505795003 11/27/2019

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
ANAND RAGHAWA PRASAD	11/25/2019
SIVAKAMY LAKSHMINARAYANAN	11/03/2019
SIVABALAN ARUMUGAM	11/11/2019
SHEEBA BACKIA MARY BASKARAN	11/01/2019
HIRONORI ITO	11/25/2019
TOSHIYUKI TAMURA	11/25/2019
HISASHI FUTAKI	11/25/2019

RECEIVING PARTY DATA

Name:	NEC CORPORATION	
Street Address:	7-1, SHIBA 5-CHOME, MINATO-KU	
City:	TOKYO	
State/Country:	JAPAN	
Postal Code:	108-8001	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16617595

CORRESPONDENCE DATA

Fax Number: (202)293-7860

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: 2022937060

Email: rknight@sughrue.com, sughrue@sughrue.com

Correspondent Name: SUGHRUE MION, PLLC

Address Line 1: 2000 PENNSYLVANIA AVENUE, NW

Address Line 2: SUITE 900

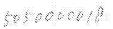
Address Line 4: WASHINGTON, D.C. 20006

ATTORNEY DOCKET NUMBER:	Q251633
NAME OF SUBMITTER:	CHRISTOPHER KNIGHT
SIGNATURE:	/CHRISTOPHER KNIGHT/
DATE SIGNED:	11/27/2019

This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 15

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Docket No.: Only After Sept. 16, 2012

ASSIGNMENT WITH DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

Whereas, I/we, the undersigned inventor(s) hereinafter called assignor(s), have invented certain improvements described in the application identified below; (the "invention") and

Whereas, NEC Corporation, (assignee), desires to acquire the entire and exclusive right, title, and interest in the application and invention, and to any patents that may be obtained therefor in the United States, in any U.S. territorial possessions, and in any and all foreign countries;

Now therefore, for valuable consideration, receipt whereof is hereby acknowledged.

I/we, the above named assignor(s), hereby sell, assign and transfer to the above named assignee, its successors and assigns, the entire and exclusive right, title and interest in the application and the invention disclosed therein for the United States, U.S. territorial possessions, and in any and all foreign countries, including all divisions, and continuations, and continuations-in-part thereof, and all Letters Patent of the United States that may be granted thereon, and all reissues and reexaminations, renewals, and substitutions thereof, and including the right to claim priority under 35 U.S.C. §119, and all rights for past infringement, under the International Convention, and under any other relevant International Treaties and Arrangements, and I/we request the Director of the U.S. Patent and Trademark Office to issue any Letters Patent granted upon the invention set forth in the application to the assignee, its successors and assigns; I/we will execute without further consideration all papers deemed necessary by the assignee, and generally perform all necessary acts to aid the assignee, its successors and assigns, to obtain and enforce proper protection for the invention in connection with the United States and foreign applications, including but not limited to all divisional, continuation, reissue and other applications for Letters Patent on the invention and execute all assignments thereof to the above named assignee its successors and assigns, when called upon to do so by the assignee; and I/we will communicate to the above named assignee or its representatives all facts known to the undersigned respecting the invention, whenever requested, testify in any legal proceedings in which any of the applications or patents may become involved, and do generally everything necessary to assist the above named assignee its successors or assigns to obtain patent protection for the invention in the United States and foreign countries.

(Legalization not required for recording but is prima facie evidence of execution under 35 U.S.C. §261)

As the below named inventor, I hereby declare that:

This assignment with declaration is

The attached application, or directed to:

United States Application or PCT International Application Number PCT/JP2018/020235 filed on May 25, 2018 (Confirmation No._____).

The application is entitled:

COMMUNICATION METHOD, COMMUNICATION SYSTEM, AND USER EQUIPMENT

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

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

I have reviewed and understand the contents of the application for which this assignment with declaration is being submitted, including the claims.

I am aware of the duty to disclose to the U.S Patent and Trademark Office all information known to me to be material to patentability as defined in 37 CFR 1.56.

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

Authorization To Permit Access To Application by Participating Office

☐ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (IPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, IPO, KIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified application is filed to have access to the application.

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In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Office.

NAME OF SOLE OR FIRST INVE	NTOR:		***************************************
Given Name			
(first and middle [if any])	Anand Raghawa	Family Name or Surname	PRASAD
Inventor's signature		Date	November 25, 2019
Residence:			
Mailing Address: c/o NEC Corpora	ntion, 7-1, Shiba 5-chome, Minato	-ku, Tokyo 108-8001, Japan	
NAME OF SECOND INVENTOR:			
Given Name (first and middle [if any])	Sivakamy	Family Name or Sumame	LAKSHMINARAYANAN
Inventor's signature		Date	
Residence:			
c/o NEC Technol Mailing Address: Perungudi, Chenn	ogies India Pvt. Ltd., SP Infocity, 1ai, Tamil Nadu 600096, India	Block-A, 9th Floor, Module-2A, 4	40, MGR Salai, Kandanchavadi,
NAME OF THIRD INVENTOR:			
Given Name (first and middle [if any])	Sivabalan	Family Name or Surname	ARUMUGAM
Inventor's signature		Date	
Residence:			
c/o NEC Technolo Mailing Address: Perungudi, Chenn	ogies India Pvt. Ltd., SP Infocity, sai, Tamii Nadu 600096, India	Block-A, 9th Floor, Module-2A, 4	0, MGR Salai, Kandanchavadi,
NAME OF FOURTH INVENTOR:			
Given Name (first and middle [if any])	Sheeba Backia Mary	Family Name or Surname	BASKARAN
Inventor's signature		Date	
Residence:			
Mailing c/o NEC Technolog Address: Peningudi, Chemai,	ies India Pvt. Ltd., SP Infocity, Bl , Tamil Nadu 600096, India	lock-A, 9th Floor, Module-2A, 40,	, MGR Salai, Kandanchavadi,
NAME OF FIFTH INVENTOR:			
Given Name (first and middle [if any])	Hironori	Family Name or Surname	ITO :
Inventor's signature	*	Date	
Residence: Tokyo, Japan		•	
Mailing Address: c/o NEC Corporation	n, 7-1, Shiba 5-chome, Minato-ku	, Tokyo 108-8001, Japan	

NAME OF SIXTH INVENTO)R:		
Given Name (first and middle [if any])	Toshiyuki	Family Name or Surname	TAMURA
Inventor's signature	7.00	Date	November 25, 2019
Residence: Tokyo, Japan	* * * * * * * * * * * * * * * * * * * *		
Mailing Address: c/o NEC Co	rporation, 7-1, Shiba 5-chome, Minato-ki	u, Tokyo 108-8001, Japan	
NAME OF SEVENTH INVE	NTOR:		
Given Name (first and middle [if any])	Hisashi	Family Name or Surname	FUTAKI
Inventor's signature	Heade Fachi	Date	November 25, 2019
Residence: Tokyo, Japan			
Mailing			

Docket No.: Only After Sept. 16, 2012

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If we, the above named assignor(s), hereby sell, assign and transfer to the above named assigner, its successors and assign, the entire and exclusive right, title and interest in the application and the invention disclosed therein for the United States, U.S. territorial possessions, and in any and all foreign countries, including all divisions, and continuations, and continuations—meant thereof, and all Letters Patent of the United States that may be granted thereon, and all reissues and reexaminations, renewals, and substitutions thereof, and including the right to claim priority under 35 U.S.C. §119, and all rights for past infringement, under the International Convention, and under any other relevant International Treaties and Arrangements, and I/we request the Director of the U.S. Patent and Trademark Office to issue any Letters Patent granted upon the invention set forth in the application to the assignee, its successors and assigns; I/we will execute without further consideration all papers deemed necessary by the assignee, and generally perform all necessary acts to aid the assignee, its successors and assigns, to obtain and enforce proper protection for the invention in connection with the United States and foreign applications, including but not limited to all divisional, continuation, reissue and other applications for Letters Patent on the invention and execute all assignments thereof to the above named assignee its successors and assigns, when called upon to do so by the assignee; and I/we will communicate to the above named assignee or its representatives all facts known to the undersigned respecting the invention, whenever requested, testify in any legal proceedings in which day of the applications or patents may become involved, and do generally everything necessary to assist the above named assignee its successors or assigns to obtain patent protection for the invention in the United States and foreign countries.

(Legalization not required for recording but is prima facie evidence of execution under 35 U.S.C. §261)

As the below named inventor, I hereby declare that:

This assignment with declaration is

The attached application, or
directed to:

United States Application or PCT International Application Number PCT/IP2018/020235
filed on May 25, 2018 (Confirmation No._____).

The application is entitled:

COMMUNICATION METHOD, COMMUNICATION SYSTEM, AND USER EQUIPMENT

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

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In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filling the Authorization to Permit Access to Application by Participating Office.

[Page 1]

**************************************	**************************************
NAME OF SOLE OR FIRST INVENTOR:	
Given Name	Danish and a second
(first and middle [if any]) Anand Raghawa	· Family Name or Surname PRASAD
loventor's signature	Date
Residence:	
NOW A STREET THE NOON OF THE ORDER OF A	. Mars by Talam 105 8001 frame
Mailing Address: c/o NEC Corporation, 7-1, Shiha 5-chome NAME OF SECOND INVENTOR:	s, Minato-Rd. 108yti 106-6001. Japan
Given Name	
(first and middle [if any]) Sivakamy	Family Name or Surname LAKSHMINARAYANAN
\$1	no Nov no
Inventor's signature	Date 03 Nov 2019
Residence:	
	P Infocity, Block-A, 9th Floor, Module-2A, 40, MGR Salaí, Kandanchavadi,
Mailing Address: Perungudi, Chennai, Tamil Nadu 600096	, India
NAME OF THIRD INVENTOR:	*
Given Name	
(first and middle [if any]) Sivabalan	Family Name or Surname ARUMUGAM
furnation of minimations	Date
inventor's signature	
Residence:	
c/o NEC Technologies India Pvt. Ltd., S	P Infocity, Block-A, 9th Floor, Module-2A, 40, MGR Salai, Kandanchavadi
Mailing Address: Perungudi, Chennai, Tamil Nadu 60009	6, India
NAME OF FOURTH INVENTOR:	
Given Name	Family Name or Surname BASKARAN
(first and middle [if any]) Sheeba Backia Mary	y Painty Name of Businine Brain 1992
Inventor's signature	Date
to reason a argument	
Residence:	
Mailing c/o NEC Technologies India Pvt. Ltd., SI	P Infocity, Block-A, 9th Floor, Module-2A, 40, MGR Salai, Kandanchavadi,
Address: Perungudi, Chennai, Tamil Nadu 600096	, india
NAME OF FIFTH INVENTOR:	
Given Name (Seet and middle (if anyl) Hironori	Family Name or Surname ITO
(first and middle [if any]) Hironort	
Farance of planeting	Date
Inventor's signature	
Residence: Tokyo, Japan	
5.2.33	
Address: c/o NEC Corporation, 7-1, Shiba 5-chon	ne, Minato-ku, Tokyo 108-8001, Japan

NAME OF SIXTH INVENTOR:		
Given Name (first and middle [if any]) Toshiyuki	Family Name or Surname TAMURA	
Inventor's signature	Date	
Residence: Tokyo, Japan		
Mailing Address: c/o NEC Corporation, 7-1, Shiba 5-chome, Minato-kt	ı, Tokyo 108-8001, Japan	
NAME OF SEVENTH INVENTOR:		
Given Name (first and middle [if any]) Hisashi '	Family Name or Surname FUTAKI	
Inventor's signature	Date	
Residence: Tokyo, Japan	: · · · · · · · · · · · · · · · · · · ·	
Mailing Address: c/o NEC Corporation, 7-1, Shiba 5-chome, Minato-ku, Tokyo 108-8001, Japan		

PATENT

REEL: 051142 FRAME: 0149

Dockef No.: Only After Sept. 16, 2012

ASSIGNMENT WITH DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CER 1.63)

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Whereas, NEC Corporation, (assignee), desires to acquire the entire and exclusive right, title, and interest in the application and invention, and in any patents that may be obtained therefor in the United States, in any U.S. territorial possessions, and in any and all foreign countries;

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(Legalization not required for recording but is prima facts evidence of execution under 35 U.S.C. §263)		
As the below named inventor, Thereb	y decla	ise that:
This assignment with declaration is directed to:	m	The attached application, or
anerica m.	183	United States Application or PCT International Application Number <u>PCT//P2018/020735</u> Bled on May 25, 2018 (Confirmation No).
The application is entitled:		

COMMUNICATION METHOD, COMMUNICATION SYSTEM, AND USER EQUIPMENT

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

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In accordance with 37 CFR 1.14(c), socies may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Office.

NAME OF SOLE OR FIRST INVENTOR:			
Given Name			
(first and middle [if any]) Anami Raghawa	Family Name or Sumams PRASAD		
Inventor's signature	Date		
Residence			
ا الرواد و الرازية والرواد و الرازية ا	S. C. COO TABLE S		
Misting Address: c/o NEC Corporation, 7-1, Shiba 5-chome, Minato-k	.u, łokyo 198-8001, łapan		
NAME OF SECOND INVENTOR:	<i>-</i>		
Given Name			
(first and middle [if sny]) Sivakamy	Family Name or Surname LAKSHMINAKAYANAN		
) A		
Inventor's signature			
Residence:			
	Block-A, 9th Fluor, Module-2A, 40, MGR Solai, Kandanchavadi,		
Mailing Address: Perungudi, Chennai, Tamil Nadu 600096. India			
NAME OF THIRD INVENTOR:	yanaanaanaanaanaanaanaanaanaanaanaanaana		
Given Name			
(first and middle (if any)) Sivabalan	Family Name of Surrame ARUMUGAM		
m / 200 8 m / 200			
Inventor's signature A. G	Date 13/13 2019		
w			
Residence:			
	Hock-A, 9th Floor, Module-2A, 40, MGR Salai, Kandanchavadi,		
Mailing Address: Perungudi, Chemai, Tamil Nadu 600096, India			
NAME OF FOURTH INVENTOR:			
Ciiven Name			
(first and middle [ft any]) Sheebs Backis Mary	Family Name or Surname BASKARAN		
Inventor's signature	Date		
Residence:			
Mailing c/o NEC Technologies India Pvt. Ltd., SP Infocity, Bio	ock-A, 9th Floor, Module-2A, 40, MGR Salai, Kandanehavadi,		
Address: Perungudi, Chennai, Tamil Nadu 600096, India			
NAME OF FIFTH INVENTOR:			
Given Name			
(first and middle [if any]) Himnori	Family Name or Surname TTO		
Inventor's signature	Date		
Residence: Tokyo, Japan			
Mailing			
Address: c/e NEC Corporation, 7-1, Shiba 3-chome, Minato-ku, Tokyo 198-8991, Japan			

NAME OF SIXTH INVENTOR:			
Green Name (first and middle [if any]) Foshiyaki	Family Name or Surname TAMURA		
Inventor's signature	Date		
Residence: Tokyó, Janán			
Mailing Address: c/o NEC Corporation, 7-1, Shiba 5-chome, Minato-ku, Tokyo 108-8001, Japan			
NAME OF SEVENTH INVENTOR:			
Given Name (first and middle (if any)) Hisashi	Family Name or Surname FUTAKI		
Inventor's signature	ikate		
Besidence: Takva, Japan			
Mailing Address: c/o NEC Corporation, 7-1, Shiba S-chame, Minato-ku, Tokyo 108-8001, Japan			

1050000018

Docket No.: Only After Sept. 16, 2012

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This assignment with declaration is directed to:	8	The attached application, or			
**	Ø	United States Application or PCT Internation filed on May 25, 2018 (Confirmation No.	ial A.	pplication Numbe	er <u>PCT/JP2018/020235</u>
The application is entitled:		1967-1977			

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NAME OF SOLE OR FIRST INVENTOR:	3 2
Given Name	
(first and middle [if any]) Anand Raginowa	Family Name or Surnage PRASAD
Inventor's signature	Date
Residence:	8
Mailing Address: c/e NEC Corporation, 7-1, Shiba 5-chome, Minato-	ku. Tokyo 108-8001, Japan
NAME OF SECOND INVENTOR:	
Given Name (first and middle [if any]) Siyakamy	Family Name LAKSHMINAPAYANAN
Inventor's signature	Date
Residence	
e/o NEC Technologies India Pvt. Ltd., SP Infocity, I Mailing Address: Perungudi, Chennai, Tamil Nadu 600096, India	Block-A, 9th Floor, Module-2A, 40, MGR Salai, Kandarchavadi,
NAME OF THIRD INVENTOR:	
Given Name (first and middle (if anyl) Sivabalan	Family Name or Surnams ARUMUGAM
Inventor's signature	Diste
Resultence:	
o/o NEC Technologies India Pvt. Ltd., \$7 Infocity, E Mailing Address: Ferungudi, Chennai, Tamil Nadu 600096, India	Block-A, 9th Floor, Module-2A, 40, MGR Salai, Kandanchavadi.
NAME OF FOURTH INVENTOR:	
	Family Name or Surname BASKARAN ,
Inventor's signature III III II	Date OI NOV 2019
Residence	
Mailing c/o NEC Technologies India Pvr. Ltd., SP Infocity, Bla Address: Perungudi, Chennai, Tamil Nadu 600096, India	ock-A. 9th Ploor, Module-2A, 40, MGR Salat, Kandanchavadi,
NAME OF FIFTH INVENTOR:	
Given Name (Grst and middle [if any]) Hironori	Family Name or Surname ITO
Inventor's signature	Date
Residence: Tokyo, Japan	
Mailing Address: c/o NEC Corporation, 7-1, Shiba 5-chome, Minato-ku,	Tokyo 108-8001, Japan

NAME OF SIXTH INVENTOR	R:		
Given Name (first and middle [if any])	Toshiyuki	Family Name or Surname TAM	URA
Inventor's signature		Date	
Residence: Tokyo, Japan	*	*	
Mailing Address: c/o NEC Con	poration, 7-1, Shiba 5-chom	e, Minato-ku, Tokyo 108-8001, Japan	**
NAME OF SEVENTH INVEN			8
Given Name (first and middle (if anyl)	Hisashi	Family Name or Surname FUTA	.KI
Inventor's signature	**************************************	Date	
Residence: Tokyo, Japan			
Mailing Address: c/o NEC Con	poration, 7-1, Shiba 5-chome	e, Minato-ku, Tokyo 108-8001, Japan	



Docket No : Only After Sept. 16, 2012

ASSIGNMENT WITH DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

Whereas, I/we, the undersigned inventor(s) hereinafter called assignor(s), have invented certain improvements described in the application identified below; (the "invention") and

Whereas, NEC Corporation, (assignce), desires to acquire the entire and exclusive right, title, and interest in the application and invention, and to any patents that may be obtained therefor in the United States, in any U.S. territorial possessions, and in any and all foreign countries;

Now therefore, for valuable consideration, receipt whereof is hereby acknowledged,

I/we, the above named assignor(s), hereby sell, assign and transfer to the above named assignee, its successors and assigns, the entire and exclusive right, title and interest in the application and the invention disclosed therein for the United States, U.S. territorial possessions, and in any and all foreign countries, including all divisions, and continuations, and continuations-in-part thereof, and all Letters Patent of the United States that may be granted thereon, and all reissues and reexaminations, renewals, and substitutions thereof, and including the right to claim priority under 35 U.S.C. §119, and all rights for past infringement, under the International Convention, and under any other relevant International Treaties and Arrangements, and I/we request the Director of the U.S. Patent and Trademark Office to issue any Letters Patent granted upon the invention set forth in the application to the assignee, its successors and assigns; I/we will execute without further consideration all papers deemed necessary by the assignee, and generally perform all necessary acts to aid the assignee, its successors and assigns, to obtain and enforce proper protection for the invention in connection with the United States and foreign applications, including but not limited to all divisional, continuation, reissue and other applications for Letters Patent on the invention and execute all assignments thereof to the above named assignee its successors and assigns, when called upon to do so by the assignee; and I/we will communicate to the above named assignee or its representatives all facts known to the undersigned respecting the invention, whenever requested, testify in any legal proceedings in which any of the applications or patents may become involved, and do generally everything necessary to assist the above named assignee its successors or assigns to obtain patent protection for the invention in the United States and foreign countries.

(Legalization not required for recording but is prima facie evidence of execution under 35 U.S.C. §261)

As the below flamed inventor, I hereby	. ecciaic ii	lai.								
This assignment with declaration is	C) Th	e attached	applicatio	n, or						
directed to	F26	i. sera a		St.C	965° Y .				N.C. (T.) T. (1)	012/03000
			: Аррисан 25, 2018 (ppucati	on Numbe	r <u>Plult/JP2</u>	<u>.018/020233</u>
The application is entitled:						· · · · · · · · ·				

COMMUNICATION METHOD, COMMUNICATION SYSTEM, AND USER EQUIPMENT

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

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application,

I have reviewed and understand the contents of the application for which this assignment with declaration is being submitted, including the claims.

I am aware of the duty to disclose to the U.S Patent and Trademark Office all information known to me to be material to patentability as defined in 37 CFR 1.56.

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

Authorization To Permit Access To Application by Participating Office

☐ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified application is filed to have access to the application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the application-as-filed with respect to: 1) the above-identified patent application-as-filed, 2) any foreign application to which the above-identified application claims priority under 35 USC 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application, and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Office.

NAME OF SOLE OR FIRST I	NVENTOR:	
Given Name	* .	8
(first and middle (if any))	Anand Raghawa	Family Name or Surname PRASAD
Inventor's signature		Date
Residence:		
Mailing Address: c/o NEC Co	orporation, 7-1, Shiba 5-chome, Min	ato-ku, Tokyo 108-8001, Japan
NAME OF SECOND INVENT	OR:	
Given Name (first and middle [if any])	Sivakamy	Family Name or Surname LAKSHMINARAYANAN
Inventor's signature		Date
Residence:		
c/o NEC Te Mailing Address: Perungudi, G	chnologies India Pvt. Ltd., SP Infoci Chennaî, Tamil Nadu 600096, India	ty, Block-A, 9th Floor, Module-2A, 40, MGR Salai, Kandanchavadi,
NAME OF THIRD INVENTOR		
Given Name (first and middle [if any])	Sivabalan	Family Name or Surname ARUMUGAM
Inventor's signature		Date
Residence:		
c/o NEC Tes Mailing Address: Perungudi, (chnologies India Pvt. Ltd., SP Infoci Chennai, Tamil Nadu 600096, India	ty, Block-A, 9th Floor, Module-2A, 40, MGR Salai, Kandanchavadi,
NAME OF FOURTH INVENT	OR:	
Given Name (first and middle [if any])	Sheeba Backia Mary	Family Name or Sumame BASKARAN
Inventor's signature		Date
Residence:		
Mailing c/o NEC Techi Address: Perungudi, Ch	nologies India Pvt. Ltd., SP Infocity, ennsi, Tamil Nadu 600086, India	Block-A, 9th Floor, Module-2A, 40, MGR Salai, Kandanchavadi,
NAME OF FIFTH INVENTOR		
Given Name (first and middle [if any])	Hironori	Family Name or Surname ITO
Inventor's signature /4	iveneni Sto	Date November 25, 2019
Residence: Tokyo, Japan		
Mailing Address: c/o NEC Corpo	eration, 7-1. Shiba 5-chome, Minato-	ku, Tokyo 108-8001, Japan

NAME OF S	SIXTH INVENTO	K:	8	*			
Given Name (first and mid	ldle [if any])	Toshiyuki	**************************************	Family Name or S	Sumame	TAMURA	33
Inventor's sig	mature			·	Date	200 pp	- 18
Residence:	Tokyo, Japan		**			3	20
Mailing Address:	c/o NEC Cor	poration, 7-1, Shiba	i 5-chome, Minate	5-ku, Tokyo 108-8001,	Japan		re .
NAME OF S	EVENTH INVEN	TOR:					
Given Name (first and mid	dle [if any])	Hisashi	* *	Family Name or S	Surname	FUTAKI	99 9999 - 20
Inventor's sig	nature			**	Date		*
Residence:	Tokyo, Japan				85 888 87 888 88 888 888 888 888 888 888 8		*
Mailing Address:	c/o NEC Con	poration, 7-1, Shiba	5-chome, Minate	o-ku, Tokyo 108-8001,	Japan		

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RECORDED: 11/27/2019