506641652 05/03/2021

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6688462

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
QINGFENG LIU	06/20/2019
MOSTAFA EL-KHAMY	06/21/2019
RAMA MYTHILI VADALI	06/20/2019
TAE-UI KIM	06/25/2019
ANDREA KANG	06/20/2019
DONGWOON BAI	07/03/2019
JUNGWON LEE	07/10/2019
MAIYURAN WIJAY	07/10/2019
JAEWON YOO	06/25/2019

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:	17177720

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.

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

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ATTORNEY DOCKET NUMBER: 202376/MJC/FMO

NAME OF SUBMITTER: FRANCES M. O'BRIEN

PATENT 506641652 REEL: 056114 FRAME: 0420

SIGNATURE:	/Frances M. O'Brien/
DATE SIGNED:	05/03/2021
Total Attachments: 14	
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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: Title: SYSTEM AND METHOD FOR PROVIDING DOMINANT SCENE CLASSIFICATION BY SEMANTIC SEGMENTATION 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 M U.S. non-provisional patent application number 16/452,052, filed on June 25, 2019, 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. This form requires the use of an Application Data Sheet. SEC Ref No. WB-201812-017-1 Attorney Ref No. 167558

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM Page 1 of 5

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) 62/784,320 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 infringements of, or liabilities for, any of the rights

SEC Ref No.	WB-201812-017-1	Attorney Ref No.	167558

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	LIU	Qingfeng	
SIGNATURE	Grafaz lon	DATE	06/20/19

SEC Ref No.	WB-201812-017-1	Attorney Ref No.	167558
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LEGAL NAME OF	Family Name	First Given Name	Second Given Name
SECOND INVENTOR/ASSIGNOR	EL-KHAMY	Mostafa	
SIGNATURE	- Allelo-	DATE	6/21/2019

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
THIRD INVENTOR/ASSIGNOR	VADALI	Rama Mythili	
SIGNATURE	Manulathal	DATE	6/20/2019

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
FOURTH INVENTOR/ASSIGNOR	KANG	Andrea	
SIGNATURE	ANAS	DATE	6/20/19

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
FIFTH INVENTOR/ASSIGNOR	KIM	Tae-ui	
SIGNATURE		DATE	

SEC Ref No.	WB-201812-017-1	Attorney Ref No.	167558
		,	

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
SIGNATURE	H. M	DATE	07/10/2019
LEGAL NAME OF EIGHTH INVENTOR/ASSIGNOR	Family Name WIJAY	First Given Name Maiyuran	Second Given Name
SIGNATURE	24	DATE	7/10/201
LEGAL NAME OF SEVENTH INVENTOR/ASSIGNOR	Family Name LEE	First Given Name Jungwon	Second Given Name
SIGNATURE	Bei Dengue	DATE	7/3/2019
INVENTOR/ASSIGNOR	BAI	Dongwoon	
LEGAL NAME OF SIXTH	Family Name	First Given Name	Second Given Name

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM
Page 5 of 5

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

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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) 62/784,320 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 infringements of, or liabilities for, any of the rights

SEC Ref No	WB-201812-017-1	Attorney Ref No	167558	

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.

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

LEGAL NAME OF FIRST	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	LIU	Qingfeng	
SIGNATURE		DATE	

SEC Ref No.	WB-201812-017-1	Attorney Ref No.	167558

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
SECOND INVENTOR/ASSIGNOR	EL-KHAMY	Mostafa	
SIGNATURE		DATE	
LEGAL NAME OF	Family Name	First Given Name	Second Given Name
THIRD INVENTOR/ASSIGNOR	VADALI	Rama Mythili	
INVENTORYASSIGNOR			
SIGNATURE		DATE	
LEGAL NAME OF FOURTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	KANG	Andrea	
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SIGNATURE		DATE	MAA
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LEGAL NAME OF	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	KIM	Tae-ui	

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
FIFTH INVENTOR/ASSIGNOR	KIM	Tae-ui	
SIGNATURE	2	Jun. 25, 2019 DATE	

SEC Ref No	WB-201812-017-1	Attorney Ref No	167558

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM Page 4 of 5

Multimedia개발팀(S.LSI)/김태의/07028899/2019-06-25 16:42

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

The und	dersign	ed acknowledges that this docum	nent is being used both a	is an assignment of the
inventio	on and	as the declaration (37 CFR 1.63) f	for a Utility or Design Ap	plication.
WHERE	AS, the	e undersigned, hereinafter referre	ed to collectively as Assig	gnor, has invented:
Title:		EM AND METHOD FOR PROVIDIN	G DOMINANT SCENE CL	ASSIFICATION BY
for whice patent.		gnor is about to make or has mad	le United States or Intern	national application for
WHERE	AS, as	a below named inventor(s), I/(we) hereby declare that:	
Section	I. Dec	laration		
This ded	claratio	on is directed to:		
		The attached U.S. non-provision	al patent application, or	
	\boxtimes	U.S. non-provisional patent appli 2019, or	ication number <u>16/452,0</u>	052, filed on <u>June 25,</u>
I		PCT international patent applica	tion number	, filed on
The abo	ove-ide	ntified application was made or a	outhorized to be made by	y me (us).
		that I am (we are) the original inv re above-identified application.	entor (original joint inve	entors) of a claimed
¹ This fo	rm requ	ires the use of an Application Data Shee	rt.	
SEC Ref	No.	WB-201812-017-1	Attorney Ref No.	167558
сомв	INED D	ECLARATION (37 CFR 1.63) FOR UTIL	ITY PATENT APPLICATION A	AND ASSIGNMENT FORM

Page 1 of 5

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SEC Ref No.	WB-201812-017-1	Attorney Ref No.	167558	
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relating to any of the applications, patents, utility models, or other similar rights, resulting therefrom, and the copyright rights;

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LEGAL NAME OF FIRST	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	LIU	Qingfeng	
SIGNATURE		DATE	

SEC Ref No.	WB-201812-017-1	Attorney Ref No.	167558	

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
SECOND INVENTOR/ASSIGNOR	EL-KHAMY	Mostafa	
SIGNATURE		DATE	
LEGAL NAME OF	Family Name	First Given Name	Second Given Name
THIRD INVENTOR/ASSIGNOR	VADALI	Rama Mythili	
SIGNATURE		DATE	
LEGAL NAME OF	Family Name	First Given Name	Second Given Name
FOURTH INVENTOR/ASSIGNOR	KANG	Andrea	
SIGNATURE		DATE	,,,
LEGAL NAME OF FIFTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	KIM	Tae-ui	
SIGNATURE		DATE	
SEC Ref No. WB-201812-017-1		Attorney Ref No.	167558

RECORDED: 05/03/2021

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
SIXTH INVENTOR/ASSIGNOR	BAI	Dongwoon	p
SIGNATURE		DATE	
LEGAL NAME OF SEVENTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	LEE	Jungwon	
SIGNATURE		DATE	
LEGAL NAME OF EIGHTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	YALIW	Maiyuran	
SIGNATURE	Sedomedia (1955)	DATE	
LEGAL NAME OF	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	Y00	Jaewon	
SIGNATURE	Jm	DATE	2019. 6.25
1084498501			
SEC Ref No. WI			

. COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM Page 5 of 5