504624004 11/02/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4670722

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
MARKO B. POPOVIC	10/31/2017
MATTHEW PAUL BOWERS	10/31/2017
THANE ROBERT HUNT	10/31/2017
LYNN ROBERT KOESTERMAN	10/31/2017
MICHAEL PICKETT	10/30/2017
RICHARD MATTHEW RAFFERTY	10/30/2017
SAIVIMAL SRIDAR	10/30/2017
SEIICHIRO UEDA	10/31/2017
VARUN VISNUDAS VERLENCAR	10/29/2017
AMAID ZIA	10/29/2017
ANANTH JONNAVITTULA	10/30/2017

RECEIVING PARTY DATA

Name:	WORCESTER POLYTECHNIC INSTITUTE
Street Address:	100 INSTITUTE ROAD
City:	WORCESTER
State/Country:	MASSACHUSETTS
Postal Code:	01609

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15616038

CORRESPONDENCE DATA

Fax Number: (617)310-6001

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: 6173106000

Email: bosipmail@gtlaw.com
Correspondent Name: ROMAN FAYERBERG

Address Line 1: GREENBERG TRAURIG, LLP

Address Line 2: ONE INTERNATIONAL PLACE, SUITE 2000

Address Line 4: BOSTON, MASSACHUSETTS 02110

REEL: 044680 FRAME: 0915

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ATTORNEY DOCKET NUMBER:	110697-012501/US
NAME OF SUBMITTER:	ROMAN FAYERBERG
SIGNATURE:	/Roman Fayerberg, Reg. No. 60,507/
DATE SIGNED:	11/02/2017

Total Attachments: 55 source=012501Assignment#page1.tif source=012501Assignment#page2.tif source=012501Assignment#page3.tif source=012501Assignment#page4.tif source=012501Assignment#page5.tif source=012501Assignment#page6.tif source=012501Assignment#page7.tif source=012501Assignment#page8.tif source=012501Assignment#page9.tif source=012501Assignment#page10.tif source=012501Assignment#page11.tif source=012501Assignment#page12.tif source=012501Assignment#page13.tif source=012501Assignment#page14.tif source=012501Assignment#page15.tif source=012501Assignment#page16.tif source=012501Assignment#page17.tif source=012501Assignment#page18.tif source=012501Assignment#page19.tif source=012501Assignment#page20.tif source=012501Assignment#page21.tif source=012501Assignment#page22.tif source=012501Assignment#page23.tif source=012501Assignment#page24.tif source=012501Assignment#page25.tif source=012501Assignment#page26.tif source=012501Assignment#page27.tif source=012501Assignment#page28.tif source=012501Assignment#page29.tif source=012501Assignment#page30.tif source=012501Assignment#page31.tif source=012501Assignment#page32.tif source=012501Assignment#page33.tif source=012501Assignment#page34.tif source=012501Assignment#page35.tif source=012501Assignment#page36.tif source=012501Assignment#page37.tif source=012501Assignment#page38.tif source=012501Assignment#page39.tif source=012501Assignment#page40.tif source=012501Assignment#page41.tif source=012501Assignment#page42.tif

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BIOLOGICALLY-INSPIRED JOINTS AND SYSTEMS AND

METHODS OF USE THEREOF

and identified as:

Application No.: 15/616,038 Filed: June 7, 2017

and in said application and any and all other applications, both United States and foreign, which the undersigned may file, either solely or jointly with others, on said invention or improvements, and in any and all Letters Patent of the United States and foreign countries, which may be obtained on any of said applications, and in any reissue or extension of such patents, and further assigns to said assignee the priority right provided by the International Convention.

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Attorney Docket No. 1106 Application No.: 15/616, Page 2			
enjoyed by the said assi Letters Patent will be gr			l end of the term for which said
same would have been	held and enjoyed by	the undersigned if this	assignment had not been made.
Date: 10/3//201	17	Name of Inventor:	Marko B. Popovic
WITNESS	1. 0)	
Witness Signature:	1	<u>,</u>	
Witness Name:	FATHERINE	CRIGHTON	
Witness Date:	10/31/17	<u>.</u>	
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Date:	,	Name of Inventor:	Matthew Paul Bowers
WITNESS			
Witness Signature:			
Witness Name:			

Witness Date:

Date: Thane Robert Hunt Name of Inventor: **WITNESS** Witness Signature: Witness Name: Witness Date: Date: Lynn Robert Koesterman Name of Inventor: **WITNESS** Witness Signature: Witness Name: Witness Date: Date: _____ Name of Inventor: Michael Pickett **WITNESS** Witness Signature: Witness Name: Witness Date:

Attorney Docket No. 110697-012501/US

Application No.: 15/616,038

Page 3

BOS 48419536v1

Date: _____ Name of Inventor: Richard Matthew Rafferty **WITNESS** Witness Signature: Witness Name: Witness Date: Date: _____ Name of Inventor: Saivimal Sridar WITNESS Witness Signature: Witness Name: Witness Date: Date: _____ Seiichiro Ueda Name of Inventor: WITNESS Witness Signature: Witness Name: Witness Date:

Attorney Docket No. 110697-012501/US

Application No.: 15/616,038

Page 4

BOS 48419536v1

Attorney Docket No. 110697-012501/US Application No.: 15/616,038 Page 5		
Date:	Name of Inventor:	Varun Visnudas Verlencar
WITNESS		
Witness Signature:		
Witness Name:		
Witness Date:	744	
Date:		
	Name of Inventor:	Amaid Zia
WITNESS		
Witness Signature:		
Witness Name:		
Witness Date:		
Date:		
	Name of Inventor:	Ananth Jonnavittula
WITNESS		
Witness Signature:		
Witness Name:		
Witness Date:		

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Attorney Docket No. 110697-012501/US Application No.: 15/616,038 Page 2 enjoyed by the said assignees, its successors and assigns, to the full end of the term for which said Letters Patent will be granted, as fully and entirely as the same would have been held and enjoyed by the undersigned if this assignment had not been made. Date: Name of Inventor: Marko B. Popovic **WITNESS** Witness Signature: Witness Name: Witness Date: Name of Inventor: Matthew Paul Bowers

WITNESS

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Witness Signature:

Witness Name:

Witness Date:

10/3/117

BOS 48419536v1

Date: Name of Inventor: Thane Robert Hunt **WITNESS** Witness Signature: Witness Name: Witness Date: Date: Name of Inventor: Lynn Robert Koesterman **WITNESS** Witness Signature: Witness Name: Witness Date: Date: Name of Inventor: Michael Pickett **WITNESS** Witness Signature: Witness Name: Witness Date:

BOS 48419536v1

Attorney Docket No. 110697-012501/US

Application No.: 15/616,038

Page 3

Date:		
	Name of Inventor:	Richard Matthew Rafferty
WITNESS		
Witness Signature:		
Witness Name:		
Witness Date:		
Date:		
	Name of Inventor:	Saivimal Sridar
WITNESS		
Witness Signature:		
Witness Name:		
Witness Date:		
Date:	Name of Inventor:	Seiichiro Ueda
	rume of inventor.	Selicinio Ceda
<u>WITNESS</u>		
Witness Signature:		
Witness Name:		
Witness Date:		

Attorney Docket No. 110697-012501/US Application No.: 15/616,038 Page 4

BOS 48419536v1

Date:	Nan	ne of Inventor:	Varun Visnudas Verlencar
WITNESS			,
Witness Signature:			
Witness Name:		·	
Witness Date:			
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Date:	Nan	ne of Inventor:	Amaid Zia
WITNESS			
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Date:	Nan	ne of Inventor:	Ananth Jonnavittula
<u>WITNESS</u>			
Witness Signature:			
Witness Name:	:		
Witness Date:			

Attorney Docket No. 110697-012501/US Application No.: 15/616,038 Page 5

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Filed: June 7, 2017

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Application No.: 15/616,038 Page 2 enjoyed by the said assignees, its successors and assigns, to the full end of the term for which said Letters Patent will be granted, as fully and entirely as the same would have been held and enjoyed by the undersigned if this assignment had not been made. Date: ___ Name of Inventor: Marko B. Popovic WITNESS Witness Signature: Witness Name: Witness Date: Date: Name of Inventor: Matthew Paul Bowers WITNESS Witness Signature: Witness Name: Witness Date: BOS 48419536v1

Attorney Docket No. 110697-012501/US

Date: 10-31-2017 WITNESS Witness Signature: C Carlos Manthez Luna Witness Name: 2017- Oct-31 Witness Date: Date: Name of Inventor: Lynn Robert Koesterman **WITNESS** Witness Signature: Witness Name: Witness Date: Date: Name of Inventor: Michael Pickett **WITNESS** Witness Signature: Witness Name: Witness Date: BOS 48419536v1

Attorney Docket No. 110697-012501/US

Application No.: 15/616,038

Page 3

Date: _____ Name of Inventor: Richard Matthew Rafferty **WITNESS** Witness Signature: Witness Name: Witness Date: Date: _____ Saivimal Sridar Name of Inventor: **WITNESS** Witness Signature: Witness Name: Witness Date: Date: Name of Inventor: Seiichiro Ueda **WITNESS** Witness Signature: Witness Name: Witness Date:

BOS 48419536v1

Attorney Docket No. 110697-012501/US

Application No.: 15/616,038

Page 4

Date:		
	Name of Inventor:	Varun Visnudas Verlencar
WITNESS		
Witness Signature:		
Witness Name:		
Witness Date:		
Date:	Name of Inventor:	Amaid Zia
WITNESS		
Witness Signature:		
Witness Name:		
Witness Date:		
Date:		
	Name of Inventor:	Ananth Jonnavittula
WITNESS		
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Attorney Docket No. 110697-012501/US Application No.: 15/616,038 Page 5

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Application No.: 15/616,038 Filed: June 7, 2017

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Attorney Docket No. 110697-0 Application No.: 15/616,038 Page 2	12501/US					
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same would have been held	and enjoyed by the un	dersigned if this	s assignment had not been made.			
Date:		e of Inventor:	Madra D. Danasia			
	Name	e of inventor:	Marko B. Popovic			
WITNESS						
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WITNESS						
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Date: _____ Name of Inventor: Thane Robert Hunt **WITNESS** Witness Signature: Witness Name: Witness Date: Date: __10/31/2017 Name of Inventor: Lynn Robert Koesterman **WITNESS** Witness Signature: Witness Name: Witness Date: Date: _____ Name of Inventor: Michael Pickett **WITNESS** Witness Signature: Witness Name: Witness Date:

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Page 3

BOS 48419536v1

Date: Name of Inventor: Richard Matthew Rafferty **WITNESS** Witness Signature: Witness Name: Witness Date: Date: _____ Name of Inventor: Saivimal Sridar **WITNESS** Witness Signature: Witness Name: Witness Date: Date: _____ Name of Inventor: Seiichiro Ueda **WITNESS** Witness Signature: Witness Name: Witness Date:

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Page 4

BOS 48419536v1

Date:						
	<u></u>	Name	of Inventor:	Varun Visnudas Verlencar		
WITNESS						
Witness Signature:						
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Date:		Name	of Inventor:	Amaid Zia		
WITNESS						
Witness Signature:						
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Date:		Name	of Inventor:	Ananth Jonnavittula		
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Attorney Docket No. 110697-012501/US Application No.: 15/616,038 Page 5

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Date:	Name of	f Inventor:	Marko B. Popovic
NATURALDOC			•
WITNESS			
Witness Signature:			
Witness Name:			
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	Name of	Inventor:	Matthew Paul Bowers
WITNESS			
Witness Signature:			
Witness Name:			
Witness Date:			

Date: Thane Robert Hunt Name of Inventor: WITNESS Witness Signature: Witness Name: Witness Date: Date: _____ Lynn Robert Koesterman Name of Inventor: WITNESS Witness Signature: Witness Name: Witness Date: Date: 10-30-17 Michael Pickett Name of Inventor: WITNESS Witness Signature: Witness Name: Witness Date:

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Page 3

BOS 48419536v1

Date: _____ Richard Matthew Rafferty Name of Inventor: **WITNESS** Witness Signature: Witness Name: Witness Date: Date: _____ Name of Inventor: Saivimal Sridar WITNESS Witness Signature: Witness Name: Witness Date: Date: _____ Name of Inventor: Seiichiro Ueda **WITNESS** Witness Signature: Witness Name: Witness Date:

> PATENT REEL: 044680 FRAME: 0941

Attorney Docket No. 110697-012501/US

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Page 4

Dotos				
Date:		Name of Inventor:		Varun Visnudas Verlencar
WITNESS				
Witness Signature:			-	
Witness Name:			-	
Witness Date:			-	
Date:				
		Name	of Inventor:	Amaid Zia
WITNESS				
Witness Signature:		· · · · · · · · · · · · · · · · · · ·	-	
Witness Name:			-	
Witness Date:			-	
Date:				
Date.		Name	of Inventor:	Ananth Jonnavittula
WITNESS				
Witness Signature:			-	
Witness Name:			-	
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Attorney Docket No. 110697-012501/US Application No.: 15/616,038 Page 5

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PATENT

REEL: 044680 FRAME: 0943

Attorney Docket No. 110697-012501/US Application No.: 15/616,038 Page 2		
enjoyed by the said assignees, its successors Letters Patent will be granted, as fully and e		ll end of the term for which said
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WITNESS		
Witness Signature:		
Witness Name:		
Witness Date:		

Date: _____ Name of Inventor: Thane Robert Hunt **WITNESS** Witness Signature: Witness Name: Witness Date: Date: _____ Name of Inventor: Lynn Robert Koesterman **WITNESS** Witness Signature: Witness Name: Witness Date: Date: Name of Inventor: Michael Pickett **WITNESS** Witness Signature: Witness Name: Witness Date:

BOS 48419536v1

Attorney Docket No. 110697-012501/US

Application No.: 15/616,038

Page 3

Application No.: 15/616,038 Page 4 Date: 10/30/2017 Richard Matthew Rafferty WITNESS Witness Signature: Witness Name: Witness Date: 310cT2017 Date: Name of Inventor: Saivimal Sridar WITNESS Witness Signature: Witness Name: Witness Date: Date: Name of Inventor: Seiichiro Ueda WITNESS Witness Signature: Witness Name: Witness Date:

BOS 48419536v1

Attorney Docket No. 110697-012501/US

REEL: 044680 FRAME: 0946

Date:	Name of Inventor:	Varun Visnudas Verlencar
WITNESS		
Witness Signature:		
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Date:	Name of Inventor:	Amaid Zia
WITNESS		
Witness Name:		
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Date:	Name of Inventor:	Ananth Jonnavittula
WITNESS		
Witness Signature:		
Witness Name:		
Witness Date:		

Attorney Docket No. 110697-012501/US Application No.: 15/616,038 Page 5

ASSIGNMENT

In consideration of One Dollar (\$1.00) and other good and valuable consideration in hand paid, the receipt and sufficiency whereof are hereby acknowledged, the undersigned hereby assign to: Worcester Polytechnic Institute, having a principal place of business at 100 Institute Road, Worcester, MA 01609, its successors and assigns, the entire right, title and interest in the invention or improvements of the undersigned disclosed in an application for Letters Patent of the United States, entitled:

BIOLOGICALLY-INSPIRED JOINTS AND SYSTEMS AND

METHODS OF USE THEREOF

and identified as:

Application No.: 15/616,038

Filed: June 7, 2017

and in said application and any and all other applications, both United States and foreign, which the undersigned may file, either solely or jointly with others, on said invention or improvements, and in any and all Letters Patent of the United States and foreign countries, which may be obtained on any of said applications, and in any reissue or extension of such patents, and further assigns to said assignee the priority right provided by the International Convention.

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Attorney Docket No. 13 Application No.: 15/61 Page 2	10697-012501/US 6,038			
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Application No.: 15/616,038 Page 3 Date: Name of Inventor: Thane Robert Hunt **WITNESS** Witness Signature: Witness Name: Witness Date: Date: Name of Inventor: Lynn Robert Koesterman **WITNESS** Witness Signature: Witness Name: Witness Date: Name of Inventor: Michael Pickett **WITNESS** Witness Signature: Witness Name: Witness Date:

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Attorney Docket No. 110697-012501/US

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Attorney Docket No. 110697-012501/US Application No.: 15/616,038 Page 4

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Attorney Docket No. 110697-012501/US Application No.: 15/616,038

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BIOLOGICALLY-INSPIRED JOINTS AND SYSTEMS AND

METHODS OF USE THEREOF

and identified as:

Application No.: 15/616,038 Filed: June 7, 2017

and in said application and any and all other applications, both United States and foreign, which the undersigned may file, either solely or jointly with others, on said invention or improvements, and in any and all Letters Patent of the United States and foreign countries, which may be obtained on any of said applications, and in any reissue or extension of such patents, and further assigns to said assignee the priority right provided by the International Convention.

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Attorney Docket No. 110697-012501/US Application No.: 15/616,038 Page 2			
enjoyed by the said assignees, its successors Letters Patent will be granted, as fully and e		the ful	l end of the term for which said
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Date:	Name of Inve	ntor:	Marko B. Popovic
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Witness Date:			

Date: _____ Name of Inventor: Thane Robert Hunt **WITNESS** Witness Signature: Witness Name: Witness Date: Date: _____ Name of Inventor: Lynn Robert Koesterman **WITNESS** Witness Signature: Witness Name: Witness Date: Date: _____ Name of Inventor: Michael Pickett **WITNESS** Witness Signature: Witness Name: Witness Date:

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Attorney Docket No. 110697-012501/US

Application No.: 15/616,038

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Attorney Docket No. 110697-012501/US Application No.: 15/616,038 Page 4

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	Name of Inventor:	Ananth Jonnavittula
WITNESS		
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Attorney Docket No. 110697-012501/US Application No.: 15/616,038 Page 5

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BIOLOGICALLY-INSPIRED JOINTS AND SYSTEMS AND

METHODS OF USE THEREOF

and identified as:

Application No.: 15/616,038

Filed: June 7, 2017

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Attorney Docket No. 11 Application No.: 15/61 Page 2					
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Witness Signature:					
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Date:	Name of Inventor:	Michael Pickett
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Attorney Docket No. 110697-012501/US Application No.: 15/616,038 Page 3

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Date:	<u> </u>	Name of Inventor:	Saivimal Sridar
WITNESS			
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Attorney Docket No. 110697-012501/US Application No.: 15/616,038 Page 4

Attorney Docket No. 110 Application No.: 15/616 Page 5	0697-012501/US 5,038			
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Date: $10-29-2017$		Name of Inventor:	Varun Visnudas Verlencar	
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Date:		Name of Inventor:	Amaid Zia	
WITNESS				
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ASSIGNMENT

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and identified as:

Application No.: 15/616,038 Filed: June 7, 2017

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Page 2 enjoyed by the said assignees, its successors and assigns, to the full end of the term for which said Letters Patent will be granted, as fully and entirely as the same would have been held and enjoyed by the undersigned if this assignment had not been made. Date: _____ Name of Inventor: Marko B. Popovic WITNESS Witness Signature: Witness Name: Witness Date: Date: Name of Inventor: Matthew Paul Bowers **WITNESS** Witness Signature: Witness Name: Witness Date:

Attorney Docket No. 110697-012501/US

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BOS 48419536v1

Date: _____ Name of Inventor: Thane Robert Hunt **WITNESS** Witness Signature: Witness Name: Witness Date: Date: _____ Name of Inventor: Lynn Robert Koesterman **WITNESS** Witness Signature: Witness Name: Witness Date: Date: _____ Name of Inventor: Michael Pickett **WITNESS** Witness Signature: Witness Name: Witness Date:

Attorney Docket No. 110697-012501/US

Application No.: 15/616,038

Page 3

BOS 48419536v1

Date: _____ Name of Inventor: Richard Matthew Rafferty **WITNESS** Witness Signature: Witness Name: Witness Date: Date: _____ Name of Inventor: Saivimal Sridar **WITNESS** Witness Signature: Witness Name: Witness Date: Date: _____ Name of Inventor: Seiichiro Ueda **WITNESS** Witness Signature: Witness Name: Witness Date:

Attorney Docket No. 110697-012501/US

Application No.: 15/616,038

Page 4

BOS 48419536v1

Date:				
Bute.		Name	of Inventor:	Varun Visnudas Verlencar
<u>WITNESS</u>				
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<i></i>		Name	of Inventor:	Amaid Zia
WITNESS				
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Witness Name:	Abeera Eman Zia			
Witness Date:	29-October-2017			
Date:		Name	. C.L	Ananth Jonnavittula
		Name	of inventor:	Ananin Johnaviuuia
WITNESS				
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Attorney Docket No. 110697-012501/US Application No.: 15/616,038 Page 5

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Application No.: 15/616,038

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Attorney Docket No. 110697-012501/US Application No.: 15/616,038 Page 3

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Date: Name of Inventor: Richard Matthew Rafferty **WITNESS** Witness Signature: Witness Name: Witness Date: Date: Name of Inventor: Saivimal Sridar WITNESS Witness Signature: Witness Name: Witness Date: Date: Name of Inventor: Seiichiro Ueda WITNESS Witness Signature: Witness Name: Witness Date:

Attorney Docket No. 110697-012501/US

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Page 4

BOS 48419536v1

Page 5 Date: Name of Inventor: Varun Visnudas Verlencar **WITNESS** Witness Signature: Witness Name: Witness Date: Name of Inventor: Amaid Zia **WITNESS** Witness Signature: Witness Name: Witness Date: Date: Oct -30-2017 Name of Inventor: Ananth Jonnavittula WITNESS Witness Signature: Syamprasad K Rajagopalan Witness Name: Oct - 30 - 2017 Witness Date:

BOS 48419536v1

RECORDED: 11/02/2017

Attorney Docket No. 110697-012501/US

Application No.: 15/616,038