

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT6214361

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
ALEXANDROS MANOLAKOS	03/10/2020
SONY AKKARAKARAN	04/14/2020
SVEN FISCHER	03/12/2020
JAY KUMAR SUNDARARAJAN	04/05/2020
JOSEPH BINAMIRA SORIAGA	04/13/2020
TINGFANG JI	06/01/2020
RECEIVING PARTY DATA	
Name:	QUALCOMM INCORPORATED
Street Address:	5775 MOREHOUSE DRIVE
City:	SAN DIEGO
State/Country:	CALIFORNIA
Postal Code:	92121-1714
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	16739054
CORRESPONDENCE DATA	
Fax Number:	
<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>	
Phone:	7036217140
Email:	meo.docket@mg-ip.com
Correspondent Name:	MUNCY, GEISLER, OLDS & LOWE, P.C./QC
Address Line 1:	4000 LEGATO ROAD, SUITE 310
Address Line 4:	FAIRFAX, VIRGINIA 22033
ATTORNEY DOCKET NUMBER:	QC190995
NAME OF SUBMITTER:	RENEE ELDER
SIGNATURE:	/Renee Elder/
DATE SIGNED:	07/23/2020
Total Attachments: 18	

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ASSIGNMENT

WHEREAS, WE,

1. **Alexandros MANOLAKOS**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
2. **Sony AKKARAKARAN**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
3. **Sven FISCHER**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
4. **Jay Kumar SUNDARARAJAN**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
5. **Joseph Binamira SORIAGA**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
6. **Tingfang JI**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,

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 **SIGNALING OF RECEPTION-TO-TRANSMISSION MEASUREMENTS FORROUND-TRIP-TIME (RTT)-BASED POSITIONING** (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). **16/739,054** filed **January 9, 2020**, Qualcomm Reference Number **190995**, and all provisional applications relating thereto, together with U.S. Provisional Application No(s). **20190100017**, filed **January 11, 2019**, Qualcomm Reference Number

190995GR1, (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;

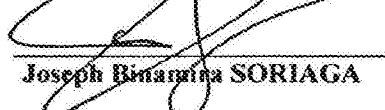
AND WE HEREBY covenant that WE will not execute any writing or do any act whatsoever conflicting with these presents.

Done at _____, on _____
City, State Date
Alexandros MANOLAKOS

Done at _____, on _____
City, State Date
Sony AKKARAKARAN

Done at _____, on _____
City, State Date
Sven FISCHER

Done at _____, on _____
City, State Date
Jay Kumar SUNDARARAJAN

Done at San Diego, CA, on 4/15/2020
City, State Date

Joseph Binamina SORIAGA

Done at _____, on _____
City, State Date
Tingfang JI

ASSIGNMENT

WHEREAS, WE,

1. **Alexandros MANOLAKOS**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
2. **Sony AKKARAKARAN**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
3. **Sven FISCHER**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
4. **Jay Kumar SUNDARARAJAN**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
5. **Joseph Binamira SORIAGA**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
6. **Tingfang JI**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,

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 **SIGNALING OF RECEPTION-TO-TRANSMISSION MEASUREMENTS FORROUND-TRIP-TIME (RTT)-BASED POSITIONING** (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). **16/739,054** filed **January 9, 2020**, Qualcomm Reference Number **190995**, and all provisional applications relating thereto, together with U.S. Provisional Application No(s). **20190100017**, filed **January 11, 2019**, Qualcomm Reference Number

190995GR1, (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 Diego, CA, on 03/10/2020
City, State Date



Alexandros MANOLAKOS

Done at _____, on _____
City, State Date

Sony AKKARAKARAN

Done at _____, on _____
City, State Date

Sven FISCHER

Done at _____, on _____
City, State Date

Jay Kumar SUNDARARAJAN

Done at _____, on _____
City, State Date

Joseph Binamira SORIAGA

Done at _____, on _____
City, State Date

Tingfang JI

ASSIGNMENT

WHEREAS, WE,

1. **Alexandros MANOLAKOS**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
2. **Sony AKKARAKARAN**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
3. **Sven FISCHER**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
4. **Jay Kumar SUNDARARAJAN**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
5. **Joseph Binamira SORIAGA**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
6. **Tingfang JI**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,

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 **SIGNALING OF RECEPTION-TO-TRANSMISSION MEASUREMENTS FORROUND-TRIP-TIME (RTT)-BASED POSITIONING** (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). **16/739,054** filed **January 9, 2020**, Qualcomm Reference Number **190995**, and all provisional applications relating thereto, together with U.S. Provisional Application No(s). **20190100017**, filed **January 11, 2019**, Qualcomm Reference Number

190995GR1, (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 Date **Alexandros MANOLAKOS**

Done at Poway, CA, on 4/14/2020
City, State Date 
Sony AKKARAKARAN

Done at _____, on _____
City, State Date **Sven FISCHER**

Done at _____, on _____
City, State Date **Jay Kumar SUNDARARAJAN**

Done at _____, on _____
City, State Date **Joseph Binamira SORIAGA**

Done at _____, on _____
City, State Date **Tingfang Ji**

ASSIGNMENT

WHEREAS, WE,

1. Alexandros MANOLAKOS, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121-1714,
2. Sony AKKARAKARAN, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121-1714,
3. Sven FISCHER, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121-1714,
4. Jay Kumar SUNDARARAJAN, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121-1714,
5. Joseph Binamira SORIAGA, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121-1714,
6. Tingfang JI, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121-1714,

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 **SIGNALING OF RECEPTION-TO-TRANSMISSION MEASUREMENTS FORROUND-TRIP-TIME (RTT)-BASED POSITIONING** (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). 16/739,054 filed January 9, 2020, Qualcomm Reference Number 190995, and all provisional applications relating thereto, together with U.S. Provisional Application No(s). 20190100017, filed January 11, 2019, Qualcomm Reference Number

190995GRI, (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 Date

Alexandros MANOLAKOS

Done at _____, on _____
City, State Date

Sony AKKARAKARAN

Done at Wrocław, on March 12, 2020
City, State Date


Sven FISCHER

Done at _____, on _____
City, State Date

Jay Kumar SUNDARARAJAN

Done at _____, on _____
City, State Date

Joseph Binamira SORIAGA

Done at _____, on _____
City, State Date

Tingfang JI

ASSIGNMENT

WHEREAS, WE,

1. **Alexandros MANOLAKOS**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
2. **Sony AKKARAKARAN**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
3. **Sven FISCHER**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
4. **Jay Kumar SUNDARARAJAN**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
5. **Joseph Binamira SORIAGA**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
6. **Tingfang JI**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,

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 **SIGNALING OF RECEPTION-TO-TRANSMISSION MEASUREMENTS FORROUND-TRIP-TIME (RTT)-BASED POSITIONING** (collectively the “**INVENTIONS**”) for which WE have executed and/or may execute one or more patent applications therefor; and

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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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PATENT

Quotation Reference Number: 190995

Page 1 of 3

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

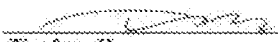
Done at _____ on _____
City, State Date Alexandros MANOLAKOS

Done at _____ on _____
City, State Date Sony AKKARAKHAN

Done at _____ on _____
City, State Date Sven FISCHER

Done at _____ on _____
City, State Date Jay Kumar SUNDARARAJAN

Done at _____ on _____
City, State Date Joseph Blasimir SORIAGA

Done at San Diego, CA on 6/1/2010
City, State Date 
Tingfang Ji

ASSIGNMENT

WHEREAS, WE,

1. **Alexandros MANOLAKOS**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
2. **Sony AKKARAKARAN**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
3. **Sven FISCHER**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
4. **Jay Kumar SUNDARARAJAN**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
5. **Joseph Binamira SORIAGA**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,
6. **Tingfang JI**, having a mailing address located at **5775 Morehouse Drive San Diego, CA 92121-1714**,

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 **SIGNALING OF RECEPTION-TO-TRANSMISSION MEASUREMENTS FORROUND-TRIP-TIME (RTT)-BASED POSITIONING** (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). **16/739,054** filed **January 9, 2020**, Qualcomm Reference Number **190995**, and all provisional applications relating thereto, together with U.S. Provisional Application No(s). **20190100017**, filed **January 11, 2019**, Qualcomm Reference Number

190995GR1, (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 Date
Alexandros MANOLAKOS

Done at _____, on _____
City, State Date
Sony AKKARAKARAN

Done at _____, on _____
City, State Date
Sven FISCHER

Done at San Diego, CA, on April 5, 2020
City, State Date

Jay Kumar SUNDARARAJAN

Done at _____, on _____
City, State Date
Joseph Binamira SORIAGA

Done at _____, on _____
City, State Date
Tingfang JI