504165463 01/05/2017 PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4212140

SUBMISSION TYPE:		NEW ASSIGNMENT			
NATURE OF CONVEYANCE:		ASSIGNMENT			
CONVEYING PART	Υ DATA	I			
		Name	Execution Date		
DEREK HOWER			11/08/2016		
HAROLD WADE CA	IN III		12/05/2016		
CARL ALAN WALDS	SPURGER		11/07/2016		
RECEIVING PARTY	ΌΑΤΑ				
Name:	QUALCO	OMM INCORPORATED			
Street Address:	5775 MG	OREHOUSE DRIVE			
City:	SAN DIE	EGO			
State/Country:	CALIFO	LIFORNIA			
Postal Code:	92121				
Property Ty Application Numbe		5274665	—		
Application Numbe		5274665			
Fax Number:	(703)621-7155			
		the e-mail address first; if that is u ; if that is unsuccessful, it will be s			
Phone:		7036217140			
		mp@mg-ip.com	ng-ip.com Y, GEISSLER, OLDS & LOWE, P.C./QUALC		
•		1000 LEGATO ROAD, SUITE 310			
Address Line 4:		AIRFAX, VIRGINIA 22033			
ATTORNEY DOCKET NUMBER:		QC162878	QC162878		
NAME OF SUBMITTER:		TAMI M. PROCOPIO	TAMI M. PROCOPIO		
SIGNATURE:		/Tami M. Procopio/	/Tami M. Procopio/		
DATE SIGNED:		01/05/2017			
Fotal Attachments: 6 source=162878_Assig source=162878_Assig source=162878_Assig	gnment#page gnment#page2	2.tif			

source=162878_Assignment#page5.tif source=162878_Assignment#page6.tif

ASSIGNMENT

WHEREAS, WE,

1. **Derek HOWER,** a citizen of the United States of America, having a mailing address located at 5775 Morehouse Drive, San Diego, CA and a resident of Durham, NC,

2. Harold Wade CAIN III, a citizen of the United States of America, having a mailing address located at 5775 Morehouse Drive, San Diego, CA and a resident of Raleigh, NC; and

3. Carl Alan WALDSPURGER, a citizen of the United States of America, having a mailing address located at 5775 Morehouse Drive, San Diego, CA and a resident of Palo Alto, CA;

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 QoS-CLASS BASED SERVICING OF REQUESTS FOR A SHARED RESOURCE (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). 15/274,665 filed September 23, 2016, Qualcomm Reference No. 162878, together with U.S. Provisional Application No(s). 62/320,379, filed April 8, 2016, Qualcomm Reference No. 162878P1, (and do hereby authorize ASSIGNEE and its representative to hereafter add herein such 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 [Paleys, NC, on	11/8/2016	(Lee-ee-	-
	LÖCATION	DATE	Derek HOWER	
	457			
Done at	LOCATION , on	DATE	Harold Wade CAIN III	
	LOCATION			
Done at	• OII			
	LOCATION	DATE	Carl Alan WALDSPURGER	

PATENT REEL: 040862 FRAME: 0757

PATENT QUALCOMM Ref. No. 162878 Page 1 of 2

ASSIGNMENT

WHEREAS, WE,

1. **Derek HOWER**, a citizen of the United States of America, having a mailing address located at 5775 Morehouse Drive, San Diego, CA and a resident of Durham, NC;

2. Harold Wade CAIN III, a citizen of the United States of America, having a mailing address located at 5775 Morehouse Drive, San Diego, CA and a resident of Raleigh, NC; and

3. **Carl Alan WALDSPURGER**, a citizen of the United States of America, having a mailing address located at 5775 Morehouse Drive, San Diego, CA and a resident of Palo Alto, CA;

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 QoS-CLASS BASED SERVICING OF REQUESTS FOR A SHARED RESOURCE (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). 15/274,665 filed September 23, 2016, Qualcomm Reference No. 162878, together with U.S. Provisional Application No(s). 62/320,379, filed April 8, 2016, Qualcomm Reference No. 162878P1, (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, 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,

PATENT QUALCOMM Ref. No. 162878 Page 2 of 2

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		
	LOCATION	DATE	Derek HOWER
Done at	Raleigh NC. on	12/5/2016	Qe_tt
(a	LOCATION	DATE	Harold Wade CAIN III
Done at	, on		
	LOCATION	DATE	Carl Alan WALDSPURGER

PATENT REEL: 040862 FRAME: 0759

ASSIGNMENT

WHEREAS, WE,

1. **Derek HOWER,** a citizen of the United States of America, having a mailing address located at 5775 Morehouse Drive, San Diego, CA and a resident of Durham, NC;

2. **Harold Wade CAIN III,** a citizen of the United States of America, having a mailing address located at 5775 Morehouse Drive, San Diego, CA and a resident of Raleigh, NC; and

3. **Carl Alan WALDSPURGER,** a citizen of the United States of America, having a mailing address located at 5775 Morehouse Drive, San Diego, CA and a resident of Palo Alto, CA;

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 **QoS-CLASS BASED SERVICING OF REQUESTS FOR A SHARED RESOURCE** (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). 15/274,665 filed September 23, 2016, Qualcomm Reference No. 162878, together with U.S. Provisional Application No(s). 62/320,379, filed April 8, 2016, Qualcomm Reference No. 162878P1, (and do hereby authorize ASSIGNEE and its representative to hereafter add herein such 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	, 0	N	
	LOCATION	DATE	Derek HOWER
Done at	,0	n	8
	LOCATION	DATE	Harold Wade CAIN III
Done at	Palo Alto, (A	n_07-Na-2016	~~~
	LOCATION	DATE	Carl Alan WALDSPURGER
			and the second sec

PATENT REEL: 040862 FRAME: 0761

RECORDED: 01/05/2017