PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4595923

SUBMISSION TYPE:	CORRECTIVE ASSIGNMENT
	Corrective Assignment to correct the EXECUTION DATE OF INVENTOR KRISHNA T. MALLADI previously recorded on Reel 042751 Frame 0791. Assignor(s) hereby confirms the 05/18/2017 SHOULD BE 05/23/2017.

CONVEYING PARTY DATA

Name	Execution Date
DIMIN NIU	05/22/2017
SHUANGCHEN LI	05/18/2017
BOB BRENNAN	05/18/2017
KRISHNA T. MALLADI	05/23/2017
HONGZHONG ZHENG	05/23/2017

RECEIVING PARTY DATA

Name:	SAMSUNG ELECTRONICS CO., LTD
Street Address:	129, SAMSUNG-RO, YEONGTONG-GU
City:	SUWON-SI, GYEONGGI-DO
State/Country:	KOREA, REPUBLIC OF
Postal Code:	16677

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15595887

CORRESPONDENCE DATA

Fax Number: (626)577-8800

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.

 Phone:
 626 795-9900

 Email:
 pto@lrrc.com

Correspondent Name: LEWIS ROCA ROTHGERBER CHRISTIE LLP

Address Line 1: P.O. BOX 29001

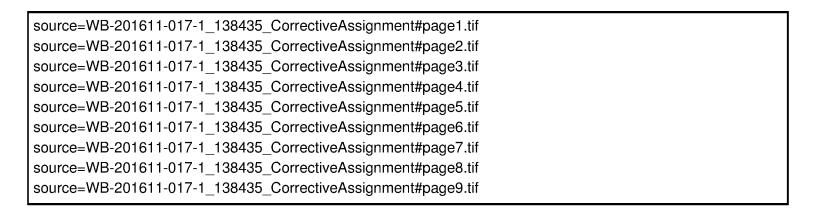
Address Line 4: GLENDALE, CALIFORNIA 91209

ATTORNEY DOCKET NUMBER: 138435 (414471) MJC/VDW	
NAME OF SUBMITTER:	VICKIE D. WALL
SIGNATURE:	/Vickie D. Wall/
DATE SIGNED:	09/15/2017

Total Attachments: 9

PATENT REEL: 043968 FRAME: 0637

504549215



06/19/2017 504420710

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT4467410

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
DIMIN NIU	05/22/2017
SHUANGCHEN LI	05/18/2017
BOB BRENNAN	05/18/2017
KRISHNA T. MALLADI	05/18/2017
HONGZHONG ZHENG	05/23/2017

RECEIVING PARTY DATA

Name:	SAMSUNG ELECTRONICS CO., LTD
Street Address:	129, SAMSUNG-RO, YEONGTONG-GU
City:	SUWON-SI, GYEONGGI-DO
State/Country:	KOREA, REPUBLIC OF
Postal Code:	16677

PROPERTY NUMBERS Total: 1

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Application Number:	15595887

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Phone: 626 795-9900 Email: pto@lrrc.com

Correspondent Name: LEWIS ROCA ROTHGERBER CHRISTIE LLP

P.O. BOX 29001 Address Line 1:

Address Line 4: GLENDALE, CALIFORNIA 91209

ATTORNEY DOCKET NUMBER:	138435 (414471) MJC/VDW
NAME OF SUBMITTER:	VICKIE D. WALL
SIGNATURE:	/Vickie D. Wall/
DATE SIGNED:	06/19/2017

Total Attachments: 8

source=WB-201611-017-1_138435_Assignment#page1.tif

COMBINED DECLARATION (37 CFR §1.63) FOR UTILITY OR DESIGN PATENT APPLICATION AND ASSIGNMENT FORM¹

The undersi	signed acknowledges that this document is being us	sed both as an assignment of the
invention ar	and as the declaration (37 CFR 1.63) for a Utility or I	Design Application.
WHEREAS, t	, the undersigned, hereinafter referred to collective	ly as Assignor, has invented:
Title: A So	SCALING OUT ARCHITECTURE FOR DRAM-BASED PROC	ESSING UNIT (DPU)
for which As	Assignor is about to make or has made United State	es or International application for
WHEREAS, a	, as a below named inventor(s), I/(we) hereby decla	re that:
Section I. D	Declaration	
This declara	ration is directed to:	
	The attached U.S. non-provisional patent appli	ication, or
\boxtimes	U.S. non-provisional patent application numbe 15, 2017 or	r <u>15/595,887</u> filed on <u>May</u>
	PCT international patent application number	filed on
The above-i	e-identified application was made or authorized to b	e made by me (us).
, ,	eve that I am (we are) the original inventor (original in the above-identified application.	joint inventors) of a claimed
¹ This form re	requires the use of an Application Data Sheet.	
101153871_1SEC Ref No.		ef No. 138435

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM Page 1 of 4

SAMSUNG ELECTRONICS CO., LTD.

I (we) hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

I hereby state that I have reviewed and understand the contents of the above identified application, including the claims.

I acknowledge that I am aware of the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

Section II. Assignment

In consideration of and according to the provisions of the Assignor's employment agreement(s), the undersigned hereby sell(s) and assign(s) to

Samsung Electronics Co., Ltd.

having an address at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do 16677, Republic of Korea (hereinafter designated as the Assignee), the entire (100%) right, title and interest for the United States as defined in 35 USC §100, in the invention or design described in the application identified in Section I of this document.

Assignor hereby confirms any prior assignment to Assignee, and to the extent that Assignor has not already done so, agrees to assign, and hereby does, sell, assign and transfer unto Assignee and its successors in interest, the full and exclusive right, title and interest in the United States of America and throughout the world, including the right to claim priority under the laws of the United States, the Paris Convention, and any foreign countries, to the inventions or designs as described in the aforesaid application, to the aforesaid application itself, and to provisional application(s) 62/413,973; 62/413,977; 62/414,426; 62/485,370 to which the aforesaid application claims priority, and to all divisions, continuations, continuations-in-part, or other applications claiming priority directly or indirectly from the aforesaid application or provisional, and any United States or foreign Letters Patent, utility model, or other similar rights which may be granted thereon, including reissues, reexaminations and extensions thereof, and all copyright rights throughout the world in the aforesaid application and the subject matter disclosed therein, these rights, title and interest to be held and enjoyed by Assignee to the full end of the term for which the Letters Patent, utility model, or other similar rights, are granted and any extensions thereof as fully and entirely as the same would have been held by Assignor had this assignment and sale not been made, and the right to sue for, and recover for past

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infringements of, or liabilities for, any of the rights relating to any of the applications, patents, utility models, or other similar rights, resulting therefrom, and the copyright rights;

Assignor hereby covenants and agrees to execute all instruments or documents required or requested for the making and prosecution of any applications of any type for patent, utility model, or other similar rights, and for copyright, in the United States and in all foreign countries including, but not limited to, any provisional, continuation, continuation-in-part, divisional, renewal or substitute thereof, and as to letters patent any reissue, re-examination, or extension thereof, and for litigation regarding, or for the purpose of protecting title and to the said invention, the United States application for patent, or Letters Patent therefor, and to testify in support thereof, for the benefit of Assignee without further or other compensation than that above set forth;

Assignor hereby covenants that no assignment, sale, license, agreement or encumbrance has been or will be entered into which would conflict with this Assignment; and

Assignor hereby requests the United States Patent and Trademark Office to issue the Letters Patent of the United States of America to Assignee, and requests that any official of any country or countries foreign to the United States, whose duty it is to issue or grant patents and applications as aforesaid, to issue the Letters Patent, Utility Model Registration or other similar right to Assignee.

The undersigned hereby grant(s) the law firm of LEWIS ROCA ROTHGERBER CHRISTIE LLP the power to insert on this Declaration and Assignment any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office for recordation of this document.

Section III. Inventor(s)/Assignor(s) Signature(s)

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
FIRST INVENTOR/ASSIGNOR	NIU	Dimin	. ,
SIGNATURE		DATE	5/22/2017

			•
101153871_1SEC Ref No.	WB-201611-017-1	Attorney Ref No.	138435
2002 2101			

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Family Name	First Given Name	Second Given Name
LI	Shuangchen	
	DATE	
· ·		:
Family Name	First Given Name	Second Given Name
BRENNAN	Bob	
	DATE	,
Family Name	First Given Name	Second Given Name
MALLADI	Krishna	T.
Whats	DATE	23rd may, 201
Family Name	First Given Name	Second Given Name
ZHENG	Hongzhong	
Buy	DATE	05/23/201
	Family Name BRENNAN Family Name MALLADI Family Name	Family Name First Given Name BRENNAN Bob DATE Family Name First Given Name MALLADI Krishna DATE Family Name First Given Name MALLADI Krishna DATE

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM Page 4 of 4

Attorney Ref No.

WB-201611-017-1

138435

COMBINED DECLARATION (37 CFR §1.63) FOR UTILITY OR DESIGN PATENT APPLICATION AND ASSIGNMENT FORM¹

The undersigned acknowledges that this document is being used both as an assignment of the invention and as the declaration (37 CFR 1.63) for a Utility or Design Application. WHEREAS, the undersigned, hereinafter referred to collectively as Assignor, has invented: A SCALING OUT ARCHITECTURE FOR DRAM-BASED PROCESSING UNIT (DPU) Title: for which Assignor is about to make or has made United States or International application for patent. WHEREAS, as a below named inventor(s), I/(we) hereby declare that: Section I. Declaration This declaration is directed to: The attached U.S. non-provisional patent application, or \boxtimes U.S. non-provisional patent application number 15/595,887 filed on May 15, 2017, or PCT international patent application number , filed on The above-identified application was made or authorized to be made by me (us). I (we) believe that I am (we are) the original inventor (original joint inventors) of a claimed invention in the above-identified application. ¹ This form requires the use of an Application Data Sheet. 101153871_ISEC WB-201611-017-1 Attorney Ref No. 138435 Ref No.

SAMSUNG ELECTRONICS CO., LTD.

I (we) hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

I hereby state that I have reviewed and understand the contents of the above identified application, including the claims.

I acknowledge that I am aware of the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

Section II. Assignment

In consideration of and according to the provisions of the Assignor's employment agreement(s), the undersigned hereby sell(s) and assign(s) to

Samsung Electronics Co., Ltd.

having an address at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do 16677, Republic of Korea (hereinafter designated as the Assignee), the entire (100%) right, title and interest for the United States as defined in 35 USC §100, in the invention or design described in the application identified in Section I of this document.

Assignor hereby confirms any prior assignment to Assignee, and to the extent that Assignor has not already done so, agrees to assign, and hereby does, sell, assign and transfer unto Assignee and its successors in interest, the full and exclusive right, title and interest in the United States of America and throughout the world, including the right to claim priority under the laws of the United States, the Paris Convention, and any foreign countries, to the inventions or designs as described in the aforesaid application, to the aforesaid application itself, and to provisional application(s) 62/413,973; 62/413,977; 62/414,426; 62/485,370 to which the aforesaid application claims priority, and to all divisions, continuations, continuations-in-part, or other applications claiming priority directly or indirectly from the aforesaid application or provisional, and any United States or foreign Letters Patent, utility model, or other similar rights which may be granted thereon, including reissues, reexaminations and extensions thereof, and all copyright rights throughout the world in the aforesaid application and the subject matter disclosed therein, these rights, title and interest to be held and enjoyed by Assignee to the full end of the term for which the Letters Patent, utility model, or other similar rights, are granted and any extensions thereof as fully and entirely as the same would have been held by Assignor had this assignment and sale not been made, and the right to sue for, and recover for past

101153871_1SEC Ref No	WB-201611-017-1	Attorney Ref No.	138435
	to provide the control of the contro		Market Committee

infringements of, or liabilities for, any of the rights relating to any of the applications, patents, utility models, or other similar rights, resulting therefrom, and the copyright rights;

Assignor hereby covenants and agrees to execute all instruments or documents required or requested for the making and prosecution of any applications of any type for patent, utility model, or other similar rights, and for copyright, in the United States and in all foreign countries including, but not limited to, any provisional, continuation, continuation-in-part, divisional, renewal or substitute thereof, and as to letters patent any reissue, re-examination, or extension thereof, and for litigation regarding, or for the purpose of protecting title and to the said invention, the United States application for patent, or Letters Patent therefor, and to testify in support thereof, for the benefit of Assignee without further or other compensation than that above set forth;

Assignor hereby covenants that no assignment, sale, license, agreement or encumbrance has been or will be entered into which would conflict with this Assignment; and

Assignor hereby requests the United States Patent and Trademark Office to issue the Letters Patent of the United States of America to Assignee, and requests that any official of any country or countries foreign to the United States, whose duty it is to issue or grant patents and applications as aforesaid, to issue the Letters Patent, Utility Model Registration or other similar right to Assignee.

The undersigned hereby grant(s) the law firm of LEWIS ROCA ROTHGERBER CHRISTIE LLP the power to insert on this Declaration and Assignment any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office for recordation of this document.

Section III. Inventor(s)/Assignor(s) Signature(s)

LEGAL NAME OF FIRST	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	NIU	Dimin	
SIGNATURE		DATE	

101153871_1SEC Ref No.	WB-201611-017-1	Attorney Ref No.	138435
ICO MO.			

RECORDED: 09/15/2017

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
SECOND INVENTOR/ASSIGNOR	LI	Shuangchen	
SIGNATURE	Shuangdon Li	DATE	05/18/17

LEGAL NAME OF THIRD	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	BRENNAN	Bob	
SIGNATURE	BAN	5/14/17 DATE	

LEGAL NAME OF FOURTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	MALLADI	Krishna	T.
SIGNATURE	Moss	DATE	5 18 2017

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	ZHENG	Hongzhong	
		DATE.	
SIGNATURE		DATE	

101153871_1SEC Ref No.	WB-201611-017-1	Attorney Ref No.	138435

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM Page 4 of 4