

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
KARTHIKEYAN GANESAN	02/10/2020
PRATEEK BASU MALLICK	02/10/2020
JOACHIM LOEHR	02/10/2020
ALEXANDER JOHAN MARIA GOLITSCHKE ELDER VON ELBWART	02/10/2020
RAVI KUCHIBHOTLA	02/08/2020
VIJAY NANGIA	02/07/2020
ROBERT T. LOVE	02/09/2020
RECEIVING PARTY DATA	
Name:	LENOVO (SINGAPORE) PTE. LTD.
Street Address:	151 LORONG CHUAN
Internal Address:	# 02-01
City:	NEW TECH PARK
State/Country:	SINGAPORE
Postal Code:	556741
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	16786497
CORRESPONDENCE DATA	
Fax Number:	(801)531-1929
<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:	(801) 994-4646
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Address Line 1:	50 W. BROADWAY, 10TH FLOOR
Address Line 4:	SALT LAKE CITY, UTAH 84101
ATTORNEY DOCKET NUMBER:	SMM920180020-US-NP
NAME OF SUBMITTER:	BRIAN C. KUNZLER
SIGNATURE:	/Brian C. Kunzler/

DATE SIGNED:	02/10/2020
Total Attachments: 21 source=Assignment_SMM920180020-US-NP#page1.tif source=Assignment_SMM920180020-US-NP#page2.tif source=Assignment_SMM920180020-US-NP#page3.tif source=Assignment_SMM920180020-US-NP#page4.tif source=Assignment_SMM920180020-US-NP#page5.tif source=Assignment_SMM920180020-US-NP#page6.tif source=Assignment_SMM920180020-US-NP#page7.tif source=Assignment_SMM920180020-US-NP#page8.tif source=Assignment_SMM920180020-US-NP#page9.tif source=Assignment_SMM920180020-US-NP#page10.tif source=Assignment_SMM920180020-US-NP#page11.tif source=Assignment_SMM920180020-US-NP#page12.tif source=Assignment_SMM920180020-US-NP#page13.tif source=Assignment_SMM920180020-US-NP#page14.tif source=Assignment_SMM920180020-US-NP#page15.tif source=Assignment_SMM920180020-US-NP#page16.tif source=Assignment_SMM920180020-US-NP#page17.tif source=Assignment_SMM920180020-US-NP#page18.tif source=Assignment_SMM920180020-US-NP#page19.tif source=Assignment_SMM920180020-US-NP#page20.tif source=Assignment_SMM920180020-US-NP#page21.tif	

ASSIGNMENT AND AGREEMENT

For good and valuable consideration, the receipt of which is hereby acknowledged, we, **Karthikeyan Ganesan, Kaiserslautern, GERMANY; Prateek Basu Mallick, Dreieich, GERMANY; Joachim Loehr, Wiesbaden, GERMANY; and Alexander Johan Maria Golitschek Edler von Elbwart, Darmstadt, GERMANY; Ravi Kuchibhotla, Clarendon Hills, Illinois; Vijay Nangia, Woodridge, Illinois; and Robert T. Love, Barrington, Illinois**, have sold, assigned and transferred, and do hereby sell, assign and transfer, unto **Lenovo (Singapore) Pte. Ltd.**, a corporation of Singapore, having a place of business at 151, Lorong Chuan #02-01, New Tech Park, Singapore 556741, and its successors, assigns, and legal representatives, the entire right, title and interest for the United States of America in and to certain inventions entitled **"SELECTIVE RETRANSMISSION OF GROUPCAST DATA"** as described, illustrated in **SMM920180020-US-NP** and as described, illustrated and claimed in the following applications: described, illustrated and claimed in the following applications:

U.S. Application filed herewith and entitled: **"SELECTIVE RETRANSMISSION OF GROUPCAST DATA"**

U.S. Application 62/803,363 filed February 8, 2019, herein and entitled: **"GROUPCAST WITH BEAMFORMED SELECTIVE (RE)TRANSMISSION"**

I hereby also sell, assign and transfer unto Assignee, the entire right, title and interest in and to the invention and in and to applications for Letters Patent therefor in all countries foreign to the United States of America, including all rights under any and all international conventions and treaties in respect of the invention and the applications for Letters Patent in foreign countries, and I further authorize Assignee to apply for Letters Patent in foreign countries directly in its own name, and to claim priority of the filing date of the application for Letters Patent of the United States of America under the provisions of any and all international conventions and treaties.

I hereby also sell, assign and transfer unto Assignee, the entire right, title and interest in and to other applications for Letters Patent on the inventions referenced in this Assignment and Agreement, and all rights, title and interest in and to all applications for Letters Patent in respect of the invention filed under any and all international conventions and treaties together with the entire right, title and interest in and to Letters Patent which may be issued upon the application(s) or any application(s) otherwise claiming priority

thereto, and upon any divisions, extensions, continuations, reissues and/or re-examinations of such application(s).

I further authorize Assignee to apply for Letters Patent directly in its own name where applicable, and to claim priority of the filing date of the application for Letters Patent filed under the laws of the applicable country and under the provisions of any and all international conventions and treaties.

I hereby authorize Assignee to request the Commissioner of Patents of the United States of America to issue any Letters Patents upon the aforesaid application, divisions, extensions, continuations, reissues or re-examinations, to Assignee, for the sole use and benefit of Assignee, to the full end of the term for which Letters Patent may be granted, the same as they would have been held and enjoyed by me had this assignment not been made, and I hereby authorize Assignee to request the equivalent authorities in foreign countries to issue the patents of their respective countries to Assignee.

I agree that, when requested, I will, without charge to Assignee, but at its expense, sign all papers, take all rightful oaths, and do all acts which may be necessary, desirable or convenient for securing, maintaining and enforcing patents for the inventions in any and all countries and for vesting title thereto in Assignee.

I covenant with Assignee that the interest and property hereby conveyed is free from all prior assignment, grant, mortgage, license or other encumbrance.

(1) Legal Name of Inventor: **Karthikeyan Ganesan**

Signature:  Date: 10/2/2020

(2) Legal Name of Inventor: **Prateek Basu Mallick**

Signature: _____ Date: _____

(3) Legal Name of Inventor: **Joachim Loehr**

Signature: _____ Date: _____

(4) Legal Name of Inventor: **Alexander Johan Maria Golitschek Edler vonElbwart**

Signature: _____ Date: _____

(5) Legal Name of Inventor: **Ravi Kuchibhotla**

Signature: _____ Date: _____

(6) Legal Name of Inventor: **Vijay Nangia**

Signature: _____ Date: _____

(7) Legal Name of Inventor: **Robert T. Love**

Signature: _____ Date: _____

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(1) Legal Name of Inventor: **Karthikeyan Ganesan**

Signature: _____ Date: _____

(2) Legal Name of Inventor: **Prateek Basu Mallick**

Signature: Prateek Date: Feb 10, 2020

(3) Legal Name of Inventor: **Joachim Loehr**

Signature: _____ Date: _____

(4) Legal Name of Inventor: **Alexander Johan Maria Golitschek Edler vonElbwart**

Signature: _____ Date: _____

(5) Legal Name of Inventor: **Ravi Kuchibhotla**

Signature: _____ Date: _____

(6) Legal Name of Inventor: **Vijay Nangia**

Signature: _____ Date: _____

(7) Legal Name of Inventor: **Robert T. Love**

Signature: _____ Date: _____

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(1) Legal Name of Inventor: **Karthikeyan Ganesan**

Signature: _____ Date: _____

(2) Legal Name of Inventor: **Prateek Basu Mallick**

Signature: _____ Date: _____

(3) Legal Name of Inventor: **Joachim Loehr**

Signature:  _____ Date: Feb 10th 2020

(4) Legal Name of Inventor: **Alexander Johan Maria Golitschek Edler vonElbwart**

Signature: _____ Date: _____

(5) Legal Name of Inventor: **Ravi Kuchibhotla**

Signature: _____ Date: _____

(6) Legal Name of Inventor: **Vijay Nangia**

Signature: _____ Date: _____

(7) Legal Name of Inventor: **Robert T. Love**

Signature: _____ Date: _____

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(1) Legal Name of Inventor: **Karthikeyan Ganesan**

Signature: _____ Date: _____

(2) Legal Name of Inventor: **Prateek Basu Mallick**

Signature: _____ Date: _____

(3) Legal Name of Inventor: **Joachim Loehr**

Signature: _____ Date: _____

(4) Legal Name of Inventor: **Alexander Johan Maria Golitschek Edler vonElbwart**

Signature:  Date: 10 Feb 2020

(5) Legal Name of Inventor: **Ravi Kuchibhotla**

Signature: _____ Date: _____

(6) Legal Name of Inventor: **Vijay Nangia**

Signature: _____ Date: _____

(7) Legal Name of Inventor: **Robert T. Love**

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(1) Legal Name of Inventor: **Karthikeyan Ganesan**

Signature: _____ Date: _____

(2) Legal Name of Inventor: **Prateek Basu Mallick**

Signature: _____ Date: _____

(3) Legal Name of Inventor: **Joachim Loehr**

Signature: _____ Date: _____

(4) Legal Name of Inventor: **Alexander Johan Maria Golitschek Edler vonElbwart**

Signature: _____ Date: _____

(5) Legal Name of Inventor: **Ravi Kuchibhotla**

Signature:  _____ Date: February 8, 2020

(6) Legal Name of Inventor: **Vijay Nangia**

Signature: _____ Date: _____

(7) Legal Name of Inventor: **Robert T. Love**

Signature: _____ Date: _____

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(1) Legal Name of Inventor: **Karthikeyan Ganesan**

Signature: _____ Date: _____

(2) Legal Name of Inventor: **Prateek Basu Mallick**

Signature: _____ Date: _____

(3) Legal Name of Inventor: **Joachim Loehr**

Signature: _____ Date: _____

(4) Legal Name of Inventor: **Alexander Johan Maria Golitschek Edler vonElbwart**

Signature: _____ Date: _____

(5) Legal Name of Inventor: **Ravi Kuchibhotla**

Signature: _____ Date: _____

(6) Legal Name of Inventor: **Vijay Nangia**

Signature: Vijay Nangia Date: 02/07/2020

(7) Legal Name of Inventor: **Robert T. Love**

Signature: _____ Date: _____

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U.S. Application 62/803,363 filed February 8, 2019, herein and entitled: **"GROUPOCAST WITH BEAMFORMED SELECTIVE (RE)TRANSMISSION"**

I hereby also sell, assign and transfer unto Assignee, the entire right, title and interest in and to the invention and in and to applications for Letters Patent therefor in all countries foreign to the United States of America, including all rights under any and all international conventions and treaties in respect of the invention and the applications for Letters Patent in foreign countries, and I further authorize Assignee to apply for Letters Patent in foreign countries directly in its own name, and to claim priority of the filing date of the application for Letters Patent of the United States of America under the provisions of any and all international conventions and treaties.

I hereby also sell, assign and transfer unto Assignee, the entire right, title and interest in and to other applications for Letters Patent on the inventions referenced in this Assignment and Agreement, and all rights, title and interest in and to all applications for Letters Patent in respect of the invention filed under any and all international conventions and treaties together with the entire right, title and interest in and to Letters Patent which may be issued upon the application(s) or any application(s) otherwise claiming priority

thereto, and upon any divisions, extensions, continuations, reissues and/or re-examinations of such application(s).

I further authorize Assignee to apply for Letters Patent directly in its own name where applicable, and to claim priority of the filing date of the application for Letters Patent filed under the laws of the applicable country and under the provisions of any and all international conventions and treaties.

I hereby authorize Assignee to request the Commissioner of Patents of the United States of America to issue any Letters Patents upon the aforesaid application, divisions, extensions, continuations, reissues or re-examinations, to Assignee, for the sole use and benefit of Assignee, to the full end of the term for which Letters Patent may be granted, the same as they would have been held and enjoyed by me had this assignment not been made, and I hereby authorize Assignee to request the equivalent authorities in foreign countries to issue the patents of their respective countries to Assignee.

I agree that, when requested, I will, without charge to Assignee, but at its expense, sign all papers, take all rightful oaths, and do all acts which may be necessary, desirable or convenient for securing, maintaining and enforcing patents for the inventions in any and all countries and for vesting title thereto in Assignee.

I covenant with Assignee that the interest and property hereby conveyed is free from all prior assignment, grant, mortgage, license or other encumbrance.

(1) Legal Name of Inventor: **Karthikeyan Ganesan**

Signature: _____ Date: _____

(2) Legal Name of Inventor: **Prateek Basu Mallick**

Signature: _____ Date: _____

(3) Legal Name of Inventor: **Joachim Loehr**

Signature: _____ Date: _____

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Signature: _____ Date: _____

(5) Legal Name of Inventor: **Ravi Kuchibhotla**

Signature: _____ Date: _____

(6) Legal Name of Inventor: **Vijay Nangia**

Signature: _____ Date: _____

(7) Legal Name of Inventor: **Robert T. Love**

Signature: Robert T Love Date: 9 Feb 2020