PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6693438

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	

CONVEYING PARTY DATA

Name	Execution Date
LOUIS JOSEPH KEROFSKY	04/27/2021
MICHAEL STEFANICK	04/29/2021
MIKKO JUHANI PALATSI	04/20/2021
DEEPANKAR KATYAL	04/27/2021

RECEIVING PARTY DATA

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

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	17301268

CORRESPONDENCE DATA

Fax Number: (651)735-1102

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.

Phone: 651 735 1100

Email: pairdocketing@ssiplaw.com

Correspondent Name: SHUMAKER & SIEFFERT, P. A.

Address Line 1: 1625 RADIO DRIVE, SUITE 100

Address Line 4: WOODBURY, MINNESOTA 55125

ATTORNEY DOCKET NUMBER:	1616-053US01/207378
NAME OF SUBMITTER:	KAYLA A. TAHTI
SIGNATURE:	/Kayla A. Tahti/
DATE SIGNED:	05/05/2021

Total Attachments: 12

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WHEREAS, WE,

- I. Louis Joseph KEROFSKY, having a mailing address located at 5775 Morehouse Drive.
 San Diego, California 92121-1714, U.S.A.,
- Michael STEFANICK, having a mailing address located at 5775 Morehouse Drive, San Diego, California 92121, 1714, U.S.A.
- Mikko Juhani PALATSI, having a mailing address located at 5775 Morehouse Drive.
 San Diego, California 92121-1714, U.S.A.
- Deepankar KATYAL, having a mailing address located at 575 Morchouse 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 DETECTING A SUB-IMAGE REGION OF INTEREST IN AN IMAGE USING PILOT SIGNALS (collectively the INVENTIONS) for which WE have executed and/or may execute one or more patent applications therefor, and

WHEREAS, OUALCOMM 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 filled or may be filled hereafter for said INVENTIONS in the United States, including but not limited to U.S. Application No(s). 17/301,268 filled March 30, 2021. Qualcomm Reference Number 207378, and all provisional applications relating thereto, together with U.S. Provisional Application. No(s). 63/073,280, filled September 1, 2020, Qualcomm Reference Number 208212P1, (and do hereby authorize ASSIGNEE and its representative to hereafter add herein such applications, continuation 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 applications, validation applications, utility model addition applications, continuation 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 self, 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 royalities 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 coverant 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 earlis, and provide all lawful assistance to said ASSIGNEE, its successors, its legal representatives and its assigns, in obtain and enforce patent protection for said INVENTIONS in all commes.

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

Done at	City, State, Country	, on <u>A_f, Q</u>	7.202) Oue	Louis Joseph K&ROFSK	v
Donest	City, State, Country	÷013	Liste	Michael STEFANICK	
Done at	City, State, Country	, sn	Date	Mikko Juhani PALATSI	
Done at	Cas Suite Courts	, on	Date	Deepankar KATYAL	

WHEREAS, WE,

- 1. **Louis Joseph KEROFSKY**, having a mailing address located at 5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.,
- 2. **Michael STEFANICK**, having a mailing address located at 5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.,
- 3. **Mikko Juhani PALATSI,** having a mailing address located at 5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.,
- 4. **Deepankar KATYAL**, 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 **DETECTING A SUB-IMAGE REGION OF INTEREST IN AN IMAGE USING PILOT SIGNALS** (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). 17/301,268 filed March 30, 2021, Qualcomm Reference Number 207378, and all provisional applications relating thereto, together with U.S. Provisional Application No(s). 63/073,280, filed September 1, 2020, Qualcomm Reference Number 208212P1, (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;

PATENT Qualcomin Reference Founder, 207378 Page 1 of 1

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

Done at	Caty State Country	, on	Date	Louis Joseph KEROFSKY
Donesi	ALL SEASONS AND SEASONS AND SEASONS ASSESSED.	.on <u>4-79</u>	<i>f</i> (Michael STEFANICK
i wacat	City, State, Country	• OR	Date	Mikko Juhani PALATSI
Pone at	Circ State Country	.08	Line	Deepankar KATYAL

WHEREAS, WE,

- 1. Louis Joseph KEROFSKY, having a mailing address located at 5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.,
- 2. **Michael STEFANICK**, having a mailing address located at 5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.,
- 3. Mikko Juhani PALATSI, having a mailing address located at 5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.,
- 4. **Deepankar KATYAL**, 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 DETECTING A SUB-IMAGE REGION OF INTEREST IN AN IMAGE USING PILOT SIGNALS (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). 17/301,268 filed March 30, 2021, Qualcomm Reference Number 207378, and all provisional applications relating thereto, together with U.S. Provisional Application No(s). 63/073,280, filed September 1, 2020, Qualcomm Reference Number 208212P1, (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;

PATENT Qualcomm Reference Number: 207378 Page 3 of 3

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

Done at	3	on	
	City, State, Country	Date	Louis Joseph KEROFSKY
was a second			e e e e e e e e e e e e e e e e e e e
Done at	City, State, Country	On	Michael STEFANICK
Done at	Jan DIGTU (a. 11) .	on <u>4/20/2021</u>	
	City, State, Country	Date	Mikko Juhani PALATSI
Done at		òn	
	City State Country	Data	Bassankar KATVAI

WHEREAS, WE,

- 1. **Louis Joseph KEROFSKY**, having a mailing address located at 5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A.,
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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;

PATENT

Qualcomm Reference Number: 207378

Page 3 of 3

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

> PATENT REEL: 056150 FRAME: 0658

RECORDED: 05/05/2021