504915634 05/15/2018

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4962379

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
DAVID C. GRAHAM	04/17/2018
TAYLOR G. CARRIGAN	04/17/2018
NICHOLAS J. PAULSON	03/21/2018
JOHANNES P. SCHMIDT	03/21/2018
THOMAS ALSINA	03/20/2018
BOB BRADLEY	04/01/2018
HAISHAN YE	03/21/2018
JAMES C. GRANDY	03/21/2018
PIERRE DE LASTIC	03/21/2018
JULIEN LEROUGE	03/30/2018

RECEIVING PARTY DATA

Name:	APPLE INC.
Street Address:	ONE APPLE PARK WAY
City:	CUPERTINO
State/Country:	CALIFORNIA
Postal Code:	94014

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15970622

CORRESPONDENCE DATA

Fax Number:

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: 408-664-6475

Email: Tamara@invokeip.com
Correspondent Name: TAMARA RUEDA

Address Line 1: 84 W. SANTA CLARA STREET, SUITE 500

Address Line 4: SAN JOSE, CALIFORNIA 95113

ATTORNEY DOCKET NUMBER: A00127N2

PATENT REEL: 046159 FRAME: 0001

504915634

NAME OF SUBMITTER:	TAMARA RUEDA
SIGNATURE:	/Tamara Rueda/
DATE SIGNED:	05/15/2018

Total Attachments: 30

source=P34470US2 ASSIGNMENTS A00127N2#page1.tif source=P34470US2 ASSIGNMENTS A00127N2#page2.tif source=P34470US2 ASSIGNMENTS A00127N2#page3.tif source=P34470US2 ASSIGNMENTS A00127N2#page4.tif source=P34470US2 ASSIGNMENTS A00127N2#page5.tif source=P34470US2 ASSIGNMENTS A00127N2#page6.tif source=P34470US2 ASSIGNMENTS A00127N2#page7.tif source=P34470US2 ASSIGNMENTS A00127N2#page8.tif source=P34470US2 ASSIGNMENTS A00127N2#page9.tif source=P34470US2 ASSIGNMENTS A00127N2#page10.tif source=P34470US2_ASSIGNMENTS_A00127N2#page11.tif source=P34470US2 ASSIGNMENTS A00127N2#page12.tif source=P34470US2 ASSIGNMENTS A00127N2#page13.tif source=P34470US2 ASSIGNMENTS A00127N2#page14.tif source=P34470US2 ASSIGNMENTS A00127N2#page15.tif source=P34470US2 ASSIGNMENTS A00127N2#page16.tif source=P34470US2 ASSIGNMENTS A00127N2#page17.tif source=P34470US2 ASSIGNMENTS A00127N2#page18.tif source=P34470US2_ASSIGNMENTS_A00127N2#page19.tif source=P34470US2 ASSIGNMENTS A00127N2#page20.tif source=P34470US2 ASSIGNMENTS A00127N2#page21.tif source=P34470US2 ASSIGNMENTS A00127N2#page22.tif source=P34470US2 ASSIGNMENTS A00127N2#page23.tif source=P34470US2 ASSIGNMENTS A00127N2#page24.tif source=P34470US2 ASSIGNMENTS A00127N2#page25.tif source=P34470US2 ASSIGNMENTS A00127N2#page26.tif source=P34470US2 ASSIGNMENTS A00127N2#page27.tif source=P34470US2 ASSIGNMENTS A00127N2#page28.tif source=P34470US2_ASSIGNMENTS_A00127N2#page29.tif source=P34470US2 ASSIGNMENTS A00127N2#page30.tif

> PATENT REEL: 046159 FRAME: 0002

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the undersigned individual(s) (referred to herein as the "INVENTOR(S)") hereby assign, transfer, and set over to:

Apple Inc.

having the following address:

One Apple Park Way
Cupertino, California, 94014

(referred to herein as "COMPANY"), its successors, and assigns, the entire right, title, and interest, worldwide, in and to the invention known by the following title:

Credential Delegation

for which the undersigned has/have executed an application for patent in the United States of America on or about this same day, together with said patent application, all corresponding provisionals, all divisionals, continuations, continuations-in-part, reissues, and extensions thereof, and all Letters Patent (domestic and foreign) which may be granted therefor. Such interest represents the entire ownership of said applications and Letters Patent when granted and is to be owned by COMPANY, its successors, and assigns, or their legal representatives, for the full and entire term for which such Letters Patent may be granted or extended, as fully and entirely as the same would have been enjoyed by the INVENTOR(S) if this assignment had not been made.

In addition, the undersigned INVENTOR(S) each hereby agrees:

- 1. To sign and execute any further documents which may be necessary or desirable, lawful, and proper in connection with the prosecution of all applications for patent(s) on the INVENTION in the United States, including without limitation said application and all divisions, continuations, continuations-in-part, amendments thereof, and all interference proceedings associated therewith, or otherwise necessary or desirable to secure the title thereto to COMPANY;
- 2. To execute all papers and documents and to perform all lawful acts which may be necessary in connection with claims to priority or otherwise under the International Convention for the Protection of Industrial Property or similar treaties or agreements;
- 3. To perform all lawful affirmative acts which may be necessary to obtain the grant of a valid and enforceable patent to COMPANY.

The undersigned INVENTOR(S) each hereby authorizes and requests the Commissioner of Patents and Trademarks in the United States to issue any and all Letters Patent resulting from said application, including without limitation any division, continuation, continuation-in-part, or reissue thereof to COMPANY.

The undersigned INVENTOR(S) each hereby grant to the COMPANY the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for the recordation of this document.

Attorney Docket No. P34470US2 | A00127N2

IN WITNESS WHEREOF, this Assignment has been executed by each of the undersigned individuals on the date appearing by such individual's signature: $\frac{1}{2}$

	1 st Inventor Signature:	
Date	Print or Type Name:	David C. Graham
Date	2 nd Inventor Signature:	
	Print or Type Name:	Taylor G. Carrigan
Date	3 rd Inventor Signature:	
Date	Print or Type Name:	Nicholas J. Paulson
	4 th Inventor Signature:	
Date	Print or Type Name:	Johannes P. Schmidt
3/20/2018	5 th Inventor Signature:	V Alam
Date	Print or Type Name:	Thomas Alsina
	6 th Inventor Signature:	
Date	Print or Type Name:	Bob Bradley
Date	7 th Inventor Signature:	
	Print or Type Name:	Haishan Ye
	8 th Inventor Signature:	
Date	Print or Type Name:	James C. Grandy

	9th Inventor Signature:	
Date	Print or Type Name:	Pierre de Lastic
	10 th Inventor Signature:	
Date	Print or Type Name:	Julien Lerouge

U.S. Patent Application Serial No.: 15/970,622

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the undersigned individual(s) (referred to herein as the "INVENTOR(S)") hereby assign, transfer, and set over to:

Apple Inc.

having the following address:

One Apple Park Way
Cupertino, California, 95014

(referred to herein as "COMPANY"), its successors, and assigns, the entire right, title, and interest, worldwide, in and to the invention known by the following title:

Credential Delegation

for which the undersigned has/have executed an application for patent in the United States of America on or about this same day, together with said patent application, all corresponding provisionals, all divisionals, continuations, continuations-in-part, reissues, and extensions thereof, and all Letters Patent (domestic and foreign) which may be granted therefor. Such interest represents the entire ownership of said applications and Letters Patent when granted and is to be owned by COMPANY, its successors, and assigns, or their legal representatives, for the full and entire term for which such Letters Patent may be granted or extended, as fully and entirely as the same would have been enjoyed by the INVENTOR(S) if this assignment had not been made.

In addition, the undersigned INVENTOR(S) each hereby agrees:

- 1. To sign and execute any further documents which may be necessary or desirable, lawful, and proper in connection with the prosecution of all applications for patent(s) on the INVENTION in the United States, including without limitation said application and all divisions, continuations, continuations-in-part, amendments thereof, and all interference proceedings associated therewith, or otherwise necessary or desirable to secure the title thereto to COMPANY;
- 2. To execute all papers and documents and to perform all lawful acts which may be necessary in connection with claims to priority or otherwise under the International Convention for the Protection of Industrial Property or similar treaties or agreements;
- 3. To perform all lawful affirmative acts which may be necessary to obtain the grant of a valid and enforceable patent to COMPANY.

The undersigned INVENTOR(S) each hereby authorizes and requests the Commissioner of Patents and Trademarks in the United States to issue any and all Letters Patent resulting from said application, including without limitation any division, continuation, continuation-in-part, or reissue thereof to COMPANY.

The undersigned INVENTOR(S) each hereby grant to the COMPANY the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for the recordation of this document.

Date	1° Inventor Signature:
_	Print or Type Name: David C. Graham
Date	2 nd Inventor Signature:
****	Print or Type Nume: Invite G. Caragan
Date	2° Inventor Signature:
• • • • • • • • • • • • • • • • • • •	Print or Type Name: Nadiobas J. Paulium
Date	4° Inventor Signature:
(rest	Print or Type Name: Johnson P. Schmidt
Date	5° Inventor Signature.
	Print or Type Name: Thomas Albani
Date	6° Investor Segustates III IIIII
	Printer Type Name: Refritenies
Date	Thrento Signature
	Print or Type Same: 18 of the Ye
liste	S ^o Investor Signature
	Practice Dye Source Service County

	9th Inventor Signature:	
Date	Print or Type Name:	Pierre de Lastic
	10 th Inventor Signature:	
Date	Print or Type Name:	Julien Lerouge

U.S. Patent Application Serial No.: 15/970,622

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the undersigned individual(s) (referred to herein as the "INVENTOR(S)") hereby assign, transfer, and set over to:

Apple Inc.

having the following address:

One Apple Park Way
Cupertino, California, 95014

(referred to herein as "COMPANY"), its successors, and assigns, the entire right, title, and interest, worldwide, in and to the invention known by the following title:

Credential Delegation

for which the undersigned has/have executed an application for patent in the United States of America on or about this same day, together with said patent application, all corresponding provisionals, all divisionals, continuations, continuations-in-part, reissues, and extensions thereof, and all Letters Patent (domestic and foreign) which may be granted therefor. Such interest represents the entire ownership of said applications and Letters Patent when granted and is to be owned by COMPANY, its successors, and assigns, or their legal representatives, for the full and entire term for which such Letters Patent may be granted or extended, as fully and entirely as the same would have been enjoyed by the INVENTOR(S) if this assignment had not been made.

In addition, the undersigned INVENTOR(S) each hereby agrees:

- To sign and execute any further documents which may be necessary or desirable, lawful, and proper in connection with the prosecution of all applications for patent(s) on the INVENTION in the United States, including without limitation said application and all divisions, continuations, continuations-in-part, amendments thereof, and all interference proceedings associated therewith, or otherwise necessary or desirable to secure the title thereto to COMPANY;
- To execute all papers and documents and to perform all lawful acts which may be necessary in connection with claims to priority or otherwise under the International Convention for the Protection of Industrial Property or similar treaties or agreements;
- 3. To perform all lawful affirmative acts which may be necessary to obtain the grant of a valid and enforceable patent to COMPANY.

The undersigned INVENTOR(S) each hereby authorizes and requests the Commissioner of Patents and Trademarks in the United States to issue any and all Letters Patent resulting from said application, including without limitation any division, continuation, continuation-in-part, or reissue thereof to COMPANY.

The undersigned INVENTOR(S) each hereby grant to the COMPANY the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for the recordation of this document.

IN WITNESS WHEREOF, this Assignment has been executed by each of the undersigned individuals on the date appearing by such individual's signature:

	1 st Inventor Signature:	
Date	Print or Type Name:	David C. Graham
4/17/2018 Date	2 nd Inventor Signature: Print or Type Name:	
Date	3 rd Inventor Signature:	
	Print or Type Name:	Nicholas J. Paulson
Date	4 th Inventor Signature:	
	Print or Type Name:	Johannes P. Schmidt
Date	5 th Inventor Signature:	
	Print or Type Name:	Thomas Alsina
Date	6 th Inventor Signature:	
240	Print or Type Name:	Bob Bradley
Date	7 th Inventor Signature:	
	Print or Type Name:	Haishan Ye
Date	8 th Inventor Signature:	
	Print or Type Name: _	James C. Grandy

REEL: 046159 FRAME: 0010

	9 th Inventor Signature:	
Date	Print or Type Name:	Pierre de Lastic
	10 th Inventor Signature:	
Date	Print or Type Name:	Julien Lerouge

U.S. Patent Application Serial No.: 15/970,622

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the undersigned individual(s) (referred to herein as the "INVENTOR(S)") hereby assign, transfer, and set over to:

Apple Inc.

having the following address:

One Apple Park Way
Cupertino, California, 94014

(referred to herein as "COMPANY"), its successors, and assigns, the entire right, title, and interest, worldwide, in and to the invention known by the following title:

Credential Delegation

for which the undersigned has/have executed an application for patent in the United States of America on or about this same day, together with said patent application, all corresponding provisionals, all divisionals, continuations, continuations-in-part, reissues, and extensions thereof, and all Letters Patent (domestic and foreign) which may be granted therefor. Such interest represents the entire ownership of said applications and Letters Patent when granted and is to be owned by COMPANY, its successors, and assigns, or their legal representatives, for the full and entire term for which such Letters Patent may be granted or extended, as fully and entirely as the same would have been enjoyed by the INVENTOR(S) if this assignment had not been made.

In addition, the undersigned INVENTOR(S) each hereby agrees:

- 1. To sign and execute any further documents which may be necessary or desirable, lawful, and proper in connection with the prosecution of all applications for patent(s) on the INVENTION in the United States, including without limitation said application and all divisions, continuations, continuations-in-part, amendments thereof, and all interference proceedings associated therewith, or otherwise necessary or desirable to secure the title thereto to COMPANY;
- To execute all papers and documents and to perform all lawful acts which may be necessary in connection with claims to priority or otherwise under the International Convention for the Protection of Industrial Property or similar treaties or agreements;
- 3. To perform all lawful affirmative acts which may be necessary to obtain the grant of a valid and enforceable patent to COMPANY.

The undersigned INVENTOR(S) each hereby authorizes and requests the Commissioner of Patents and Trademarks in the United States to issue any and all Letters Patent resulting from said application, including without limitation any division, continuation, continuation-in-part, or reissue thereof to COMPANY.

The undersigned INVENTOR(S) each hereby grant to the COMPANY the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for the recordation of this document.

Attorney Docket No. P34470US2 | A00127N2

IN WITNESS WHEREOF, this Assignment has been executed by each of the undersigned individuals on the date appearing by such individual's signature: $\frac{1}{2}$

	1 st Inventor Signature:	
Date	Print or Type Name:	David C. Graham
Date	2 nd Inventor Signature:	
Ziiie	Print or Type Name:	Taylor G. Carrigan
Date	3 rd Inventor Signature:	
Date	Print or Type Name:	Nicholas J. Paulson
Data	4 th Inventor Signature:	
Date	Print or Type Name:	Johannes P. Schmidt
Date	5 th Inventor Signature:	
Date	Print or Type Name:	Thomas Alsina
Date	6 th Inventor Signature:	
Date	Print or Type Name:	Bob Bradley
Date	7 th Inventor Signature:	
	Print or Type Name:	Haishan Ye
Date	8 th Inventor Signature:	
Date	Print or Type Name:	James C. Grandy

03/21/2018	9 th Inventor Signature:	MSAZ
Date	Print or Type Name:	Pierre de Lastic
	10 th Inventor Signature:	
Date	Print or Type Name:	Julien Lerouge

U.S. Patent Application Serial No.: 15/970,622

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the undersigned individual(s) (referred to herein as the "JNVENTOR(S)") hereby assign, transfer, and set over to:4Agple Inc.

having the following address:

One Apple Park Wav Cupertino. California. 95014

(referred to herein as 'COMPANY"), its successors, and assigns, the entire right, title, and interest worldwide, in and to the invention known by the following title:

Credential Delegation

for which the undersigned has/have executed an application for patent in the United States of America on or about this same day, together with said patent application, all corresponding provisionals, all divisionals, continuations, continuations-in-part, reissues, and e,,,tensions thereof, and all Letters Patent (domestic and foreign) which may be granted therefor. Such interest represents the entire ownership of said applications and Letters Patent when granted and is to be O\med by COMPANY, its successors, and assigns, or their legal representatives, for the full and entire term for which such Letters Patent may be granted or e,,,lended, as fully and entirely as the sanle would have been enjoyed by the INVENTOR(S) if this assignment had not been made.

In addition, the undersigned INVENTOR(S) each hereby agrees:

- I. To sign and execute any further documents which may be necessary or desirable, lawful, and proper in connection with the prosecution of all applications for patent(s) on the INVENTION in the United States, including without limitation said application and all divisions, continuations, continuations-in-part, amendments thereof, and all interference proceedings associated therewith, or otherwise necessary or desirable to secure the title thereto to COMPANY:
- 2. To execute all papers and docuntents and to perform all lawful acts which may be necessary in connection with claims to priority or otherwise under the International Convention for the Protection of Industrial Property or similar treaties or agreements;
- 3. To perform all lawful affirmative acts which may be necessary to obtain the grant of a valid and enforceable patent to COMPANY.

The undersigned INVENTOR(S) each hereby authorizes and requests dlc Commissioner of Patents and Trademarks in the United States to issue any and all Letters Patent resulting from said application, including without limitation any division, continuation, continuation-in-part or reissue thereof to COMPANY.

The undersigned INVENTOR(S) each hereby grant to the COMPANY the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for the recordation of this document.

Attorney Docket No. P34470US2 IA00127N2

Page 11of2

IN WITNESS WHEREOF, this Assignment has been executed by each of the undersigned individuals on the date appearing by such individual's signature: 1st Inventor Signature: Print or Type Name: _David C. Graham 2nd Inventor Signature: _____ Date Print or Type Name: Taylor G. Carrigan 3rd Inventor Signature: Date Print or Type Name: Nicholas J. Paulson 4th Inventor Signature: _____ Date Print or Type Name: Johannes P. Schmidt 5th Inventor Signature: Date Print or Type Name: Thomas Alsina 6th Inventor Signature: Date Print or Type Name: Bob Bradley 7th Inventor Signature: Date Print or Type Name: Haishan Ye 8th Inventor Signature: **Date**

Print or Type Name: James C. Grandy

REEL: 046159 FRAME: 0016

	9 th Inventor Signature:	
Date	Print or Type Name:	Pierre de Lastic
	10 th Inventor Signature:	
Date	Print or Type Name:	Julien Lerouge

U.S. Patent Application Serial No.: 15/970,622

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the undersigned individual(s) (referred to herein as the "INVENTOR(S)") hereby assign, transfer, and set over to:

Apple Inc.

having the following address:

One Apple Park Way
Cupertino, California, 94014

(referred to herein as "COMPANY"), its successors, and assigns, the entire right, title, and interest, worldwide, in and to the invention known by the following title:

Credential Delegation

for which the undersigned has/have executed an application for patent in the United States of America on or about this same day, together with said patent application, all corresponding provisionals, all divisionals, continuations, continuations-in-part, reissues, and extensions thereof, and all Letters Patent (domestic and foreign) which may be granted therefor. Such interest represents the entire ownership of said applications and Letters Patent when granted and is to be owned by COMPANY, its successors, and assigns, or their legal representatives, for the full and entire term for which such Letters Patent may be granted or extended, as fully and entirely as the same would have been enjoyed by the INVENTOR(S) if this assignment had not been made.

In addition, the undersigned INVENTOR(S) each hereby agrees:

- 1. To sign and execute any further documents which may be necessary or desirable, lawful, and proper in connection with the prosecution of all applications for patent(s) on the INVENTION in the United States, including without limitation said application and all divisions, continuations, continuations-in-part, amendments thereof, and all interference proceedings associated therewith, or otherwise necessary or desirable to secure the title thereto to COMPANY;
- 2. To execute all papers and documents and to perform all lawful acts which may be necessary in connection with claims to priority or otherwise under the International Convention for the Protection of Industrial Property or similar treaties or agreements;
- 3. To perform all lawful affirmative acts which may be necessary to obtain the grant of a valid and enforceable patent to COMPANY.

The undersigned INVENTOR(S) each hereby authorizes and requests the Commissioner of Patents and Trademarks in the United States to issue any and all Letters Patent resulting from said application, including without limitation any division, continuation, continuation-in-part, or reissue thereof to COMPANY.

The undersigned INVENTOR(S) each hereby grant to the COMPANY the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for the recordation of this document.

Attorney Docket No. P34470US2 | A00127N2

IN WITNESS WHEREOF, this Assignment has been executed by each of the undersigned individuals on the date appearing by such individual's signature: $\frac{1}{2}$

	1 st Inventor Signature:	
Date	Print or Type Name:	David C. Graham
 Date	2 nd Inventor Signature:	
	Print or Type Name:	Taylor G. Carrigan
Date	3 rd Inventor Signature:	
Date	Print or Type Name:	Nicholas J. Paulson
	4 th Inventor Signature:	
Date	Print or Type Name:	Johannes P. Schmidt
Date	5 th Inventor Signature:	
	Print or Type Name:	Thomas Alsina
Date	6 th Inventor Signature:	
	Print or Type Name:	Bob Bradley
Date	7 th Inventor Signature:	
	Print or Type Name:	Haishan Ye
3/21/2018	8 th Inventor Signature:	
Date	Print or Type Name:	James C. Grandy

	9th Inventor Signature:	
Date	Print or Type Name:	Pierre de Lastic
	10th Inventor Signature:	
Date		
	Print or Type Name	Julien Lerouge

U.S. Patent Application Serial No.: 15/970,622

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the undersigned individual(s) (referred to herein as the "INVENTOR(S)") hereby assign, transfer, and set over to:

Apple Inc.

having the following address:

One Apple Park Way
Cupertino, California, 94014

(referred to herein as "COMPANY"), its successors, and assigns, the entire right, title, and interest, worldwide, in and to the invention known by the following title:

Credential Delegation

for which the undersigned has/have executed an application for patent in the United States of America on or about this same day, together with said patent application, all corresponding provisionals, all divisionals, continuations, continuations-in-part, reissues, and extensions thereof, and all Letters Patent (domestic and foreign) which may be granted therefor. Such interest represents the entire ownership of said applications and Letters Patent when granted and is to be owned by COMPANY, its successors, and assigns, or their legal representatives, for the full and entire term for which such Letters Patent may be granted or extended, as fully and entirely as the same would have been enjoyed by the INVENTOR(S) if this assignment had not been made.

In addition, the undersigned INVENTOR(S) each hereby agrees:

- 1. To sign and execute any further documents which may be necessary or desirable, lawful, and proper in connection with the prosecution of all applications for patent(s) on the INVENTION in the United States, including without limitation said application and all divisions, continuations, continuations-in-part, amendments thereof, and all interference proceedings associated therewith, or otherwise necessary or desirable to secure the title thereto to COMPANY;
- 2. To execute all papers and documents and to perform all lawful acts which may be necessary in connection with claims to priority or otherwise under the International Convention for the Protection of Industrial Property or similar treaties or agreements;
- 3. To perform all lawful affirmative acts which may be necessary to obtain the grant of a valid and enforceable patent to COMPANY.

The undersigned INVENTOR(S) each hereby authorizes and requests the Commissioner of Patents and Trademarks in the United States to issue any and all Letters Patent resulting from said application, including without limitation any division, continuation, continuation-in-part, or reissue thereof to COMPANY.

The undersigned INVENTOR(S) each hereby grant to the COMPANY the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for the recordation of this document.

In withers willitter, this Assignment has been executed by each of the undersigned individuals on the date appearing by such individual's signature:

693X	Date	Sarte.		32000	7	XX)),/Ax	55446	3-71 -2018 JS	: : : : : : : :		Casas	Parts	SSAR	70
Print or Type Name: James C. Grandy	8 th Impendor Signature:	instan Ye) ^{is} Inventor Signature:	Print or Type Name: Bob Bradity	8" Inreator Signatura:	Frint or Type Name: Thomas Akins	5 ^b Inventor Signature:	1 E	t ^a laventur Signature: <u>H</u>	Print or Type Name: Michodas J. Fanisan	3rd Inventor Signatures	Frish or Type Name: Taylor G. Carigon	2 ^{ct} Inventor Signature:	Print or Type Name: David C. Graham	to threatur Signature:

	9th Inventor Signature:	
Date	Print or Type Name:	Pierre de Lastic
	10 th Inventor Signature:	
Date	Print or Type Name:	Julien Lerouge

U.S. Patent Application Serial No.: 15/970,622

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the undersigned individual(s) (referred to herein as the "INVENTOR(S)") hereby assign, transfer, and set over to:

Apple Inc.

having the following address:

One Apple Park Way
Cupertino, California, 94014

(referred to herein as "COMPANY"), its successors, and assigns, the entire right, title, and interest, worldwide, in and to the invention known by the following title:

Credential Delegation

for which the undersigned has/have executed an application for patent in the United States of America on or about this same day, together with said patent application, all corresponding provisionals, all divisionals, continuations, continuations-in-part, reissues, and extensions thereof, and all Letters Patent (domestic and foreign) which may be granted therefor. Such interest represents the entire ownership of said applications and Letters Patent when granted and is to be owned by COMPANY, its successors, and assigns, or their legal representatives, for the full and entire term for which such Letters Patent may be granted or extended, as fully and entirely as the same would have been enjoyed by the INVENTOR(S) if this assignment had not been made.

In addition, the undersigned INVENTOR(S) each hereby agrees:

- 1. To sign and execute any further documents which may be necessary or desirable, lawful, and proper in connection with the prosecution of all applications for patent(s) on the INVENTION in the United States, including without limitation said application and all divisions, continuations, continuations-in-part, amendments thereof, and all interference proceedings associated therewith, or otherwise necessary or desirable to secure the title thereto to COMPANY;
- To execute all papers and documents and to perform all lawful acts which may be necessary in connection with claims to priority or otherwise under the International Convention for the Protection of Industrial Property or similar treaties or agreements;
- 3. To perform all lawful affirmative acts which may be necessary to obtain the grant of a valid and enforceable patent to COMPANY.

The undersigned INVENTOR(S) each hereby authorizes and requests the Commissioner of Patents and Trademarks in the United States to issue any and all Letters Patent resulting from said application, including without limitation any division, continuation, continuation-in-part, or reissue thereof to COMPANY.

The undersigned INVENTOR(S) each hereby grant to the COMPANY the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for the recordation of this document.

Attorney Docket No. P34470US2 | A00127N2 | Page | 1 of 3

IN WITNESS WHEREOF, this Assignment has been executed by each of the undersigned individuals on the date appearing by such individual's signature: $\frac{1}{2}$

	1 st Inventor Signature:	
Date	Print or Type Name:	David C. Graham
Date	2 nd Inventor Signature:	
Ziiie	Print or Type Name:	Taylor G. Carrigan
Date	3 rd Inventor Signature:	
Date	Print or Type Name:	Nicholas J. Paulson
Data	4 th Inventor Signature:	
Date	Print or Type Name:	Johannes P. Schmidt
Date	5 th Inventor Signature:	
Bate	Print or Type Name:	Thomas Alsina
Date	6 th Inventor Signature:	
Date	Print or Type Name:	Bob Bradley
Date	7 th Inventor Signature:	
	Print or Type Name:	Haishan Ye
Date	8 th Inventor Signature:	
Date	Print or Type Name:	James C. Grandy

	9th Inventor Signature:	
Date	Print or Type Name:	Pierre de Lastic
3/30/2018	10th Inventor Signature:	
Date		
	Print or Type Name:	Julien Lerouge

U.S. Patent Application Serial No.: 15/970,622

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the undersigned individual(s) (referred to herein as the "INVENTOR(S)") hereby assign, transfer, and set over to:

Apple Inc.

having the following address:

One Apple Park Way
Cupertino, California, 94014

(referred to herein as "COMPANY"), its successors, and assigns, the entire right, title, and interest, worldwide, in and to the invention known by the following title:

Credential Delegation

for which the undersigned has/have executed an application for patent in the United States of America on or about this same day, together with said patent application, all corresponding provisionals, all divisionals, continuations, continuations-in-part, reissues, and extensions thereof, and all Letters Patent (domestic and foreign) which may be granted therefor. Such interest represents the entire ownership of said applications and Letters Patent when granted and is to be owned by COMPANY, its successors, and assigns, or their legal representatives, for the full and entire term for which such Letters Patent may be granted or extended, as fully and entirely as the same would have been enjoyed by the INVENTOR(S) if this assignment had not been made.

In addition, the undersigned INVENTOR(S) each hereby agrees:

- 1. To sign and execute any further documents which may be necessary or desirable, lawful, and proper in connection with the prosecution of all applications for patent(s) on the INVENTION in the United States, including without limitation said application and all divisions, continuations, continuations-in-part, amendments thereof, and all interference proceedings associated therewith, or otherwise necessary or desirable to secure the title thereto to COMPANY;
- 2. To execute all papers and documents and to perform all lawful acts which may be necessary in connection with claims to priority or otherwise under the International Convention for the Protection of Industrial Property or similar treaties or agreements;
- 3. To perform all lawful affirmative acts which may be necessary to obtain the grant of a valid and enforceable patent to COMPANY.

The undersigned INVENTOR(S) each hereby authorizes and requests the Commissioner of Patents and Trademarks in the United States to issue any and all Letters Patent resulting from said application, including without limitation any division, continuation, continuation-in-part, or reissue thereof to COMPANY.

The undersigned INVENTOR(S) each hereby grant to the COMPANY the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for the recordation of this document.

Attorney Docket No. P34470US2 | A00127N2

IN WITNESS WHEREOF, this Assignment has been executed by each of the undersigned individuals on the date appearing by such individual's signature: $\frac{1}{2}$

	1 st Inventor Signature:	
Date	Print or Type Name:	David C. Graham
Date		Taylor G. Carrigan
March 21, 2018	Print or Type Name:	
Date	3 rd Inventor Signature: Print or Type Name:	Micholas J. Paulson
	4 th Inventor Signature:	
Date	Print or Type Name:	
Date	5 th Inventor Signature:	
2	Print or Type Name:	Thomas Alsina
Date		
	Print or Type Name:	
Date	7 th Inventor Signature: Print or Type Name:	Haishan Ye
	8 th Inventor Signature:	
Date	Print or Type Name:	

	9th Inventor Signature:	
Date	Print or Type Name:	Pierre de Lastic
	10 th Inventor Signature:	
Date	Print or Type Name:	Julien Lerouge

U.S. Patent Application Serial No.: 15/970,622

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the undersigned individual(s) (referred to herein as the "INVENTOR(S)") hereby assign, transfer, and set over to:

Apple Inc.

having the following address:

One Apple Park Way
Cupertino, California, 94014

(referred to herein as "COMPANY"), its successors, and assigns, the entire right, title, and interest, worldwide, in and to the invention known by the following title:

Credential Delegation

for which the undersigned has/have executed an application for patent in the United States of America on or about this same day, together with said patent application, all corresponding provisionals, all divisionals, continuations, continuations-in-part, reissues, and extensions thereof, and all Letters Patent (domestic and foreign) which may be granted therefor. Such interest represents the entire ownership of said applications and Letters Patent when granted and is to be owned by COMPANY, its successors, and assigns, or their legal representatives, for the full and entire term for which such Letters Patent may be granted or extended, as fully and entirely as the same would have been enjoyed by the INVENTOR(S) if this assignment had not been made.

In addition, the undersigned INVENTOR(S) each hereby agrees:

- 1. To sign and execute any further documents which may be necessary or desirable, lawful, and proper in connection with the prosecution of all applications for patent(s) on the INVENTION in the United States, including without limitation said application and all divisions, continuations, continuations-in-part, amendments thereof, and all interference proceedings associated therewith, or otherwise necessary or desirable to secure the title thereto to COMPANY;
- 2. To execute all papers and documents and to perform all lawful acts which may be necessary in connection with claims to priority or otherwise under the International Convention for the Protection of Industrial Property or similar treaties or agreements;
- 3. To perform all lawful affirmative acts which may be necessary to obtain the grant of a valid and enforceable patent to COMPANY.

The undersigned INVENTOR(S) each hereby authorizes and requests the Commissioner of Patents and Trademarks in the United States to issue any and all Letters Patent resulting from said application, including without limitation any division, continuation, continuation-in-part, or reissue thereof to COMPANY.

The undersigned INVENTOR(S) each hereby grant to the COMPANY the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for the recordation of this document.

Attorney Docket No. P34470US2 | A00127N2

IN WITNESS WHEREOF, this Assignment has been executed by each of the undersigned individuals on the date appearing by such individual's signature: $\frac{1}{2}$

	1 st Inventor Signature:	
Date	Print or Type Name:	David C. Graham
Date	2 nd Inventor Signature:	
	Print or Type Name:	Taylor G. Carrigan
Date	3 rd Inventor Signature:	
Date	Print or Type Name:	Nicholas J. Paulson
Date	4 th Inventor Signature:	
Date	Print or Type Name:	Johannes P. Schmidt
Date	5 th Inventor Signature:	
- 	Print or Type Name:	Thomas Alsina
Date	6 th Inventor Signature:	
Date	Print or Type Name:	Bob Bradley
03/21/2018	7 th Inventor Signature:	upton
Date	Print or Type Name:	•
	8 th Inventor Signature:	
Date	Print or Type Name:	James C. Grandy

	9th Inventor Signature:	
Date	Print or Type Name:	Pierre de Lastic
	10th Inventor Signature:	
Date		
	Print or Type Name	Julien Lerouge

U.S. Patent Application Serial No.: 15/970,622

Filing Date: 05/03/2018

Attorney Docket No. P34470US2 | A00127N2

RECORDED: 05/15/2018

Page | 3 of 3

PATENT REEL: 046159 FRAME: 0032