesang YOO**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
11. **Simone MERLIN**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,

have conceived of one or more processes, methods, machines, articles of manufacture, designs, compositions of matter, inventions, discoveries or new or useful improvements relating to **SYSTEMS AND METHODS FOR BI-STATIC RADIO-BASED OBJECT LOCATION DETECTION** (collectively the “**INVENTIONS**”) for which WE have executed and/or may execute one or more patent applications therefor; and

WHEREAS, **QUALCOMM Incorporated** (hereinafter “**ASSIGNEE**”), a Delaware corporation, having a place of business at **5775 Morehouse Drive, San Diego, California 92121-**

1714, U.S.A., desires to acquire or otherwise obtain the entire right, title, and interest in and to said INVENTIONS, including all inventions related thereto or thereof, all patent applications therefor, and all patents that have granted or may be granted hereafter thereon, including but not limited to those identified below.

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AND WE further do acknowledge and agree that WE have sold, assigned, conveyed, and transferred, and by these presents do hereby sell, assign, convey, and transfer, unto ASSIGNEE, its successors, its legal representatives, and its assigns, all rights of priority under International Conventions, Treaties, or Agreements, and the entire right, title, and interest throughout the world in said INVENTIONS, including all inventions related thereto or thereof, and all patent applications therefor that may have been filed or may be filed hereafter for said INVENTIONS in any foreign country, countries, or treaty/union organizations, and all divisional applications, renewal applications, continuation applications, continuation-in-part applications, patent of addition applications, confirmation applications, validation applications, utility model applications, and design applications thereof, and all issued patents which may have granted or may be granted hereafter for said INVENTIONS in any country or countries foreign to the United States, and all reissues, renewals, reexaminations, and extensions thereof;

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ongoing or prospective royalties to which WE may be entitled, or that WE may collect for any infringement or from any settlement or agreement related to any of said patents before or after issuance;

AND WE HEREBY covenant and agree that WE will communicate promptly to said ASSIGNEE, its successors, its legal representatives, and its assigns, any facts known to us respecting said INVENTIONS, and will testify in any legal proceeding, sign all lawful papers, execute all applications and certificates, make all rightful declarations and/or oaths, and provide all lawful assistance to said ASSIGNEE, its successors, its legal representatives and its assigns, to obtain and enforce patent protection for said INVENTIONS in all countries;

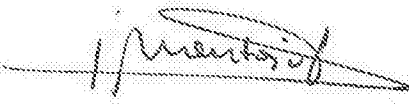
AND WE HEREBY covenant that WE will not execute any writing or do any act whatsoever conflicting with these presents.

Done at _____, on _____
City, State, Country Date Sungwoo PARK

Done at _____, on _____
City, State, Country Date Wooseok NAM

Done at _____, on _____
City, State, Country Date Tao LUO

Done at _____, on _____
City, State, Country Date Junyi LI

Done at San Diego, CA, USA, on 6/1/21
City, State, Country Date  Juan MONTOJO

Done at _____, on _____
City, State, Country Date Jing SUN

Done at _____, on _____
City, State, Country Date Xiaoxia ZHANG

Done at _____, on _____
City, State, Country Date John Edward SMEE

Done at _____, on _____
City, State, Country Date Peter GAAL

Done at _____, on _____
City, State, Country Date Taesang YOO

Done at _____, on _____
City, State, Country Date Simone MERLIN

ASSIGNMENT

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11. **Simone MERLIN**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,

have conceived of one or more processes, methods, machines, articles of manufacture, designs, compositions of matter, inventions, discoveries or new or useful improvements relating to **SYSTEMS AND METHODS FOR BI-STATIC RADIO-BASED OBJECT LOCATION DETECTION** (collectively the “**INVENTIONS**”) for which WE have executed and/or may execute one or more patent applications therefor; and

WHEREAS, **QUALCOMM Incorporated** (hereinafter “**ASSIGNEE**”), a Delaware corporation, having a place of business at **5775 Morehouse Drive, San Diego, California 92121-**

1714, U.S.A., desires to acquire or otherwise obtain the entire right, title, and interest in and to said INVENTIONS, including all inventions related thereto or thereof, all patent applications therefor, and all patents that have granted or may be granted hereafter thereon, including but not limited to those identified below.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, WE do hereby acknowledge that WE have sold, assigned, conveyed, and transferred, and by these presents do hereby sell, assign, convey, and transfer, unto ASSIGNEE, its successors, its legal representatives, and its assigns, the entire right, title, and interest throughout the world in and to said INVENTIONS, including all patent applications therefor that may have been filed or may be filed hereafter for said INVENTIONS in the United States, including but not limited to U.S. Application No(s). 17/335,761 filed June 1, 2021, **Qualcomm Reference Number 205300**, and all provisional applications relating thereto, together with U.S Provisional Application No(s). 63/035,091, filed June 5, 2020, **Qualcomm Reference Number 205300P1**, (and do hereby authorize ASSIGNEE and its representative to hereafter add herein such application number(s) and/or filing date(s) when known), and all divisional applications, renewal applications, continuation applications, continuation-in-part applications, and design applications thereof, and all issued patents of the United States which may have granted or may be granted hereafter thereon and all reissues, renewals, reexaminations, and extensions to any of the foregoing and all patents issuing thereon in the United States;

AND WE further do acknowledge and agree that WE have sold, assigned, conveyed, and transferred, and by these presents do hereby sell, assign, convey, and transfer, unto ASSIGNEE, its successors, its legal representatives, and its assigns, all rights of priority under International Conventions, Treaties, or Agreements, and the entire right, title, and interest throughout the world in said INVENTIONS, including all inventions related thereto or thereof, and all patent applications therefor that may have been filed or may be filed hereafter for said INVENTIONS in any foreign country, countries, or treaty/union organizations, and all divisional applications, renewal applications, continuation applications, continuation-in-part applications, patent of addition applications, confirmation applications, validation applications, utility model applications, and design applications thereof, and all issued patents which may have granted or may be granted hereafter for said INVENTIONS in any country or countries foreign to the United States, and all reissues, renewals, reexaminations, and extensions thereof;

AND WE DO HEREBY authorize and request the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications or registrations, to issue all patents for said INVENTIONS to said ASSIGNEE, its successors, its legal representatives and its assigns, in accordance with the terms of this instrument;

AND WE DO HEREBY sell, assign, transfer, and convey to said ASSIGNEE, its successors, its legal representatives, and its assigns all claims for damages and all remedies arising out of or relating to any violation(s) of any of the rights assigned hereby that have or may have accrued prior to the date of assignment to said ASSIGNEE, or may accrue hereafter, including, but not limited to the right to sue for, seek, obtain, collect, recover, and retain damages and any

ongoing or prospective royalties to which WE may be entitled, or that WE may collect for any infringement or from any settlement or agreement related to any of said patents before or after issuance;

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AND WE HEREBY covenant that WE will not execute any writing or do any act whatsoever conflicting with these presents.

Done at _____, on _____
City, State, Country Date Sungwoo PARK

Done at _____, on _____
City, State, Country Date Wooseok NAM

Done at _____, on _____
City, State, Country Date Tao LUO

Done at _____, on _____
City, State, Country Date Junyi LI

Done at _____, on _____
City, State, Country Date Juan MONTOJO

Done at San Diego, on 8/14/01
City, State, Country Date Jing SUN

Done at _____, on _____
City, State, Country Date Xiaoxia ZHANG

Done at _____, on _____
City, State, Country Date John Edward SMEE

Done at _____, on _____
City, State, Country Date Peter GAAL

Done at _____, on _____
City, State, Country Date Taesang YOO

Done at _____, on _____
City, State, Country Date Simone MERLIN

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WHEREAS, **QUALCOMM Incorporated** (hereinafter “**ASSIGNEE**”), a Delaware corporation, having a place of business at **5775 Morehouse Drive, San Diego, California 92121-**

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AND WE HEREBY covenant that WE will not execute any writing or do any act whatsoever conflicting with these presents.

Done at _____, on _____
City, State, Country Date Sungwoo PARK

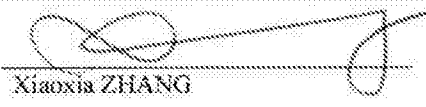
Done at _____, on _____
City, State, Country Date Wooseok NAM

Done at _____, on _____
City, State, Country Date Tao LUO

Done at _____, on _____
City, State, Country Date Junyi LI

Done at _____, on _____
City, State, Country Date Juan MONTOJO

Done at _____, on _____
City, State, Country Date Jing SUN

Done at San Diego, CA, US, on 06/09/2021 
City, State, Country Date Xiaoxia ZHANG

Done at _____, on _____
City, State, Country Date John Edward SMEE

Done at _____, on _____
City, State, Country Date Peter GAAL

Done at _____, on _____
City, State, Country Date Taesang YOO

Done at _____, on _____
City, State, Country Date Simone MERLIN

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ongoing or prospective royalties to which WE may be entitled, or that WE may collect for any infringement or from any settlement or agreement related to any of said patents before or after issuance;

AND WE HEREBY covenant and agree that WE will communicate promptly to said ASSIGNEE, its successors, its legal representatives, and its assigns, any facts known to us respecting said INVENTIONS, and will testify in any legal proceeding, sign all lawful papers, execute all applications and certificates, make all rightful declarations and/or oaths, and provide all lawful assistance to said ASSIGNEE, its successors, its legal representatives and its assigns, to obtain and enforce patent protection for said INVENTIONS in all countries;

AND WE HEREBY covenant that WE will not execute any writing or do any act whatsoever conflicting with these presents.

Done at _____, on _____
City, State, Country Date Sungwoo PARK

Done at _____, on _____
City, State, Country Date Wooseok NAM

Done at _____, on _____
City, State, Country Date Tao LUO

Done at _____, on _____
City, State, Country Date Junyi LI

Done at _____, on _____
City, State, Country Date Juan MONTOJO

Done at _____, on _____
City, State, Country Date Jing SUN

Done at _____, on _____
City, State, Country Date Xiaoxia ZHANG

Done at SAN DIEGO CA, on JUNE 30, 2021
City, State, Country Date 
John Edward SMEE

Done at _____, on _____
City, State, Country Date Peter GAAL

Done at _____, on _____
City, State, Country Date Taesang YOO

Done at _____, on _____
City, State, Country Date Simone MERLIN

ASSIGNMENT

WHEREAS, WE,

1. **Sungwoo PARK**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
2. **Wooseok NAM**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
3. **Tao LUO**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
4. **Junyi LI**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
5. **Juan MONTJOJO**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
6. **Jing SUN**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
7. **Xiaoxia ZHANG**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
8. **John Edward SMEE**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
9. **Peter GAAL**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
10. **Taesang YOO**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
11. **Simone MERLIN**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,

have conceived of one or more processes, methods, machines, articles of manufacture, designs, compositions of matter, inventions, discoveries or new or useful improvements relating to **SYSTEMS AND METHODS FOR BI-STATIC RADIO-BASED OBJECT LOCATION DETECTION** (collectively the “**INVENTIONS**”) for which WE have executed and/or may execute one or more patent applications therefor; and

WHEREAS, **QUALCOMM Incorporated** (hereinafter “**ASSIGNEE**”), a Delaware corporation, having a place of business at **5775 Morehouse Drive, San Diego, California 92121-**

1714, U.S.A., desires to acquire or otherwise obtain the entire right, title, and interest in and to said INVENTIONS, including all inventions related thereto or thereof, all patent applications therefor, and all patents that have granted or may be granted hereafter thereon, including but not limited to those identified below.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, WE do hereby acknowledge that WE have sold, assigned, conveyed, and transferred, and by these presents do hereby sell, assign, convey, and transfer, unto ASSIGNEE, its successors, its legal representatives, and its assigns, the entire right, title, and interest throughout the world in and to said INVENTIONS, including all patent applications therefor that may have been filed or may be filed hereafter for said INVENTIONS in the United States, including but not limited to U.S. Application No(s). 17/335,761 filed June 1, 2021, **Qualcomm Reference Number 205300**, and all provisional applications relating thereto, together with U.S. Provisional Application No(s). 63/035,091, filed June 5, 2020, **Qualcomm Reference Number 205300P1**, (and do hereby authorize ASSIGNEE and its representative to hereafter add herein such application number(s) and/or filing date(s) when known), and all divisional applications, renewal applications, continuation applications, continuation-in-part applications, and design applications thereof, and all issued patents of the United States which may have granted or may be granted hereafter thereon and all reissues, renewals, reexaminations, and extensions to any of the foregoing and all patents issuing thereon in the United States;

AND WE further do acknowledge and agree that WE have sold, assigned, conveyed, and transferred, and by these presents do hereby sell, assign, convey, and transfer, unto ASSIGNEE, its successors, its legal representatives, and its assigns, all rights of priority under International Conventions, Treaties, or Agreements, and the entire right, title, and interest throughout the world in said INVENTIONS, including all inventions related thereto or thereof, and all patent applications therefor that may have been filed or may be filed hereafter for said INVENTIONS in any foreign country, countries, or treaty/union organizations, and all divisional applications, renewal applications, continuation applications, continuation-in-part applications, patent of addition applications, confirmation applications, validation applications, utility model applications, and design applications thereof, and all issued patents which may have granted or may be granted hereafter for said INVENTIONS in any country or countries foreign to the United States, and all reissues, renewals, reexaminations, and extensions thereof;

AND WE DO HEREBY authorize and request the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications or registrations, to issue all patents for said INVENTIONS to said ASSIGNEE, its successors, its legal representatives and its assigns, in accordance with the terms of this instrument;

AND WE DO HEREBY sell, assign, transfer, and convey to said ASSIGNEE, its successors, its legal representatives, and its assigns all claims for damages and all remedies arising out of or relating to any violation(s) of any of the rights assigned hereby that have or may have accrued prior to the date of assignment to said ASSIGNEE, or may accrue hereafter, including, but not limited to the right to sue for, seek, obtain, collect, recover, and retain damages and any

ongoing or prospective royalties to which WE may be entitled, or that WE may collect for any infringement or from any settlement or agreement related to any of said patents before or after issuance;

AND WE HEREBY covenant and agree that WE will communicate promptly to said ASSIGNEE, its successors, its legal representatives, and its assigns, any facts known to us respecting said INVENTIONS, and will testify in any legal proceeding, sign all lawful papers, execute all applications and certificates, make all rightful declarations and/or oaths, and provide all lawful assistance to said ASSIGNEE, its successors, its legal representatives and its assigns, to obtain and enforce patent protection for said INVENTIONS in all countries;

AND WE HEREBY covenant that WE will not execute any writing or do any act whatsoever conflicting with these presents.

Done at _____, on _____
City, State, Country Date Sungwoo PARK

Done at _____, on _____
City, State, Country Date Wooseok NAM

Done at _____, on _____
City, State, Country Date Tao LUO


Done at _____, on _____
City, State, Country Date Junyi LI

Done at _____, on _____
City, State, Country Date Juan MONTOJO

Done at _____, on _____
City, State, Country Date Jing SUN

Done at _____, on _____
City, State, Country Date Xiaoxia ZHANG

Done at _____, on _____
City, State, Country Date John Edward SMEE

Done at San Diego, CA, USA, on 06/02/2021
City, State, Country Date 
Peter GAAL

Done at _____, on _____
City, State, Country Date Taesang YOO

Done at _____, on _____
City, State, Country Date Simone MERLIN

ASSIGNMENT

WHEREAS, WE,

1. **Sungwoo PARK**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
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11. **Simone MERLIN**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,

have conceived of one or more processes, methods, machines, articles of manufacture, designs, compositions of matter, inventions, discoveries or new or useful improvements relating to **SYSTEMS AND METHODS FOR BI-STATIC RADIO-BASED OBJECT LOCATION DETECTION** (collectively the “**INVENTIONS**”) for which WE have executed and/or may execute one or more patent applications therefor; and

WHEREAS, **QUALCOMM Incorporated** (hereinafter “**ASSIGNEE**”), a Delaware corporation, having a place of business at **5775 Morehouse Drive, San Diego, California 92121-**

1714, U.S.A., desires to acquire or otherwise obtain the entire right, title, and interest in and to said INVENTIONS, including all inventions related thereto or thereof, all patent applications therefor, and all patents that have granted or may be granted hereafter thereon, including but not limited to those identified below.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, WE do hereby acknowledge that WE have sold, assigned, conveyed, and transferred, and by these presents do hereby sell, assign, convey, and transfer, unto ASSIGNEE, its successors, its legal representatives, and its assigns, the entire right, title, and interest throughout the world in and to said INVENTIONS, including all patent applications therefor that may have been filed or may be filed hereafter for said INVENTIONS in the United States, including but not limited to U.S. Application No(s). 17/335,761 filed June 1, 2021, **Qualcomm Reference Number 205300**, and all provisional applications relating thereto, together with U.S Provisional Application No(s). 63/035,091, filed June 5, 2020, **Qualcomm Reference Number 205300P1**, (and do hereby authorize ASSIGNEE and its representative to hereafter add herein such application number(s) and/or filing date(s) when known), and all divisional applications, renewal applications, continuation applications, continuation-in-part applications, and design applications thereof, and all issued patents of the United States which may have granted or may be granted hereafter thereon and all reissues, renewals, reexaminations, and extensions to any of the foregoing and all patents issuing thereon in the United States;

AND WE further do acknowledge and agree that WE have sold, assigned, conveyed, and transferred, and by these presents do hereby sell, assign, convey, and transfer, unto ASSIGNEE, its successors, its legal representatives, and its assigns, all rights of priority under International Conventions, Treaties, or Agreements, and the entire right, title, and interest throughout the world in said INVENTIONS, including all inventions related thereto or thereof, and all patent applications therefor that may have been filed or may be filed hereafter for said INVENTIONS in any foreign country, countries, or treaty/union organizations, and all divisional applications, renewal applications, continuation applications, continuation-in-part applications, patent of addition applications, confirmation applications, validation applications, utility model applications, and design applications thereof, and all issued patents which may have granted or may be granted hereafter for said INVENTIONS in any country or countries foreign to the United States, and all reissues, renewals, reexaminations, and extensions thereof;

AND WE DO HEREBY authorize and request the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications or registrations, to issue all patents for said INVENTIONS to said ASSIGNEE, its successors, its legal representatives and its assigns, in accordance with the terms of this instrument;

AND WE DO HEREBY sell, assign, transfer, and convey to said ASSIGNEE, its successors, its legal representatives, and its assigns all claims for damages and all remedies arising out of or relating to any violation(s) of any of the rights assigned hereby that have or may have accrued prior to the date of assignment to said ASSIGNEE, or may accrue hereafter, including, but not limited to the right to sue for, seek, obtain, collect, recover, and retain damages and any

ongoing or prospective royalties to which WE may be entitled, or that WE may collect for any infringement or from any settlement or agreement related to any of said patents before or after issuance;

AND WE HEREBY covenant and agree that WE will communicate promptly to said ASSIGNEE, its successors, its legal representatives, and its assigns, any facts known to us respecting said INVENTIONS, and will testify in any legal proceeding, sign all lawful papers, execute all applications and certificates, make all rightful declarations and/or oaths, and provide all lawful assistance to said ASSIGNEE, its successors, its legal representatives and its assigns, to obtain and enforce patent protection for said INVENTIONS in all countries;

AND WE HEREBY covenant that WE will not execute any writing or do any act whatsoever conflicting with these presents.

Done at _____, on _____
City, State, Country Date Sungwoo PARK

Done at _____, on _____
City, State, Country Date Wooseok NAM

Done at _____, on _____
City, State, Country Date Tao LUO

Done at _____, on _____
City, State, Country Date Junyi LI

Done at _____, on _____
City, State, Country Date Juan MONTOJO

Done at _____, on _____
City, State, Country Date Jing SUN

PATENT

Qualcomm Reference Number: 205300
Page 5 of 5

Done at _____, on _____
City, State, Country Date Xiaoxia ZHANG

Done at _____, on _____
City, State, Country Date John Edward SMEE

Done at _____, on _____
City, State, Country Date Peter GAAL

Done at San Diego, CA, USA, on 6/3/2011
City, State, Country Date 
Taesang YOO

Done at _____, on _____
City, State, Country Date Simone MERLIN

ASSIGNMENT

WHEREAS, WE,

1. **Sungwoo PARK**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
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10. **Taesang YOO**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,
11. **Simone MERLIN**, having a mailing address located at **5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.**,

have conceived of one or more processes, methods, machines, articles of manufacture, designs, compositions of matter, inventions, discoveries or new or useful improvements relating to **SYSTEMS AND METHODS FOR BI-STATIC RADIO-BASED OBJECT LOCATION DETECTION** (collectively the “**INVENTIONS**”) for which WE have executed and/or may execute one or more patent applications therefor; and

WHEREAS, **QUALCOMM Incorporated** (hereinafter “**ASSIGNEE**”), a Delaware corporation, having a place of business at **5775 Morehouse Drive, San Diego, California 92121-**

1714, U.S.A., desires to acquire or otherwise obtain the entire right, title, and interest in and to said INVENTIONS, including all inventions related thereto or thereof, all patent applications therefor, and all patents that have granted or may be granted hereafter thereon, including but not limited to those identified below.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, WE do hereby acknowledge that WE have sold, assigned, conveyed, and transferred, and by these presents do hereby sell, assign, convey, and transfer, unto ASSIGNEE, its successors, its legal representatives, and its assigns, the entire right, title, and interest throughout the world in and to said INVENTIONS, including all patent applications therefor that may have been filed or may be filed hereafter for said INVENTIONS in the United States, including but not limited to U.S. Application No(s). 17/335,761 filed June 1, 2021, **Qualcomm Reference Number 205300**, and all provisional applications relating thereto, together with U.S. Provisional Application No(s). 63/035,091, filed June 5, 2020, **Qualcomm Reference Number 205300P1**, (and do hereby authorize ASSIGNEE and its representative to hereafter add herein such application number(s) and/or filing date(s) when known), and all divisional applications, renewal applications, continuation applications, continuation-in-part applications, and design applications thereof, and all issued patents of the United States which may have granted or may be granted hereafter thereon and all reissues, renewals, reexaminations, and extensions to any of the foregoing and all patents issuing thereon in the United States;

AND WE further do acknowledge and agree that WE have sold, assigned, conveyed, and transferred, and by these presents do hereby sell, assign, convey, and transfer, unto ASSIGNEE, its successors, its legal representatives, and its assigns, all rights of priority under International Conventions, Treaties, or Agreements, and the entire right, title, and interest throughout the world in said INVENTIONS, including all inventions related thereto or thereof, and all patent applications therefor that may have been filed or may be filed hereafter for said INVENTIONS in any foreign country, countries, or treaty/union organizations, and all divisional applications, renewal applications, continuation applications, continuation-in-part applications, patent of addition applications, confirmation applications, validation applications, utility model applications, and design applications thereof, and all issued patents which may have granted or may be granted hereafter for said INVENTIONS in any country or countries foreign to the United States, and all reissues, renewals, reexaminations, and extensions thereof;

AND WE DO HEREBY authorize and request the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications or registrations, to issue all patents for said INVENTIONS to said ASSIGNEE, its successors, its legal representatives and its assigns, in accordance with the terms of this instrument;

AND WE DO HEREBY sell, assign, transfer, and convey to said ASSIGNEE, its successors, its legal representatives, and its assigns all claims for damages and all remedies arising out of or relating to any violation(s) of any of the rights assigned hereby that have or may have accrued prior to the date of assignment to said ASSIGNEE, or may accrue hereafter, including, but not limited to the right to sue for, seek, obtain, collect, recover, and retain damages and any

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City, State, Country Date Sungwoo PARK

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City, State, Country Date Wooseok NAM

Done at _____, on _____
City, State, Country Date Tao LUO

Done at _____, on _____
City, State, Country Date Junyi LI

Done at _____, on _____
City, State, Country Date Juan MONTOJO

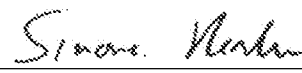
Done at _____, on _____
City, State, Country Date Jing SUN

Done at _____, on _____
City, State, Country Date Xiaoxia ZHANG

Done at _____, on _____
City, State, Country Date John Edward SMEE

Done at _____, on _____
City, State, Country Date Peter GAAL

Done at _____, on _____
City, State, Country Date Taesang YOO

Done at San diego, CA, USA, on 6/23/2021
City, State, Country Date 
Simone MERLIN