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PATENT ASSIGNMENT COVER SHEET

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| SUBMISSION TYPE: NATURE OF CONVEYANCE: | | NEW ASSIGNMENT | | |
|---|---------------------------------|--|----------------|--|
| | | ASSIGNMENT | | |
| CONVEYING PARTY D | ΑΤΑ | | | |
| | | Name | Execution Date | |
| ZIYI HAO | | | 08/21/2020 | |
| XIAOYAN XIANG | | | 08/31/2020 | |
| FENG ZHU | | | 08/21/2020 | |
| | | | | |
| RECEIVING PARTY DA | | | | |
| Name: | | ALIBABA GROUP HOLDING LIMITED | | |
| Street Address: | FOURTH FLOOR, ONE CAPITAL PLACE | | | |
| Internal Address: | P.O. BOX 847 | | | |
| City: | GEORGETOWN, GRAND CAYMAN | | | |
| State/Country: | CAYM | CAYMAN ISLANDS | | |
| | | | | |
| | 5 Total: 1 | | | |
| Property Type | | Number | | |
| Application Number: | | 17023024 | | |
| CORRESPONDENCE | ΔΤΑ | | | |
| Fax Number: | | (408)938-9069 | | |
| | | the e-mail address first; if that is uns l; if that is unsuccessful, it will be sen | | |
| Phone: | - | 408-938-9060 | | |
| Email: | | cholland@mhbpatents.com | | |
| Correspondent Name: | | MURABITO, HAO & BARNES LLP | | |
| Address Line 1: | | 111 NORTH MARKET STREET | | |

Address Line 2:SUITE 700Address Line 4:SAN JOSE, CALIFORNIA 95113

| ATTORNEY DOCKET NUMBER: | BABA-CS086US |
|-------------------------|----------------|
| NAME OF SUBMITTER: | ERIC J. GASH |
| SIGNATURE: | /Eric J. Gash/ |
| DATE SIGNED: | 09/16/2020 |
| | |

Total Attachments: 2

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Assignment to Alibaba Group Holding Limited

In consideration of good and valuable consideration, receipt of which is hereby acknowledged, I/we Ziyi HAO, Xiaoyan XIANG, Feng ZHU

do hereby sell, assign, and transfer unto Alibaba Group Holding Limited a Corporation having its principle place of business at Fourth Floor, One Capital Place, P.O. Box 847, Georgetown Grand Cayman, Cayman Islands and its successors and assigns, the entire right, title, and interest for the United States and all foreign countries, in and to any and all improvements, including the right of priority in, to, and under, the application for the United States patent entitled:

MEMORY MANAGEMENT UNIT, ADDRESS TRANSLATION METHOD, AND PROCESSOR

X filed herewith and the inventions set forth and described therein, and any and all Letters Patent of the

United States and of countries foreign thereto which may be granted thereon or therefor; or

Serial No.: filed on and the inventions set forth and described therein, and any and all Letters Patent of the United States and of countries foreign thereto which may be granted thereon or therefor;

And for the above consideration, I/we agree promptly upon request of Alibaba Group Holding Limited its successors or assigns, to execute and deliver without further compensation any power of attorney, assignment, application, whether original, continuation, divisional or reissue, or other papers which may be necessary or desirable fully to secure to Alibaba Group Holding Limited, its successors and assigns, the inventions described in said application and all patent rights therein, in the United States and in any country foreign thereto, and to cooperate and assist in the prosecution of interference proceedings involving said inventions and in the adjudication or reexamination of said Letters Patent provided the expenses which may be incurred by me/us in lending such cooperation and assistance are paid by Alibaba Group Holding Limited.

I/we further covenant with Alibaba Group Holding Limited its successors, assigns, and legal representatives that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned;

In witness whereof, I/we hereunto set my/our hand(s) and seal:

| Inventor's Signature: | ZiyiHao | Date: | 2020-8-21 |
|-----------------------|---------------|-------|-----------|
| Inventor's Signature: | Xiaoyan XIANG | Date: | |
| Inventor's Signature: | Feng ZHU | Date: | 2020-821 |

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MEMORY MANAGEMENT UNIT, ADDRESS TRANSLATION METHOD, AND PROCESSOR

X filed herewith and the inventions set forth and described therein, and any and all Letters Patent of the

United States and of countries foreign thereto which may be granted thereon or therefor; or

| | Serial No.: | filed on | and the inventions set forth |
|-----------|---------------|-------------------------------------|--|
| ********* | | | tent of the United States and of countries foreign |
| | thereto which | may be granted thereon or therefor; | |

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In witness whereof, I/we hereunto set my/our hand(s) and seal:

| Inventor's Signature: | | Date: | |
|---------------------------|---------------------------|-------|--|
| Inventor's Signature: | Ziyi HAO Xiaoyan Xiang | Date: | 2020. 8.31 |
| la contrata de Ciencetura | Xiaoyan XIANG | Data | |
| Inventor's Signature: | Feng ZHU | Date: | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |

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