PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT2761099

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
XIAOWEN WANG	02/07/2014
VINAY R. MAJJIGI	02/27/2014
SYED A. MUJTABA	02/27/2014
CHRISTOPHER J. HANSEN	01/08/2014

RECEIVING PARTY DATA

Name:	Apple Inc.	
Street Address:	1 Infinite Loop	
City:	Cupertino	
State/Country:	CALIFORNIA	
Postal Code:	95014	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	14152739

CORRESPONDENCE DATA

Fax Number: (408)341-3098

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via

US Mail.

Phone: 408.341.3000

Email: pthompson@wcsr.com

Correspondent Name: WOMBLE CARLYLE SANDRIDGE & RICE LLP Address Line 1: 10050 NORTH WOLFE ROAD, SUITE 260

Address Line 2: ATTN: MICHAEL J. FERRAZANO CUPERTINO, CALIFORNIA 95014

ATTORNEY DOCKET NUMBER:	P18451US1/16680US.1
NAME OF SUBMITTER:	JAMES T. ASLANIS, JR.
SIGNATURE:	/James T. Aslanis, Jr./
DATE SIGNED:	03/10/2014

Total Attachments: 4

source=P18451US1_16680US1_Assignments#page1.tif source=P18451US1_16680US1_Assignments#page2.tif

PATENT REEL: 032396 FRAME: 0635

502714491

source=P18451US1_16680US1_Assignments#page3.tif source=P18451US1_16680US1_Assignments#page4.tif

PATENT REEL: 032396 FRAME: 0636

Whereas I, an undersigned inventor, have invented certain new and useful improvements as set forth in the patent application entitled:

FILTERING OF WI-FI PHYSICAL LAYER MEASUREMENTS

-(Att)	/. Docket No.	P18451US1/10	5680US.1)					
X	which bears t		U.S. patent applic No. <u>14/152,739</u> pplication.		on date her -	ewitti.		
ackno		valuable consic undersigned inv	feration, the rece entor, hereby:	ipt and suffi	ciency of v	vhich is h	sreby	
all imp	iite Loop, Cupe provements and	ertino, CA 950. Linventions dis	pple Inc., a Calif 14 ("ASSIGNEE closed in, applica ght to claim prior	"), the entire utions based	right, title upon, and	and inter patents gr	est in any an- anted upon	
		pplication or an	mmissioner of P y divisional, con					
applic	m any acts whi ation, as well a	ch are reasonab s any derivative	nd documents and thy necessary in complications the from such applications	onnection w reof, foreign	ith the pro	secution o	of said	(or
	iSIGNEE, its s	uccessors, assig	nts and condition ms and other legi firs, legal represe	al representa	rives, and s			
5) contra			have not entered icts with this ass		enter into	any assigr	iment,	
6) with n	Authorize and coordal of this		orney/agent to in	isent above ti	ne applicat	ion No. in	order to assi	ist
	Signed on the	date indicated	beside my signat	ure.				
	Signature:	War.			Date:	2/7/	12014	
	Typed Name:	Xiaoweo WANG						

(Atty. Docket No. P18451US1/16680US.1)

PATENT REEL: 032396 FRAME: 0637

Whereas I, an undersigned inventor, have invented certain new and useful improvements as set forth in the patent application entitled:

FILTERING OF WI-FI PHYSICAL LAYER MEASUREMENTS

(Atty. Docket No. P18451US1/16680US.1)
for which I have executed a U.S. patent application on even date herewith. which bears U.S. application No. 14/152,739
which is a U.S. provisional application.
For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, an undersigned inventor, hereby:
1) Sell, assign and transfer to Apple Inc., a California corporation having a place of business at 1 Infinite Loop, Cupertino, CA 95014 ("ASSIGNEE"), the entire right, title and interest in any and all improvements and inventions disclosed in, applications based upon, and patents granted upon (including foreign patents and the right to claim priority), the above-referenced application.
2) Authorize and request the Commissioner of Patents to issue any and all United States Patents resulting from said application or any divisional, continuation, substitute, renewal, re-examination or reissue thereof to the ASSIGNEE.
3) Agree to execute all papers and documents and, entirely at the ASSIGNEE's expense, perform any acts which are reasonably necessary in connection with the prosecution of said application, as well as any derivative applications thereof, foreign applications based thereon, and/or the enforcement of patents resulting from such applications.
4) Agree that the terms, covenants and conditions of this assignment shall inure to the benefit of the ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon the inventor, as well as the inventor's heirs, legal representatives and assigns.
5) Warrant and represent that I have not entered and will not enter into any assignment, contract, or understanding that conflicts with this assignment.
6) Authorize and request my attorney/agent to insert above the application No. in order to assist with recordal of this assignment.
Signed on the date indicated beside my signature.
Signature: Typed Name: Viney R MAUIGI Date: 2 27 /2014

v1.0

Whereas I, an undersigned inventor, have invented certain new and useful improvements as set forth in the patent application entitled:

FILTERING OF WI-FI PHYSICAL LAYER MEASUREMENTS

for which I have executed a U.S. patent application on even date herewith. which bears U.S. application No. 14/152,739 which is a U.S. provisional application. For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, an undersigned inventor, hereby: Sell, assign and transfer to Apple Inc., a California corporation having a place of business at Infinite Loop, Cupertino, CA 95014 ("ASSIGNEE"), the entire right, title and interest in any and all improvements and inventions disclosed in, applications based upon, and patents granted upon including foreign patents and the right to claim priority), the above-referenced application. Authorize and request the Commissioner of Patents to issue any and all United States Patents esulting from said application or any divisional, continuation, substitute, renewal, re-examination or eissue thereof to the ASSIGNEE. Agree to execute all papers and documents and, entirely at the ASSIGNEE's expense, perform any acts which are reasonably necessary in connection with the prosecution of said application, as well as any derivative applications thereof, foreign applications based thereon, and/or the enforcement of patents resulting from such applications. Agree that the terms, covenants and conditions of this assignment shall inure to the benefit of the ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon the inventor, as well as the inventor's heirs, legal representatives and assigns. Warrant and represent that I have not entered and will not enter into any assignment, contract, or understanding that conflicts with this assignment.	
Sell, assign and transfer to Apple Inc., a California corporation having a place of business at Infinite Loop, Cupertino, CA 95014 ("ASSIGNEE"); the entire right, title and interest in any and all improvements and inventions disclosed in, applications based upon, and patents granted upon including foreign patents and the right to claim priority), the above-referenced application. 2) Authorize and request the Commissioner of Patents to issue any and all United States Patents esulting from said application or any divisional, continuation, substitute, renewal, re-examination or eissue thereof to the ASSIGNEE. 3) Agree to execute all papers and documents and, entirely at the ASSIGNEE's expense, perform any acts which are reasonably necessary in connection with the prosecution of said application, as well as any derivative applications thereof, foreign applications based thereon, and/or the enforcement of patents resulting from such applications. 4) Agree that the terms, covenants and conditions of this assignment shall inure to the benefit of the ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon the inventor, as well as the inventor's heirs, legal representatives and assigns. 5) Warrant and represent that I have not entered and will not enter into any assignment, contract, or understanding that conflicts with this assignment. 6) Authorize and request my attorney/agent to insert above the application No. in order to assist with recordal of this assignment. Signed on the date indicated beside my signature.	which bears U.S. application No. 14/152.739
Infinite Loop, Cupertino, CA 95014 ("ASSIGNEE"), the entire right, title and interest in any and all improvements and inventions disclosed in, applications based upon, and patents granted upon including foreign patents and the right to claim priority), the above-referenced application. (2) Authorize and request the Commissioner of Patents to issue any and all United States Patents resulting from said application or any divisional, continuation, substitute, renewal, re-examination or reissue thereof to the ASSIGNEE. (3) Agree to execute all papers and documents and, entirely at the ASSIGNEE's expense, perform any acts which are reasonably necessary in connection with the prosecution of said application, as well as any derivative applications thereof, foreign applications based thereon, and/or the enforcement of patents resulting from such applications. (4) Agree that the terms, covenants and conditions of this assignment shall inure to the benefit of the ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon the inventor, as well as the inventor's heirs, legal representatives and assigns. (5) Warrant and represent that I have not entered and will not enter into any assignment, contract, or understanding that conflicts with this assignment. (6) Authorize and request my attorney/agent to insert above the application No. in order to assist with recordal of this assignment. (6) Signed on the date indicated beside my signature.	For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, an undersigned inventor, hereby:
esulting from said application or any divisional, continuation, substitute, renewal, re-examination or eissue thereof to the ASSIGNEE. 3) Agree to execute all papers and documents and, entirely at the ASSIGNEE's expense, perform any acts which are reasonably necessary in connection with the prosecution of said application, as well as any derivative applications thereof, foreign applications based thereon, and/or the enforcement of patents resulting from such applications. 4) Agree that the terms, covenants and conditions of this assignment shall inure to the benefit of the ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon the inventor, as well as the inventor's heirs, legal representatives and assigns. 5) Warrant and represent that I have not entered and will not enter into any assignment, contract, or understanding that conflicts with this assignment. 6) Authorize and request my attorney/agent to insert above the application No. in order to assist with recordal of this assignment. Signed on the date indicated beside my signature.	Sell, assign and transfer to Apple Inc., a California corporation having a place of business at Infinite Loop, Cupertino, CA 95014 ("ASSIGNEE"), the entire right, title and interest in any and all improvements and inventions disclosed in, applications based upon, and patents granted upon (including foreign patents and the right to claim priority), the above-referenced application.
perform any acts which are reasonably necessary in connection with the prosecution of said application, as well as any derivative applications thereof, foreign applications based thereon, and/or the enforcement of patents resulting from such applications. Agree that the terms, covenants and conditions of this assignment shall inure to the benefit of the ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon the inventor, as well as the inventor's heirs, legal representatives and assigns. Warrant and represent that I have not entered and will not enter into any assignment, contract, or understanding that conflicts with this assignment. Authorize and request my attorney/agent to insert above the application No. in order to assist with recordal of this assignment. Signed on the date indicated beside my signature.	2) Authorize and request the Commissioner of Patents to issue any and all United States Patents resulting from said application or any divisional, continuation, substitute, renewal, re-examination or reissue thereof to the ASSIGNEE.
he ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon the inventor, as well as the inventor's heirs, legal representatives and assigns. Warrant and represent that I have not entered and will not enter into any assignment, contract, or understanding that conflicts with this assignment. Authorize and request my attorney/agent to insert above the application No. in order to assist with recordal of this assignment. Signed on the date indicated beside my signature.	Agree to execute all papers and documents and, entirely at the ASSIGNEE's expense, perform any acts which are reasonably necessary in connection with the prosecution of said application, as well as any derivative applications thereof, foreign applications based thereon, and/or the enforcement of patents resulting from such applications.
contract, or understanding that conflicts with this assignment. Authorize and request my attorney/agent to insert above the application No. in order to assist with recordal of this assignment. Signed on the date indicated beside my signature.	4) Agree that the terms, covenants and conditions of this assignment shall inure to the benefit of the ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon the inventor, as well as the inventor's heirs, legal representatives and assigns.
with recordal of this assignment. Signed on the date indicated beside my signature.	5) Warrant and represent that I have not entered and will not enter into any assignment, contract, or understanding that conflicts with this assignment.
	6) Authorize and request my attorney/agent to insert above the application No. in order to assist with recordal of this assignment.
Signature: A7-No-JAA Date: 2/27/29/4 Typed Name: Syed A MUTTABA	Signed on the date indicated beside my signature.
	Signature: An Majtral Date: 427/2014 Typed Name: 5yed A. MUTTABA

¥1.0

Whereas I, an undersigned inventor, have invented certain new and useful improvements as set forth in the patent application entitled:

FILTERING OF WI-FI PHYSICAL LAYER MEASUREMENTS

(Atty, Docket No. P18451US1/16680US.1)
☐ for which I have executed a U.S. patent application on even date herewith. ■ which bears U.S. application No. 14/152,739
which is a U.S. provisional application.
For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, an undersigned inventor, hereby:
1) Sell, assign and transfer to Apple Inc., a California corporation having a place of business at 1 Infinite Loop, Cupertino, CA 95014 ("ASSIGNEE"), the entire right, title and interest in any and all improvements and inventions disclosed in, applications based upon, and patents granted upon (including foreign patents and the right to claim priority), the above-referenced application.
Authorize and request the Commissioner of Patents to issue any and all United States Patents resulting from said application or any divisional, continuation, substitute, renewal, re-examination or reissue thereof to the ASSIGNEE.
Agree to execute all papers and documents and, entirely at the ASSIGNEE's expense, perform any acts which are reasonably necessary in connection with the prosecution of said application, as well as any derivative applications thereof, foreign applications based thereon, and/or the enforcement of patents resulting from such applications.
Agree that the terms, covenants and conditions of this assignment shall inure to the benefit of the ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon the inventor, as well as the inventor's heirs, legal representatives and assigns.
5) Warrant and represent that I have not entered and will not enter into any assignment, contract, or understanding that conflicts with this assignment.
6) Authorize and request my attorney/agent to insert above the application No. in order to assist with recordal of this assignment.
Signed on the date indicated beside my signature.
Signature: Off A Date: 1/8/19 Typed Name: Christopher J. MANSIIN

¥1,0

(Atty. Docket No. P18451U81/16680US.1)

RECORDED: 03/10/2014

PATENT REEL: 032396 FRAME: 0640