PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4472690

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
DAAN ANTON VAN DEN ENDE	12/04/2015
REINDER HAAKMA	12/01/2015
MARK THOMAS JOHNSON	06/19/2017
FREDERICK MARIA BOEKHORST	12/05/2015
MILICA KOVACEVIC MILIVOJEVIC	12/01/2015
FRANCISCUS JOHANNES GERARDUS HAKKENS	12/01/2015
ACHIM HILGERS	12/01/2015
CORNELIS PETRUS HENDRIKS	12/01/2015
RENE LEONARDUS JACOBUS MARIE UBACHS	12/02/2015
EDUARD GERARD MARIE PELSSERS	12/01/2015

RECEIVING PARTY DATA

Name:	KONINKLIJKE PHILIPS N.V.
Street Address:	HIGH TECH CAMPUS 5
City:	EINDHOVEN
State/Country:	NETHERLANDS
Postal Code:	5656 AE

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15536283

CORRESPONDENCE DATA

Fax Number: (914)495-9540

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: 914-495-9516

Email: jacqueline.andreu@philips.com

PHILIPS INTELLECTUAL PROPERTY & STANDARD Correspondent Name:

Address Line 1: **465 COLUMBUS AVENUE**

Address Line 2: **SUITE 340**

Address Line 4: VALHALLA, NEW YORK 10595

2015P01304WOUS ATTORNEY DOCKET NUMBER:

NAME OF CURNITTED.	IVVIE L TROUT
NAME OF SUBMITTER:	KYLE J. TROUT
SIGNATURE:	/Kyle J. Trout/
DATE SIGNED:	06/22/2017
Total Attachments: 18	
source=Assignments#page1.tif	
source=Assignments#page2.tif	
source=Assignments#page3.tif	
source=Assignments#page4.tif	
source=Assignments#page5.tif	
source=Assignments#page6.tif	
source=Assignments#page7.tif	
source=Assignments#page8.tif	
source=Assignments#page9.tif	
source=Assignments#page10.tif	
source=Assignments#page11.tif	
source=Assignments#page12.tif	
source=Assignments#page13.tif	
source=Assignments#page14.tif	
source=Assignments#page15.tif	
source=Assignments#page16.tif	
source=Assignments#page17.tif	
source=Assignments#page18.tif	

to

Date

Date

Date

Date

(print name here)

(print name here)

(print name here)

(print name here)

For good and valuable consideration, of which I/we acknowledge receipt, I/we as a below-named Assignor(s), hereby sell, and assign, and transfer the entire and exclusive right, title, and interest in the following to Koninklijke Philips N.V., having a place of business at High Tech Campus 5,5656 AE, Eindhoven, the Netherlands, its successors, assigns, and legal representatives, including any nominees (collectively "the Assignee") my/our invention for which an application:					
is executed concurrently herewith was executed by me/us on was filed on. , ha was filed on. 01 Dec 2015, having an Internat	wing a Serial No.				
and all rights in and to said application, and all of therewith, based thereon, or claiming priority the provisionals divisions, continuations, continuatio claim priority thereto, and the entire and exclusiv applications.	refrom including, but not limited to, any ns-in-part, re-examinations, reissues, an	and all provisionals, non- d extensions thereof, and the right t			
I/We authorize and request that the Patent Office any and all Letters Patent when granted, solely to legal representatives.	·	77			
I/We will provide my/our cooperation to enable the Assignee to enjoy the foregoing right, title, and interest to the fullest extent. Upon request at the expense of the Assignee, I/we agree to execute all papers, take all rightful oaths, testify in all legal proceedings including patent prosecution actions and infringement actions, and do all other such acts which may be necessary, desirable, or convenient for securing and maintaining patents on the foregoing invention or for perfecting title thereto in the Assignee.					
I/We certify that I/we have the full right to convey the above rights.					
2015/12/04 (sign name here)	De la				
Date (print name here)	Dasn Anton VAN DEN ENDE	, Assignor			
Date (print name here)	Reinder HAAKMA	, Assignor			
Date (print name here)	Mark Thomas JOHNSON	, Assignor			

Frederick Maria BOEKHORST

Franciscus Johannes Gerardus

HAKKENS

Achim HILGERS

Milica KOVACEVIC MILIVOJEVIC

PATENT REEL: 042784 FRAME: 0328

, Assignor

, Assignor

, Assignor

Date	998 99	e (print name here)	Cornelis Petrus HENDRIKS	, Assignor
Date		(print name here)	Rene Leonardus Jacobus Marie UBACHS	, Assignor
Date		(print name here)	Eduard Gerard Marie PELSSERS	, Assignor

and assign, and transfer a place of business at 1	er the entire and exclusive ri High Tech Campus 5,5656 A	re acknowledge receipt, I/we as a below-name ght, title, and interest in the following to Kon AE, Eindhoven, the Netherlands, its successonely "the Assignee") my/our invention for wh	inklijke Philips N.V., having rs, assigns, and legal
was filed on	ne/us on, hav	ving a Serial Noonal Application No. PCT/EP2015/078114,	
therewith, based there provisionals divisions,	on, or claiming priority there continuations, continuations	ner United States, foreign and international paterrom including, but not limited to, any and assin-part, re-examinations, reissues, and exterright, title, and interest in and to any and all	ll provisionals, non- nsions thereof, and the right to
	•	officials in the United States and in any and a the Assignee(s), for its sole use, and that of it	•
extent. Upon request legal proceedings incl	at the expense of the Assignuding patent prosecution act or convenient for securing an	the Assignee to enjoy the foregoing right, title, ee, I/we agree to execute all papers, take all raions and infringement actions, and do all other admaintaining patents on the foregoing inventor.	ightful oaths, testify in all er such acts which may be
I/We certify that I/we	have the full right to convey	the above rights.	
	(sign name here)		
Date	(print name here)	Daan Anton VAN DEN ENDE	, Assignor
Dec 1 2015 Date	(print name here)	Reinder HAAKMA	, Assignor
Date	(print name here)	Mark Thomas JOHNSON	, Assignor
Date	(print name here)	Frederick Maria BOEKHORST	, Assignor
Date	(print name here)	Milica KOVACEVIC MILIVOJEVIC	, Assignor
Date	(print name here)	Franciscus Johannes Gerardus	, Assignor

HAKKENS

(print name here)

Achim HILGERS

PATENT REEL: 042784 FRAME: 0330

Date	(print name here)	Cornelis Petrus HENDRIKS	, Assignor
Date	(print name here)	Rene Leonardus Jacobus Marie UBACHS	, Assignor
Date	(print name here)	Eduard Gerard Marie PELSSERS	, Assignor

U.S.A. Sole/Joint

ASSIGNMENT

For good and valuable consideration, of which I/we acknowledge receipt, I/we as a below-named Assignor(s), hereby sell,
and assign, and transfer the entire and exclusive right, title, and interest in the following to Koninklijke Philips N.V., having
a place of business at High Tech Campus 5,5656 AE, Eindhoven, the Netherlands, its successors, assigns, and legal
representatives, including any nominees (collectively "the Assignee") my/our invention for which an application:

	is e	xecuted co	oncurrently he	rewith			
	was	s executed	by me/us on	*************************			
	was	s filed on.		, having	a Serial No	e = ==================================	
\boxtimes	was	s filed on.	01 Dec 2015,	having an International	Application No. I	CT/EP2015/078114.	

and all rights in and to said application, and all other United States, foreign and international patent applications associated therewith, based thereon, or claiming priority therefrom including, but not limited to, any and all provisionals, non-provisionals divisions, continuations, continuations-in-part, re-examinations, reissues, and extensions thereof, and the right to claim priority thereto, and the entire and exclusive right, title, and interest in and to any and all patents granted on these applications.

I/We authorize and request that the Patent Office officials in the United States and in any and all foreign countries to issue any and all Letters Patent when granted, solely to the Assignee(s), for its sole use, and that of its successors, assigns, and legal representatives.

I/We will provide my/our cooperation to enable the Assignee to enjoy the foregoing right, title, and interest to the fullest extent. Upon request at the expense of the Assignee, I/we agree to execute all papers, take all rightful oaths, testify in all legal proceedings including patent prosecution actions and infringement actions, and do all other such acts which may be necessary, desirable, or convenient for securing and maintaining patents on the foregoing invention or for perfecting title thereto in the Assignee.

If We certify that I/we have the full right to convey the above rights.

	(sign name here)		
Date	(print name here)	Daan Anton VAN DEN ENDE	, Assignor
Date 10, /6/2.132	(print name here)	Reinder HAAKMA	Assignor
Date	(print name here)	Mark Thomas JOHNSON	, Assignor
Date	(print name here)	Frederick Maris BOEKHORST	Assignor
Date	(print name here)	Milica KOVACEVIC MILIVOJEVIC	, Assignor
Date	(print name here)	Franciscus Johannes Gerardus HAKKENS	, Assignor
Date	(print name here)	Achim HILGERS	, Assignor

Date

and assign, and transfer (he entire and exclusive rig th Tech Campus 5,5656 Al	acknowledge receipt, I/we as a below-name ht, title, and interest in the following to Koni E, Eindhoven, the Netherlands, its successors ly "the Assignee") my/our invention for whice	nklijke Philips N.V., having s, assigns, and legal
was filed on	ıs on, havi	ng a Serial No	····
therewith, based thereon, provisionals divisions, co	or claiming priority theref	or United States, foreign and international pate from including, but not limited to, any and all in-part, re-examinations, reissues, and exten right, title, and interest in and to any and all p	l provisionals, non- sions thereof, and the right to
-		ficials in the United States and in any and all se Assignee(s), for its sole use, and that of its	
extent. Upon request at t legal proceedings includi	he expense of the Assigned ng patent prosecution action	Assignee to enjoy the foregoing right, title, and a signee to execute all papers, take all rights and infringement actions, and do all othe significant patents on the foregoing inventions.	ghtful oaths, testify in all r such acts which may be
I/We certify that I/we have	ve the full right to convey t	the above rights.	
	(sign name here)		
Date	(print name here)	Daan Anton VAN DEN ENDE	3 Assignor
Date	(print name here)	Reinder HAAKMA	Assignor
Date 2-12-2015	(print name here)	Mark Thomas JOHNSON	, Assignor
Date	(print name here)	Frederick Maria BOEKHORST	, Assignor
Date	(print name here)	Milica KOVACEVIC MILIVOJEVIC	, Assignor

Franciscus Johannes Gerardus

HAKKENS

Achim HILGERS

(print name here)

(print name here)

, Assignor

Date	(print name bere)	Cornelis Petrus HENDRIKS	, Assignor
Date	(print name here)	Rene Leonardus Jacobus Marie UBACHS	, Assignor
Date	(print name here)	Eduard Gerard Marie PELSSERS	, Assignor

For good and valuable consideration, of which I/we acknowledge receipt, I/we as a below-named Assignor(s), hereby sell,

a place of busine	ss at High Tech Campus 5,5656	right, title, and interest in the following to Ke AE, Eindhoven, the Netherlands, its success ively "the Assignee") my/our invention for w	ors, assigns, and legal
was executed was filed on.		aving a Serial Notional Application No. PCT/EP2015/078114	
therewith, based provisionals divi	thereon, or claiming priority the sions, continuations,	ther United States, foreign and international perefrom including, but not limited to, any and ons-in-part, re-examinations, reissues, and extre right, title, and interest in and to any and al	all provisionals, non- ensions thereof, and the right to
	rs Patent when granted, solely to	officials in the United States and in any and the Assignee(s), for its sole use, and that of	
extent. Upon req legal proceedings necessary, desiral thereto in the Ass	uest at the expense of the Assig s including patent prosecution ac ble, or convenient for securing a	he Assignee to enjoy the foregoing right, title nee, I/we agree to execute all papers, take all ctions and infringement actions, and do all oth and maintaining patents on the foregoing inve	rightful oaths, testify in all ner such acts which may be
	(sign name here)		
Date	(print name here)	Dasn Anton VAN DEN ENDE	, Assignor
Date	(print name here)	Reinder HAAKMA	, Assignor
Date	(print name here)	Mark Thomas JOHNSON	, Assignor
Date 1.42.2015	(print name here)	Frederick Maria BOEKHORST Wicola Sovetta Mice	, Assignor
Date	(print name here)	Milica KOVACEVIC MILIVOMEVIC	, Assignor
Date	(print name here)	Franciscus Johannes Gerardus HAKKENS	, Assignor
Date	(print name here)	Achim HILGERS	, Assignor

Date	(print name here)	Cornelis Petrus HENDRIKS	, Assignor
Date	(print name here)	Rene Leonardus Jacobus Marie UBACHS	, Assignor
Date	(print name here)	Eduard Gerard Marie PELSSERS	, Assignor

and assign, and transl a place of business at	er the entire and exclusive ri High Tech Campus 5,5656	ve acknowledge receipt, I/we as a below-naming the following to Kon AE, Eindhoven, the Netherlands, its successorely "the Assignee") my/our invention for wh	inklijke Philips N.V., having rs, assigns, and legal
is executed concu	rrently herewith		
was executed by r	në/us on .å		
was filed on	, ha	ving a Serial No.	346346
was filed on. 01 I	ec 2015, having an Internati	onal Application No. PCT/EP2015/078114,	
and all rights in and t	o said application, and all of	her United States, foreign and international pa	stent applications associated
therewith, based there	on, or claiming priority ther	efrom including, but not limited to, any and a	ll provisionals, non-
provisionals divisions	, continuations, continuation	ns-in-part, re-examinations, reissues, and exte	nsions thereof, and the right to
claim priority thereto applications.	and the entire and exclusive	e right, title, and interest in and to any and all	patents granted on these
		officials in the United States and in any and a the Assignec(s), for its sole use, and that of it	-
extent. Upon request legal proceedings inc	at the expense of the Assign luding patent prosecution ac or convenient for securing a	ne Assignee to enjoy the foregoing right, title, nee, I/we agree to execute all papers, take all rations and infringement actions, and do all other adminishing patents on the foregoing inventions.	ightful oaths, testify in all er such acts which may be
I/We certify that I/we	have the full right to conver	y the above rights.	
	(sign name here)		
Date	(print name here)	Daan Anton VAN DEN ENDE	, Assignor
Date	(print name here)	Reinder HAAKMA	, Assignor
Date	(print name here)	Mark Thomas JOHNSON	, Assignor
Date	(print name here)	Frederick Maria BOEKHORST	, Assignor
Date	(print name here)	Milica KOVACEVIC MILIVOJEVIC	, Assignor
<u>/-/2 -20/5</u> Date	(hijan name here)	Franciscus Johannes Gerardus	, Assignor

HAKKENS

(print name here)

Achim HILGERS

PATENT REEL: 042784 FRAME: 0337

and assign, and trans a place of business a	fer the entire and exclusive r t High Tech Campus 5,5656	we acknowledge receipt, I/we as a below-namight, title, and interest in the following to Kon AE, Eindhoven, the Netherlands, its successovely "the Assignee") my/our invention for whose the successory of the Assignee in the successory of	inklijke Philips N.V., having rs, assigns, and legal
was filed on	me/us on, ha	ving a Serial Noional Application No. PCT/EP2015/078114 ,	
therewith, based ther provisionals division	eon, or claiming priority then s, continuations, continuation	her United States, foreign and international parefrom including, but not limited to, any and ans-in-part, re-examinations, reissues, and extee right, title, and interest in and to any and all	Il provisionals, non- nsions thereof, and the right to
	atent when granted, solely to	officials in the United States and in any and a the Assignee(s), for its sole use, and that of it	<u>-</u>
extent. Upon reques legal proceedings ind necessary, desirable, thereto in the Assign	t at the expense of the Assign cluding patent prosecution ac or convenient for securing a ee.	he Assignee to enjoy the foregoing right, title, nee, I/we agree to execute all papers, take all rations and infringement actions, and do all other and maintaining patents on the foregoing inverse.	ightful oaths, testify in all er such acts which may be
I/We certify that I/w	e have the full right to conve	y the above rights.	
	(sign name here)		
Date	(print name here)	Daan Anton VAN DEN ENDE	, Assignor
Date	(print name here)	Reinder HAAKMA	, Assignor
Date	(print name here)	Mark Thomas JOHNSON	, Assignor
Date	(print name here)	Frederick Maria BOEKHORST	, Assignor
Date	(print name here)	Milica KOVACEVIC MILIVOJEVIC	, Assignor
Date 12/01/2015	(print name here)	Franciscus Johannes Gerardus HAKKENS	, Assignor

Achim HILGERS

(print name here)

Date

PATENT REEL: 042784 FRAME: 0338

Date	(print name here)	Cornelis Petrus HENDRIKS	, Assignor
Date	(print name here)	Rene Leonardus Jacobus Marie UBACHS	, Assignor
Date	(print name here)	Eduard Gerard Marie PELSSERS	, Assignor

Date

(print name here)

(print name here)

and assign, and tra a place of business	nsfer the entire and exclusive r at High Tech Campus 5,5656	we acknowledge receipt, I/we as a below-name ight, title, and interest in the following to Koni AE, Eindhoven, the Netherlands, its successor wely "the Assignee") my/our invention for whi	inklijke Philips N.V., having s, assigns, and legal
was executed b		ving a Serial Noional Application No. PCT/EP2015/078114,	
therewith, based the provisionals divisi	nereon, or claiming priority then ons, continuations, continuation	her United States, foreign and international parefrom including, but not limited to, any and alms-in-part, re-examinations, reissues, and extere right, title, and interest in and to any and all p	ll provisionals, non- nsions thereof, and the right to
	Patent when granted, solely to	officials in the United States and in any and al the Assignee(s), for its sole use, and that of its	•
extent. Upon requiregal proceedings:	est at the expense of the Assign including patent prosecution ac ie, or convenient for securing a	he Assignee to enjoy the foregoing right, title, nee, I/we agree to execute all papers, take all ritions and infringement actions, and do all othe ad maintaining patents on the foregoing invent	ghtful oaths, testify in all r such acts which may be
I/We certify that I/	we have the full right to conve	y the above rights.	
	(sign name here)		
Date	(print name here)	Daan Auton VAN DEN ENDE	, Assignor
Date	(print name here)	Reinder HAAKMA	, Assignor
Date	(print name here)	Mark Thomas JOHNSON	, Assignor
Date	(print name here)	Frederick Maria BOEKHORST	, Assignor
Date	(print name here)	Milica KOVACEVIC MILIVOJEVIC	, Assignor

Franciscus Johannes Gerardus

HAKKENS

Achim HILGERS

PATENT REEL: 042784 FRAME: 0340

, Assignor

Dec 01, 2015		Alexander de la companya dela companya dela companya dela companya dela companya de la companya dela companya de	
Date	(print name here)	Cardelis Petrus HENDRIKS	, Assignor
Date	(print name here)	Rene Leonardus Jacobus Marie UBACHS	, Assignor
Date	(print name here)	Eduard Gerard Marie PELSSERS	, Assignor

For good and valuable consideration, of which I/we acknowledge receipt, I/we as a below-named Assignor(s), hereby sell,
and assign, and transfer the entire and exclusive right, title, and interest in the following to Koninklijke Philips N.V., having
a place of business at High Tech Campus 5,5656 AE, Eindhoven, the Netherlands, its successors, assigns, and legal
representatives, including any nominees (collectively "the Assignee") my/our invention for which an application:

	is ex	xecuted co	oncurrently herewith
	was	executed	by me/us on
	was	filed on.	, having a Serial No.
\boxtimes	was	filed on.	91 Dec 2015, having an International Application No. PCT/EP2015/078114,

and all rights in and to said application, and all other United States, foreign and international patent applications associated therewith, based thereon, or claiming priority therefrom including, but not limited to, any and all provisionals, non-provisionals divisions, continuations, continuations-in-part, re-examinations, reissues, and extensions thereof, and the right to claim priority thereto, and the entire and exclusive right, title, and interest in and to any and all patents granted on these applications.

I/We authorize and request that the Patent Office officials in the United States and in any and all foreign countries to issue any and all Letters Patent when granted, solely to the Assignee(s), for its sole use, and that of its successors, assigns, and legal representatives.

I/We will provide my/our cooperation to enable the Assignee to enjoy the foregoing right, title, and interest to the fullest extent. Upon request at the expense of the Assignee, I/we agree to execute all papers, take all rightful oaths, testify in all legal proceedings including patent prosecution actions and infringement actions, and do all other such acts which may be necessary, desirable, or convenient for securing and maintaining patents on the foregoing invention or for perfecting title thereto in the Assignee.

I/We certify that I/we have the full right to convey the above rights.

	(sign name here)		
Date	(print name here)	Daan Anton VAN DEN ENDE	, Assignor
Date	(print name here)	Reinder HAAKMA	, Assignor
Date	(print name here)	Mark Thomas JOHNSON	, Assignor
Date	(print name here)	Frederick Maria BOEKHORST	, Assignor
Date	(print name here)	Milica KOVACEVIC MILIVOJEVIC	, Assignor
Date	(print name here)	Franciscus Johannes Gerardus HAKKENS	, Assignor
Date	(print name here)	Achim HILGERS	, Assignor

Date	(print name here)	Cornelis Petrus HENDRIKS	, Assignor
2 / /2 / 20/5 Date	(print name hore)	Rene Leonardus Jacobus Marie	Assignor
		UBACHS	, a societies
		-600.0000	
Date	(print name here)	Eduard Gerard Marie PELSSERS	, Assignor

U.S.A. Sole/Joint

ASSIGNMENT

For good and valuable consideration, of which I/we acknowledge receipt, I/we as a below-named Assignor(s), hereby sell,
and assign, and transfer the entire and exclusive right, title, and interest in the following to Koninklijke Philips N.V., having
a place of business at High Tech Campus 5,5656 AE, Eindhoven, the Netherlands, its successors, assigns, and legal
representatives, including any nominees (collectively "the Assignee") my/our invention for which an application:

	s executed concurrently herewith
	vas executed by me/us on
	vas filed on, having a Serial No
\boxtimes	vas filed on. 01 Dec 2015, having an International Application No. PCT/EP2015/078114,

and all rights in and to said application, and all other United States, foreign and international patent applications associated therewith, based thereon, or claiming priority therefrom including, but not limited to, any and all provisionals, non-provisionals divisions, continuations, continuations-in-part, re-examinations, reissues, and extensions thereof, and the right to claim priority thereto, and the entire and exclusive right, title, and interest in and to any and all patents granted on these applications.

I/We authorize and request that the Patent Office officials in the United States and in any and all foreign countries to issue any and all Letters Patent when granted, solely to the Assignee(s), for its sole use, and that of its successors, assigns, and legal representatives.

I/We will provide my/our cooperation to enable the Assignee to enjoy the foregoing right, title, and interest to the fullest extent. Upon request at the expense of the Assignee, I/we agree to execute all papers, take all rightful oaths, testify in all legal proceedings including patent prosecution actions and infringement actions, and do all other such acts which may be necessary, desirable, or convenient for securing and maintaining patents on the foregoing invention or for perfecting title thereto in the Assignee.

I/We certify that I/we have the full right to convey the above rights.

	(sign name here)		
Date	(print name here)	Dasn Aston VAN DEN ENDE	, Assignor
Date	(print name here)	Reinder HAAKMA	, Assignor
Date	(print name here)	Mark Thomas JOHNSON	, Assignor
Date	(print name here)	Frederick Maria BOEKHORST	, Assignor
Date	(print name here)	Milica KOVACEVIC MILIVOJEVIC	, Assignor
Date	(print name here)	Franciscus Johannes Gerardus HAKKENS	, Assignor
Date	(print name here)	Ashim HII SWWS	Accionner

Date	(print name here)	Cornelis Petrus HENDRIKS	, Assignor
Date	(print name here)	Rene Leonardus Jacobus Marie	, Assignor
1 Norallan 2m1=		- SMACHE	
Date	(print name bere)	Eduard Gerard Warte FFL SSFRS	Assignar

PATENT REEL: 042784 FRAME: 0345

RECORDED: 06/22/2017