PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6167043

SUBMISSION TYPE:	CORRECTIVE ASSIGNMENT	
NATURE OF CONVEYANCE:	Corrective Assignment to correct the EXECUTION DATE OF THE FOURTH INVENTOR previously recorded on Reel 044315 Frame 0199. Assignor(s) hereby confirms the CORRECTIVE ASSIGNMENT.	

CONVEYING PARTY DATA

Name	Execution Date
CHANGYONG SON	11/16/2017
WONSUK CHANG	11/15/2017
DEOKSANG KIM	07/20/2017
DAE-KYU SHIN	11/15/2017
BYUNGIN YOO	11/16/2017
SEUNGJU HAN	11/16/2017
JAEJOON HAN	11/16/2017
JINWOO SON	11/16/2017
CHANG KYU CHOI	11/16/2017

RECEIVING PARTY DATA

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

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15833292

CORRESPONDENCE DATA

Fax Number: (202)315-3758

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.

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Correspondent Name: NSIP LAW

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ATTORNEY DOCKET NUMBER: 012052.1498

PATENT REEL: 053614 FRAME: 0106

506120318

NAME OF SUBMITTER:	LUKE Y. CHOI	
SIGNATURE:	/Luke Y. Choi/	
DATE SIGNED:	06/23/2020	
Total Attachments: 7		
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PATENT REEL: 053614 FRAME: 0107

504674043 12/06/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4720765

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
CHANGYONG SON	11/16/2017
WONSUK CHANG	11/15/2017
DEOKSANG KIM	07/20/2017
DAE-KYU SHIN	11/11/2017
BYUNGIN YOO	11/16/2017
SEUNGJU HAN	11/16/2017
JAEJOON HAN	11/16/2017
JINWOO SON	11/16/2017
CHANG KYU CHOI	11/16/2017

RECEIVING PARTY DATA

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

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15833292

CORRESPONDENCE DATA

Fax Number: (202)315-3758

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: 202-429-0020 Email: pto@nsiplaw.com

NSIP LAW Correspondent Name:

Address Line 1: P.O. BOX 65745

Address Line 4: WASHINGTON, D.C. 20035

ATTORNEY DOCKET NUMBER: 012052.1498 NAME OF SUBMITTER: STEPHEN T. BOUGHNER

> **PATENT REEL: 053614 FRAME: 0108**

Attorney Docket No. 012052.1498 SAIT's Ref.: RN-201703-010-1-US0

COMBINED DECLARATION AND ASSIGNMENT UNDER 37 CFR 1.63(e).

DECLARATION

As a below-named inv	antor, i niereby declare triat this di	eciaration is directed to the application attached hereto,
or to United States Ap	olication Number or PCT Internati	onal Application Number
	filed on	(if applicable), entitled:
	FACE VERIFICATION ME	THOD AND APPARATUS
The above-identified a	pplication was made or authorized	d to be made by me.
I believe I am the origi application.	nal inventor or an original joint inv	rentor of a claimed invention in the above-identified
	that any willful false statement mo orment of not more than five (5) v	ade in this declaration is punishable under 18 USC

I have reviewed and understand the contents of the above-identified application, including the claims,

I am aware of the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information that became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

ASSIGNMENT

For valuable consideration, I, as a below-named assignor, hereby assign to:

Samsung Electronics Co., Ltd. 129, Samsung-ro, Yeongtong-gu Suwon-si, Gyeonggi-do, 16677 Republic of Korea

I authorize and request the attorneys appointed in the above-identified application to hereafter complete this Assignment by inserting above the application number and the filing date of the above-identified application when known, and to correct any typographical errors that may be discovered in this Assignment.

This Assignment includes the above-identified application, any and all United States and foreign patents, utility models, and design registrations granted for any of the inventions and improvements that are the subject of the above-identified application, and the right to claim phority based on the filling date of the above-identified application under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes; and I authorize the Assignee to apply in all countries in my name or in its own name for patents, utility models, design registrations, like rights of exclusion, and inventors' certificates for any of the inventions and improvements that are the subject of the above-identified application; and I agree for myself and my heirs, legal representatives, and assigns without further compensation to perform such lawful acts and to sign such further applications, Assignments, preliminary statements, and other lawful documents as the Assignee may reasonably request to effectuate fully this Assignment.

Page 1 of 3

COMBINED DECLARATION AND ASSIGNMENT UNDER 37 CFR 1.63(e)

In witness whereof, I, as a below-named inventor and assignor, intending to be legally bound, have hereunto affixed my signature on the date indicated below next to my signature.

Inventor's Legal Name	Changyong SON		
Inventor's Signature	24465	Date	November 16, 2017
Residence (City, Country)	Anyang-si, Republic of Korea		
Mailing Address	Samsung Advanced Institute of Technology, 130 Semsung-ro, Youngtong-gu, Suwon-si, Gyeonggi-do, 16678, Republic of Korea		
,	ş		
Inventor's Legal Name	Wonsuk CHANG	.,	
Inventor's Signature		Date	
Residence (City, Country)	Hwaseong-si, Republic of Korea	****************	
Mailing Address	Samsung Advanced Institute of Technology, 12 Gyeonggi-do, 16678, Republic of Korea	30 Samsu	ng-ro, Youngtong-gu, Suwon-si,
,		************	
Inventor's Legal Name	Deoksang KIM		
Inventor's Signature	अक्षर	Date	2017, 7, 20
Residence (City, Country)	Hwaseong-si, Republic of Korea		
Mailing Address	Samsung Advanced Institute of Technology, 130 Samsung-ro, Youngtong-gu, Suwon-si, Gyeonggi-do, 16678, Republic of Korea		
<i></i>	·		
Inventor's Legal Name	Dae-Kyu SHIN		
Inventor's Signature		Date	
Residence (City, Country)	Suwon-si, Republic of Korea		
Mailing Address	Samsung Advanced Institute of Technology, 130 Samsung-ro, Youngtong-gu, Suwon-si, Gyeonggi-do, 16678, Republic of Korea		
Income Lengt Norme	Brownia VIV		
Inventor's Legal Name	Byungin YOO		
Inventor's Signature		Date	November 16, 2017
Residence (City, Country)	Seoul, Republic of Korea		
Mailing Address	Samsung Advanced Institute of Technology, 130 Samsung-ro, Youngtong-gu, Suwen-si, Gyeonggi-do, 16678, Republic of Korea		

Page 2 of 3

Attorney Docket No. 012052.1498 SAIT's Ref.: RN-201703-010-1-US0

COMBINED DECLARATION AND ASSIGNMENT UNDER 37 CFR 1.63(e)

Inventor's Legal Name	Seungju HAN		
Inventor's Signature		Date	November 16, 2017
Residence (City, Country)	Seoul, Republic of Korea		
Mailing Address	Samsung Advanced Institute of Technology, 130 Samsung-ro, Youngtong-gu, Suwon-si, Gyeonggi-do, 16678, Republic of Korea		

Inventor's Legal Name	Jaejoon HAN		
Inventor's Signature	9475	Date	November 16, 2017
Residence (City, Country)	Secui, Republic of Korea Samsung Advanced Institute of Technology, 130 Samsung-ro, Youngtong-gu, Suwon-si, Gyeonggi-do, 16678, Republic of Korea		
Mailing Address			

Inventor's Legal Name	Jinwoo SON		
Inventor's Signature			November 16, 2017
Residence (City, Country)			
Mailing Address	Samsung Advanced Institute of Technology, 130 Samsung-ro, Youngtong-gu, Suwon-si, Gyeonggi-do, 16678, Republic of Korea		

Inventor's Legal Name	Chang Kyu CHOI		
Inventor's Signature		Date	November 16, 2017
Residence (City, Country)	Seongnam-si, Republic of Korea Samsung Advanced Institute of Technology, 130 Samsung-ro, Youngtorig-gu, Suwon-si, Gyeonggi-do, 16678, Republic of Korea		
Mailing Address			ung-ro, Youngtong-gu, Suwon-si,

Attorney Docket No. 012052,1498 SAIT's Ref.: RN-201703-010-1-US0

COMBINED DECLARATION AND ASSIGNMENT UNDER 37 CFR 1.63(e)

DECLARATION

As a below-named inventor, I hereby declare that this declar	aration is directed to the application attached hereto
or to United States Application Number or PCT International	al Application Number
filed on	(if applicable), entitled:
FACE VERIFICATION METH	OD AND APPARATUS

The above-identified application was made or authorized to be made by me.

I believe I am the original inventor or an original joint inventor of a claimed invention in the above-identified application.

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

I have reviewed and understand the contents of the above-identified application, including the claims.

I am aware of the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information that became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

ASSIGNMENT

For valuable consideration, I, as a below-named assignor, hereby assign to:

Samsung Electronics Co., Ltd. 129, Samsung-ro, Yeongtong-gu Suwon-si, Gyeonggi-do, 16677 Republic of Korea

and its successors and assigns (collectively hereinafter called "the Assignee"), the entire right, title, and interest throughout the world in the inventions and improvements that are the subject of the application identified in the above declaration, which is United States Application Number or PCT international Application Number 15/833,292 filed on December 6, 2017

I authorize and request the attorneys appointed in the above-identified application to hereafter complete this Assignment by inserting above the application number and the filing date of the above-identified application when known, and to correct any typographical errors that may be discovered in this Assignment.

This Assignment includes the above-identified application, any and all United States and foreign patents, utility models, and design registrations granted for any of the inventions and improvements that are the subject of the above-identified application, and the right to claim priority based on the filing date of the above-identified application under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes; and I authorize the Assignee to apply in all countries in my name or in its own name for patents, utility models, design registrations, like rights of exclusion, and inventors' certificates for any of the inventions and improvements that are the subject of the above-identified application; and I agree for myself and my heirs, legal representatives, and assigns without further compensation to perform such lawful acts and to sign such further applications, Assignments, preliminary statements, and other lawful documents as the Assignee may reasonably request to effectuate fully this Assignment.

Page 1 of 3

Attorney Docket No. 012052.1498 SAIT's Ref.: RN-201703-010-1-US0

COMBINED DECLARATION AND ASSIGNMENT UNDER 37 CFR 1.63(e)

In witness whereof, I, as a below-named inventor and assignor, intending to be legally bound, have hereunto affixed my signature on the date indicated below next to my signature.

Inventor's Legal Name	Changyong SON		
Inventor's Signature		Date	
Residence (City, Country)	Anyang-si, Republic of Korea	<i></i>	
Mailing Address	Samsung Advanced Institute of Technology, 130 Samsung-rc, Youngtong-gu, Suwon-si, Gyeonggi-do, 16678, Republic of Korea		

Inventor's Legal Name	Wonsuk CHANG	.,	
Inventor's Signature	Wonsuk CHANG	Date	Nov. 15, 2017
Residence (City, Country)	Hwaseong-si, Republic of Korea	d n.n. 120.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.	
Mailing Address	Samsung Advanced Institute of Technology, 130 Samsung-ro, Youngtong-gu, Suwon-si, Gyeonggi-do, 16678, Republic of Korea		
Inventor's Legal Name	Deoksang KIM		
Inventor's Signature		Date	
Residence (City, Country)	Hwaseong-si, Republic of Korea		
Mailing Address	Samsung Advanced Institute of Technology, 130 Samsung-ro, Youngtong-gu, Suwon-si, Gyeonggi-do, 18678, Republic of Korea		
	.,		
Inventor's Legal Name	Dae-Kyu SHIN		
Inventor's Signature	DHE-KYU SHIN	Date	Nov. 15 2019
Residence (City, Country)	Suwon-ei, Republic of Korea		
Mailing Address	Samsung Advanced Institute of Technology, 130 Samsung-ro, Youngtong-gu, Suwon-si, Gyeonggi-do, 18678, Republic of Korea		
inventor's Legal Name	syungin YOO	<u> </u>	
Inventor's Signature		Date	
Residence (City, Country)	Seoul, Republic of Korea		
Mailing Address	Samsung Advanced Institute of Technology, 130 Samsung-ro, Youngtong-gu, Suwon-si, Gyeonggi-do, 16678, Republic of Korea		
Superior's Legal Name Dae-Kyu SHIN Date Date			

Page 2 of 3

Attorney Docket No. 012052,1498 SAIT's Ref.: RN-201703-010-1-US0

COMBINED DECLARATION AND ASSIGNMENT UNDER 37 CFR 1.63(e)

inventor's Legal Name	Seungju HAN		
Inventor's Signature	Date		
Residence (City, Country)	Secul, Republic of Korea		
Mailing Address	Samsung Advanced Institute of Technology, 130 Samsung-ro, Youngtong-gu, Suwon-si, Gyeonggi-do, 16678, Republic of Korea		
Inventor's Legal Name	Jaejoon HAN		
Inventor's Signature	Date		
Residence (City, Country)	Secul, Republic of Korea		
Mailing Address	Samsung Advanced Institute of Technology, 130 Samsung-ro, Youngtong-gu, Suwon-si, Gyeonggi-do, 16678, Republic of Korea		
Inventor's Legal Name	Jinwoo SON		
Inventor's Signature	Date		
Residence (City, Country)	Seoul, Republic of Korea		
Mailing Address	Samsung Advanced Institute of Technology, 130 Samsung-ro, Youngtong-gu, Suwon-si, Gyeonggi-do, 16678, Republic of Korea		
Inventor's Legal Name	Chang Kyu CHOI		
Inventor's Signature	Date		
Residence (City, Country)	Seongnam-si, Republic of Korca		
Mailing Address	Samsung Advanced institute of Technology, 130 Samsung-ro, Youngtong-gu, Suwori-si, Gyeonggi-do, 16678, Republic of Korea		

Page 3 of 3