505831152 12/19/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5878085

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
REYNOLD RULLAN PANERGO	05/06/2019
LAKSHMI M. PUTTASWAMY	07/08/2019
MYCAH MATTOX	07/03/2019
SUBRAMANIAM NATARAJAN	05/03/2019
SELVAKUMAR SANTHARAM	05/03/2019
TIMOTHY WILLIAM ANTSEY	12/17/2019
NATHAN T. VANRHEENEN	05/07/2019

RECEIVING PARTY DATA

Name:	THE BOEING COMPANY
Street Address:	100 NORTH RIVERSIDE PLAZA
City:	CHICAGO
State/Country:	ILLINOIS
Postal Code:	60606-1596

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16721510

CORRESPONDENCE DATA

Fax Number: (503)224-7329

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: 503-224-7529

Email: boeing@dascenzoiplaw.com

Correspondent Name: DASCENZO INTELLECTUAL PROPERTY LAW, P.C.

Address Line 1: 1000 SW BROADWAY, SUITE 1555

Address Line 4: PORTLAND, OREGON 97205

ATTORNEY DOCKET NUMBER:	18-1101-US-NP-1; BNG3R5-1
NAME OF SUBMITTER:	IAN D. GATES
SIGNATURE:	/lan D. Gates/
DATE SIGNED:	12/19/2019

PATENT 505831152 REEL: 051338 FRAME: 0157

Total Attachments: 7 source=2019-12-19_Assignment_18-1101-US-NP-1_BNG3R5-1#page1.tif source=2019-12-19_Assignment_18-1101-US-NP-1_BNG3R5-1#page2.tif source=2019-12-19_Assignment_18-1101-US-NP-1_BNG3R5-1#page3.tif source=2019-12-19_Assignment_18-1101-US-NP-1_BNG3R5-1#page4.tif source=2019-12-19_Assignment_18-1101-US-NP-1_BNG3R5-1#page5.tif source=2019-12-19_Assignment_18-1101-US-NP-1_BNG3R5-1#page6.tif source=2019-12-19_Assignment_18-1101-US-NP-1_BNG3R5-1#page7.tif

PATENT REEL: 051338 FRAME: 0158

	ASS	IGNMENT	
Washington, Mycah Mattox, residin Karnataka, India, Selvakumar Sant Seattle, Washington, and Nathan T. certain new and useful inventions application entitled AIRCRAFT TO are making or have made applicati	ng at Mountlake Terra haram, residing at Ba VanRheenen, residin and improvements OGROUND DATA S on for LETTERS PA	rood, Washington, Lakshmi M. Puttaswam, ace, Washington, Subramaniam Natarajan, angalore, Karnataka, India, Timothy Williag at Renton, Washington (hereinafter "Ass (hereinafter "Invention") described in the YSTEMS AND COMPUTING METHOD TENT OF THE UNITED STATES, which or filed on	residing at Bangalore, am Anstey, residing at ignors") have invented United States patent S for which Assignors
having a place of business at 100 No Riverside Plaza, Chicago, Illinois 60 right, title and interest in and to the	orth Riverside Plaza, (0606-1596, USA (here Invention within the	ized and existing under the laws of the Sta Chicago, Illinois 60606-1596, with a mailing cinafter called "the Assignee"), is desirous the United States of America and its territorian to LETTERS PATENT that may be granted	g address of 100 North of acquiring the entire ial possessions and all
assigned, sold and transferred, and cittle and interest in and to the Invencountries, and in and to any LETT inventor's certificates and like gove patent application identified above provisional, divisional, reissue, contipatent or LETTERS PATENT identified benefit of such priorities as mainternational convention, for the prounted States LETTERS PATENT the United States of America. Assi successors or assigns to the full end the same would have been held and and authorize the Commissioner of	do assign, sell and tra- tion within the United ERS PATENT of the ernment grants that ma- and applications for inuation, continuation- tified herein, includin- tified herein, and the y now or hereafter be- betection of industrial to the various territorial on the various territorial gnee will hold all right of the term for which enjoyed by Assignors the U.S. Patent and	on, the receipt of which is hereby acknowled as fer to the Assignee, its successors and as all States of America and its territorial posses. United States and foreign countries, incay be granted for any and all portions there patent filed for the Invention in all fore-in-part applications and extensions of any geall applications claiming the priority of right to apply for LETTERS PATENT in the granted to Assignors by local laws or by property, together with the right to extend all possessions now owned or which may be after its own use and benefit and for the the LETTERS PATENT may be granted, a fif this assignment and sale had not been mather than the United States and foreign counterpatt in the United States and foreign counterpatt.	ssigns, the entire right, essions and all foreign luding utility models, eof, and in and to the eign countries and all of the applications for said applications for foreign countries with treaty, including any the protection of the hereafter acquired by use and benefit of its as fully and entirely as de. Assignors request rt officials of foreign
which title Assignors warrant to the consideration therefor, at the request acknowledgment of instruments, the reexamining United States and for	Assignee. Assignors t and expense of the A tat may be or become ign LETTERS PAT	at Assignors have a full and unencumbered further agree that Assignors will, without dassignee, do all lawful and just acts, include necessary for obtaining, sustaining, exENT or the like for the Invention, and ITERS PATENT particularly in cases of	lemanding any further ing the execution and tending, reissuing or for maintaining and
Assignee to insert the application nur	mber and filing date of	onsible for prosecuting the subject applical the subject application in the first paragrap	tion on behalf of the h of this Assignment.
IN TESTIMONY WHEREOF, I/We		gnment on the date specified below.	
REYNOLD RULLAN PANERGO	5/6/19 Date	LAKSHMI M. PUTTASWAMY	Date
MYCAH MATTOX	Commissional contraction of the	CUDDAMANTANIANA	
NICHIMALIUA	Date	SUBRAMANTAM NATARATAN	Date

Page 1 of 2 – ASSIGNMENT

PATENT REEL: 051338 FRAME: 0159

	ASSI	GNMENT	
Washington, Mycah Mattox, residing at Karnataka, India, Selvakumar Santharam Seattle, Washington, and Nathan T. Vanl certain new and useful inventions and application entitled AIRCRAFT TO GRO are making or have made application for	Mountlake Terrach, residing at Ban Rheenen, residing improvements (b DUND DATA SY r LETTERS PAT	ood, Washington, Lakshmi M. Puttaswamy, and Washington, Subramaniam Natarajan, resignatore, Karnataka, India, Timothy William at Renton, Washington (hereinafter "Assignaterinafter "Invention") described in the UNITEMS AND COMPUTING METHODS SENT OF THE UNITED STATES, which are filed ona	siding at Bangalore Anstey, residing a nors") have invented Juited States paten for which Assignors application has been
having a place of business at 100 North R Riverside Plaza, Chicago, Illinois 60606- right, title and interest in and to the Inve	iverside Plaza, Cl 1596, USA (herei ention within the	ted and existing under the laws of the State hicago, Illinois 60606-1596, with a mailing a mafter called "the Assignee"), is desirous of United States of America and its territorial a LETTERS PATENT that may be granted the	address of 100 North acquiring the entire possessions and all
assigned, sold and transferred, and do assittle and interest in and to the Invention countries, and in and to any LETTERS inventor's certificates and like governme patent application identified above and provisional, divisional, reissue, continuationater of LETTERS PATENT identified patent or LETTERS PATENT identified full benefit of such priorities as may not international convention, for the protectionated States LETTERS PATENT to the the United States of America. Assignee successors or assigns to the full end of the the same would have been held and enjoy and authorize the Commissioner of the	sign, sell and tran within the United PATENT of the ent grants that ma applications for ion, continuation—herein, including herein, and the rew or hereafter be on of industrial parious territorial will hold all righe term for which the d by Assignors i U.S. Patent and	on, the receipt of which is hereby acknowled sfer to the Assignee, its successors and assignets of America and its territorial possess. United States and foreign countries, incluy be granted for any and all portions thereo patent filed for the Invention in all foreign in-part applications and extensions of any of all applications claiming the priority of sight to apply for LETTERS PATENT in forgranted to Assignors by local laws or by the property, together with the right to extend the possessions now owned or which may be heart to the LETTERS PATENT may be granted, as fithis assignment and sale had not been made. Trademark Office, and foreign countries.	gns, the entire right, sions and all foreign ding utility models, of, and in and to the mean countries and all the applications for reign countries with reaty, including any he protection of the areafter acquired by se and benefit of its fully and entirely as a Assignors request officials of foreign
which title Assignors warrant to the Assignors consideration therefor, at the request and acknowledgment of instruments, that in reexamining United States and foreign	gnee. Assignors is expense of the A may be or become LETTERS PAT	at Assignors have a full and unencumbered to further agree that Assignors will, without de assignee, do all lawful and just acts, including the necessary for obtaining, sustaining, extended ENT or the like for the Invention, and for TTERS PATENT particularly in cases of in	manding any further ng the execution and ending, reissuing or for maintaining and
Assignors authorize and direct any of the Assignee to insert the application number	ne attorneys respo	onsible for prosecuting the subject applicati the subject application in the first paragraph	on on behalf of the
IN TESTIMONY WHEREOF, I/We have	e signed this Assig	nment on the date specified below.	
		Lakshmi M. Puttaswamy	7/8/2019
REYNOLD RULLAN PANERGO	Date	LAKSHMI M. PUTTASWAMY	Date
MYCAH MATTOX	Date		Date

Page 1 of 2 – ASSIGNMENT

PATENT REEL: 051338 FRAME: 0160

ASSIGNMENT	
WHEREAS, Reynold Rullan Panergo, residing at Lynnwood, Washington, Lakshmi M. Puttaswamy, residing Washington, Mycah Mattox, residing at Mountlake Terrace, Washington, Subramaniam Natarajan, residing at Karnataka, India, Selvakumar Santharam, residing at Bangalore, Karnataka, India, Timothy William Anstey Seattle, Washington, and Nathan T. VanRheenen, residing at Renton, Washington (hereinafter "Assignors") is certain new and useful inventions and improvements (hereinafter "Invention") described in the United application entitled AIRCRAFT TO GROUND DATA SYSTEMS AND COMPUTING METHODS for whi are making or have made application for LETTERS PATENT OF THE UNITED STATES, which applicated duly executed by Assignors concurrently herewith; or filed on as Application for Letters and the second concurrently herewith are filed on as Application for Letters and the second concurrently herewith are filed on as Application for Letters and the second concurrently herewith are filed on as Application for Letters and the second concurrently herewith are filed on as Application for Letters and the second concurrently herewith are filed on as Application for Letters and the second concurrently herewith are filed on as Application for Letters are filed on as Applicatio	at Bangalore y, residing a nave invented States paten ch Assignors ion has beer
WHEREAS, The Boeing Company, a corporation organized and existing under the laws of the State of Del having a place of business at 100 North Riverside Plaza, Chicago, Illinois 60606-1596, with a mailing address Riverside Plaza, Chicago, Illinois 60606-1596, USA (hereinafter called "the Assignee"), is desirous of acquiring right, title and interest in and to the Invention within the United States of America and its territorial posses foreign countries, and in and to any United States or foreign LETTERS PATENT that may be granted therefor;	of 100 Northing the entire sions and all
NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, As assigned, sold and transferred, and do assign, sell and transfer to the Assignee, its successors and assigns, the title and interest in and to the Invention within the United States of America and its territorial possessions and countries, and in and to any LETTERS PATENT of the United States and foreign countries, including ut inventor's certificates and like government grants that may be granted for any and all portions thereof, and patent application identified above and applications for patent filed for the Invention in all foreign countries, including all applications and extensions of any of the application or LETTERS PATENT identified herein, including all applications claiming the priority of said application or LETTERS PATENT identified herein, and the right to apply for LETTERS PATENT in foreign or full benefit of such priorities as may now or hereafter be granted to Assignors by local laws or by treaty, in international convention, for the protection of industrial property, together with the right to extend the protectional convention, for the protection of industrial property, together with the right to extend the protection of States LETTERS PATENT to the various territorial possessions now owned or which may be hereafter the United States of America. Assignee will hold all rights for its own use and benefit and for the use and successors or assigns to the full end of the term for which the LETTERS PATENT may be granted, as fully and the same would have been held and enjoyed by Assignors if this assignment and sale had not been made. Assigned authorize the Commissioner of the U.S. Patent and Trademark Office, and foreign counterpart official patent offices, to issue the respective LETTERS PATENT in the United States and foreign countries when	e entire right, and all foreign ility models, in and to the tries and all plications for polications for puntries with including any ection of the acquired by benefit of its and entirely as gnors request ls of foreign
Assignors further covenant and agree with the Assignee that Assignors have a full and unencumbered title to the which title Assignors warrant to the Assignee. Assignors further agree that Assignors will, without demanding consideration therefor, at the request and expense of the Assignee, do all lawful and just acts, including the exacknowledgment of instruments, that may be or become necessary for obtaining, sustaining, extending, reexamining United States and foreign LETTERS PATENT or the like for the Invention, and for main perfecting the Assignee's right to the Invention and LETTERS PATENT particularly in cases of interfered opposition and litigation.	g any further xecution and reissuing or ntaining and
Assignors authorize and direct any of the attorneys responsible for prosecuting the subject application on be Assignee to insert the application number and filing date of the subject application in the first paragraph of this IN TESTIMONY WHEREOF, I/We have signed this Assignment on the date specified below.	behalf of the Assignment.
REYNOLD RULLAN PANERGO Date LAKSHMI M. PUTTASWAMY Dat	e
7/3/19	

Page 1 of 2 – ASSIGNMENT

Date

MYCAH MATTOX

SUBRAMANIAM NATARAJAN

Date

	ASS	IGNMENT	
Washington, Mycah Mattox, residing a Karnataka, India. Selvakumar Santhara Seattle, Washington, and Nathan T. Va certain new and useful inventions an application entitled AIRCRAFT TO G are making or have made application	at Mountlake Terra nm, residing at Bar nRheenen, residing d improvements (ROUND DATA S' for LETTERS PAT	ood, Washington, Lakshmi M. Puttaswamy, ce. Washington, Subramaniam Natarajan. rengalore, Karnataka, India, Timothy William at Renton, Washington (hereinafter "Assighereinafter "Invention") described in the YSTEMS AND COMPUTING METHODS FENT OF THE UNITED STATES, which or filed on	esiding at Bangalore, a Anstey, residing at mors") have invented United States patent for which Assignors application has been
having a place of business at 100 North Riverside Plaza, Chicago, Illinois 6060 right, title and interest in and to the In	Riverside Plaza, C 6-1596, USA (here vention within the	zed and existing under the laws of the State hicago, Illinois 60606-1596, with a mailing inafter called "the Assignee"), is desirous of United States of America and its territoria in LETTERS PATENT that may be granted t	address of 100 North f acquiring the entire I possessions and all
assigned, sold and transferred, and do a title and interest in and to the Inventior countries, and in and to any LETTER inventor's certificates and like government application identified above an provisional, divisional, reissue, continuated patent or LETTERS PATENT identified patent or LETTERS PATENT identified patent of LETTERS PATENT identified full benefit of such priorities as may international convention, for the protect United States LETTERS PATENT to the United States of America. Assigned successors or assigns to the full end of the same would have been held and enjoyant authorize the Commissioner of the	assign, sell and trar i within the United S PATENT of the ment grants that mad applications for ation, continuation- ed herein, including the herein, and the roow or hereafter be ation of industrial parties are will hold all righthe term for which byed by Assignors in U.S. Patent and	on, the receipt of which is hereby acknowled asfer to the Assignee, its successors and assist States of America and its territorial posses at United States and foreign countries, including be granted for any and all portions there patent filed for the Invention in all foreign-in-part applications and extensions of any of gall applications claiming the priority of right to apply for LETTERS PATENT in forgranted to Assignors by local laws or by toroperty, together with the right to extend to I possessions now owned or which may be fats for its own use and benefit and for the uthe LETTERS PATENT may be granted, as f this assignment and sale had not been made. Trademark Office, and foreign countries.	igns, the entire right, sions and all foreign ading utility models, of, and in and to the grant countries and all f the applications for said applications for oreign countries with treaty, including any the protection of the increafter acquired by use and benefit of its fully and entirely as e. Assignors request officials of foreign
which title Assignors warrant to the Assignors warrant to the Assignors warrant to the Assignors at the request an acknowledgment of instruments, that reexamining United States and foreign	signee. Assignors if d expense of the A may be or becom n LETTERS PAT	at Assignors have a full and unencumbered to further agree that Assignors will, without de assignee, do all lawful and just acts, including the necessary for obtaining, sustaining, exter ENT or the like for the Invention, and Interest PATENT particularly in cases of in	manding any further ng the execution and ending, reissuing or for maintaining and
		onsible for prosecuting the subject applicati the subject application in the first paragraph	
IN TESTIMONY WHEREOF, I/We have	ve signed this Assig	gnment on the date specified below.	
REYNOLD RULLAN PANERGO	Date	LAKSHMI M. PUTTASWAMY	Date
MYCAH MATTOX	Date	SUBRAMANIAM NATARAJAN	Date 03 MAY 2019
			1

Page 1 of 2 - ASSIGNMENT

helf o	3) MAY /219		
SELVAKUMAR SANTHARAM	Date	TIMOTHY WILLIAM ANSTEY	Date
NATHAN'T VANRHEENEN	russensulvernasselvirinisteidenkelvirine.		

		Timothy William ansty 12/17	119
SELVAKUMAR SANTHARAM	Date	TIMOTHY WILLIAM ANSTEY V Date	
NATHAN'T VANRHEENEN	Date		

ELVAKUMAR	SANTHARAM	Date

TIMOTHY WILLIAM ANSTEY

Date

NATHAN T. VANRHEENEN

Date

Page 2 of 2 – ASSIGNMENT

RECORDED: 12/19/2019