

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
HONGMEI LIU	08/11/2020
CHENXI ZHU	08/11/2020
ZHENNIAN SUN	08/11/2020
BINGCHAO LIU	08/11/2020
VIJAY NANGIA	08/10/2020
RECEIVING PARTY DATA	
Name:	LENOVO (BEIJING) LIMITED
Street Address:	6 SHANGDI WEST ROAD
Internal Address:	HAI DIAN DISTRICT
City:	BEIJING
State/Country:	CHINA
Postal Code:	100085
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	16975019
CORRESPONDENCE DATA	
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ATTORNEY DOCKET NUMBER:	SEC920170124-US-PCT
NAME OF SUBMITTER:	MICHAEL L. BARTHOLOMEW
SIGNATURE:	/Michael L. Bartholomew/
DATE SIGNED:	10/27/2020
Total Attachments: 15	

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ASSIGNMENT AND AGREEMENT

For good and valuable consideration, the receipt of which is hereby acknowledged, we, **Hongmei Liu, Beijing, CHINA; Chenxi Zhu, Fairfax, Virginia, US; Zhennian Sun, Beijing, CHINA; Bingchao Liu, Beijing, CHINA; and Vijay Nangia, Woodridge, Illinois, US;** have sold, assigned and transferred, and do hereby sell, assign and transfer, unto **Lenovo (Beijing) Limited**, a corporation of China, having a place of business at 6 Shangdi West Road, Haidian District, Beijing, China 100085, and its successors, assigns, and legal representatives, the entire right, title and interest for the United States of America in and to certain inventions described, illustrated and claimed in the following applications:

U.S. Application filed herein and entitled: **"DETERMINING A PRECODER FOR PTRS PORTS"**

International Application **PCT/CN2018/077027**, filed on **February 23, 2018** entitled **"DETERMINING A PRECODER FOR PTRS PORTS"**; and

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: **Hongmei Liu**

Signature: Hongmei Liu Date: 2020-08-11

(2) Legal Name of Inventor: **Chenxi Zhu**

Signature: _____ Date: _____

(3) Legal Name of Inventor: **Zhennian Sun**

Signature: _____ Date: _____

(4) Legal Name of Inventor: **Bingchao Liu**

Signature: _____ Date: _____

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

Signature: _____ Date: _____

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(1) Legal Name of Inventor: **Hongmei Liu**

Signature: _____ Date: _____

(2) Legal Name of Inventor: **Chenxi Zhu**

Signature:  _____ Date: 8/11/2020
Type text here

(3) Legal Name of Inventor: **Zhennian Sun**

Signature: _____ Date: _____

(4) Legal Name of Inventor: **Bingchao Liu**

Signature: _____ Date: _____

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

Signature: _____ Date: _____

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(1) Legal Name of Inventor: **Hongmei Liu**

Signature: _____ Date: _____

(2) Legal Name of Inventor: **Chenxi Zhu**

Signature: _____ Date: _____

(3) Legal Name of Inventor: **Zhennian Sun**

Signature: Zhennian Sun Date: 2020/08/11

(4) Legal Name of Inventor: **Bingchao Liu**

Signature: _____ Date: _____

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

Signature: _____ Date: _____

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Signature: _____ Date: _____

(3) Legal Name of Inventor: **Zhennian Sun**

Signature: _____ Date: _____

(4) Legal Name of Inventor: **Bingchao Liu**

Signature: Bingchao Liu Date: 2020-08-11

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

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(3) Legal Name of Inventor: **Zhennian Sun**

Signature: _____ Date: _____

(4) Legal Name of Inventor: **Bingchao Liu**

Signature: _____ Date: _____

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

Signature: Vijay Nangia Date: August 10, 2020