506273234 09/26/2020

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
XIANBIN CAO	09/09/2020
WENBO DU	09/09/2020
JINTONG ZHANG	09/09/2020
HAICHAO AN	09/09/2020
YUMENG LI	09/09/2020
XI ZHU	09/09/2020

RECEIVING PARTY DATA

Name:	BEIHANG UNIVERSITY	
Street Address:	NO. 37, XUEYUAN ROAD, HAIDIAN DISTRICT	
City:	BEIJING	
State/Country:	CHINA	
Postal Code:	100191	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	17033785

CORRESPONDENCE DATA

Fax Number: (206)374-2899

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: 206-372-3162 dpai@pailaw.com Email:

CHAO-CHANG DAVID PAI **Correspondent Name:**

3019 NE 127TH ST. Address Line 1: Address Line 2: P. O. BOX 25750

SEATTLE, WASHINGTON 98165 Address Line 4:

ATTORNEY DOCKET NUMBER:	IP141516
NAME OF SUBMITTER:	CHAO-CHANG DAVID PAI
SIGNATURE:	/Chao-Chang David Pai/
DATE SIGNED:	09/26/2020

Total Attachments: 6 source=assignment_signed#page1.tif source=assignment_signed#page2.tif source=assignment_signed#page3.tif source=assignment_signed#page4.tif source=assignment_signed#page5.tif source=assignment_signed#page6.tif

Whereas, I/We, Xianbin Cao of Beijing, China , hereafter referred to as inventor(s), have invented certain new and useful improvements in AIRPLANE FLIGHT PATH PLANNING METHOD AND DEVICE BASED ON THE PIGEON-INSPIRED OPTIMIZATION of which an application for a United States Patent was filed on under Application No. , which is an application entering the National Stage under 35 U.S.C. 371 of filed for which an application for a United States Patent was executed on Segumber 1, 2000, and Whereas, Beihang University of Beijing, China , herein referred to as "assignee", whose mailing address is No. 37, Xueyuan Road, Haidian District Beijing 100191, China , is desirous of acquiring the entire right, title and interest in the same; Now, therefore, in consideration of the sum of ten dollars (S 10), the receipt whereof is acknowledged, and other good and valuable consideration, I/We, the applicant(s), by these presents do sell, assign and transfer unto said assignee the full and exclusive right to said invention in the United States and the entire right, title and interest in and to any and all Patents which may be granted therefor in the United States, I/We hereby authorize and request the Director of the U.S. Patent and Trademark Office to issue said United States Patent(s) to said assignee, of the entire right, title, and interest in and to the same, for his sole use and behoof, and for the use and behoof of his legal representatives, to the full end of the term for which said Patent(s) may be granted, as fully and entirely as the same would have been held by me/us had this assignment and sale not been made. Executed this 9th day of September 2020 at Beijing, China	ASSIGNMENT OF APPLICATION	Docket Number IP141516	
In the property of the same; Now, therefore, in consideration of the sum of the same; Now, therefore, in consideration of the same; Now, therefore, in consideration of the sum of the same; Now, therefore, in consideration of the sum of the same; Now, therefore, in consideration of the same; Now, therefore, in consideration of the sum of the same; Now, therefore, in consideration of the sum of the same; Now, therefore, in consideration of the sum of the same; Now, therefore, in consideration of the sum of the same; Now, therefore, in consideration of the sum of the same; Now, therefore, in consideration of the sum of the same; Now, therefore, in consideration of the sum of the same; Now, therefore, in consideration of the sum of the same; Now, th	Whereas, I/We, Xianbin Cao of Beijing, China , hereafter		
Application No			
In the same; Now, therefore, in consideration of the sum of ten dollars (\$\frac{10}{2}\$), the receipt whereof is acknowledged, and other good and valuable consideration, I/We, the applicant(\$\struct{0}\$), by these presents do sell, assign and transfer unto said assignee the full and exclusive right to said invention in the United States and the entire right, title and interest in the united states and therefor in the United States, I/We hereby authorize and request the Director of the U.S. Patent and Trademark Office to issue said United States Patent(\$\struct{0}\$) to said assignee, of the entire right, title, and interest in and to the sole use and behoof; and for the use and behoof of his legal representatives, to the full end of the term for which said Patent(\$\struct{0}\$) may be granted, as fully and entirely as the same would have been held by me/us had this assignment and sale not been made. Executed this \$\frac{9 \tauh}{2} h\$ day of \$\frac{5 \text{ptember}}{2}\$ 2020. at \$\text{Beljing, China}\$	☐ for which an application for a United States Patent was fil-	ed onunder	
Whereas, Beihang University of Beijing, China herein referred to as "assignee", whose mailing address is No. 37, Xueyuan Road, Haidian District Beijing 100191, China his desirous of acquiring the entire right, title and interest in the same; Now, therefore, in consideration of the sum of ten dollars (\$\frac{10}{2}\$), the receipt whereof is acknowledged, and other good and valuable consideration, J/We, the applicant(s), by these presents do sell, assign and transfer unto said assignee the full and exclusive right to said invention in the United States and the entire right, title and interest in and to any and all Patents which may be granted therefor in the United States, J/We hereby authorize and request the Director of the U.S. Patent and Trademark Office to issue said United States Patent(s) to said assignee, of the entire right, title, and interest in and to the same, for his sole use and behoof; and for the use and behoof of his legal representatives, to the full end of the term for which said Patent(s) may be granted, as fully and entirely as the same would have been held by me/us had this assignment and sale not been made. Executed this 4th day of the material patents are considered the same would have been held by me/us had this assignment and sale not been made.		The state of the s	
Whereas, Beihang University of Beijing, China herein referred to as "assignee", whose mailing address is No. 37, Xueyuan Road, Haidian District Beijing 100191, China his desirous of acquiring the entire right, title and interest in the same; Now, therefore, in consideration of the sum of ten dollars (\$ 10), the receipt whereof is acknowledged, and other good and valuable consideration, I/We, the applicant(s), by these presents do sell, assign and transfer unto said assignee the full and exclusive right to said invention in the United States and the entire right, title and interest in and to any and all Patents which may be granted therefor in the United States, I/We hereby authorize and request the Director of the U.S. Patent and Trademark Office to issue said United States Patent(s) to said assignee, of the entire right, title, and interest in and to the same, for his sole use and behoof; and for the use and behoof of his legal representatives, to the full end of the term for which said Patent(s) may be granted, as fully and entirely as the same would have been held by me/us had this assignment and sale not been made. Executed this 9th day of September 2020 at Beijing, China	under 35 U.S.C. 371 of	_tiled	
Reljing 100191, China , is desirous of acquiring the entire right, title and interest in the same; Now, therefore, in consideration of the sum of ten dollars (\$ 10), the receipt whereof is acknowledged, and other good and valuable consideration, I/We, the applicant(s), by these presents do sell, assign and transfer unto said assignee the full and exclusive right to said invention in the United States and the entire right, title and interest in and to any and all Patents which may be granted therefor in the United States, I/We hereby authorize and request the Director of the U.S. Patent and Trademark Office to issue said United States Patent(s) to said assignee, of the entire right, title, and interest in and to the same, for his sole use and behoof; and for the use and behoof of his legal representatives, to the full end of the term for which said Patent(s) may be granted, as fully and entirely as the same would have been held by me/us had this assignment and sale not been made. Executed this 9th day of 1020	🗹 for which an application for a United States Patent was execu	uted on <u>September 9,2000</u> , and	
Beiling 100191, China , is desirous of acquiring the entire right, title and interest in the same; Now, therefore, in consideration of the sum of ten dollars (\$10), the receipt whereof is acknowledged, and other good and valuable consideration, I/We, the applicant(s), by these presents do sell, assign and transfer unto said assignee the full and exclusive right to said invention in the United States and the entire right, title and interest in and to any and all Patents which may be granted therefor in the United States, I/We hereby authorize and request the Director of the U.S. Patent and Trademark Office to issue said United States Patent(s) to said assignee, of the entire right, title, and interest in and to the same, for his sole use and behoof; and for the use and behoof of his legal representatives, to the full end of the term for which said Patent(s) may be granted, as fully and entirely as the same would have been held by me/us had this assignment and sale not been made. Executed this 9th day of 1000 centered. 2020 . Beiling, China	Whereas, Beihang University of Beiji	ng, China herein	
Now, therefore, in consideration of the sum of ten dollars (\$\frac{10}{\}\), the receipt whereof is acknowledged, and other good and valuable consideration, I/We, the applicant(s), by these presents do sell, assign and transfer unto said assignee the full and exclusive right to said invention in the United States and the entire right, title and interest in and to any and all Patents which may be granted therefor in the United States, I/We hereby authorize and request the Director of the U.S. Patent and Trademark Office to issue said United States Patent(s) to said assignee, of the entire right, title, and interest in and to the same, for his sole use and behoof; and for the use and behoof of his legal representatives, to the full end of the term for which said Patent(s) may be granted, as fully and entirely as the same would have been held by me/us had this assignment and sale not been made. Executed this \(\frac{9 \tau^{\text{h}}}{2020} \) day of \(\subseteq \text{ptember} \) 2020 at \(\text{Beijing, China} \)	referred to as "assignee", whose mailing address is No. 37, Xuc	eyuan Road, Haidian District	
Now, therefore, in consideration of the sum of ten dollars (\$\frac{10}{\}\), the receipt whereof is acknowledged, and other good and valuable consideration, I/We, the applicant(s), by these presents do sell, assign and transfer unto said assignee the full and exclusive right to said invention in the United States and the entire right, title and interest in and to any and all Patents which may be granted therefor in the United States, I/We hereby authorize and request the Director of the U.S. Patent and Trademark Office to issue said United States Patent(s) to said assignee, of the entire right, title, and interest in and to the same, for his sole use and behoof; and for the use and behoof of his legal representatives, to the full end of the term for which said Patent(s) may be granted, as fully and entirely as the same would have been held by me/us had this assignment and sale not been made. Executed this \(\frac{Q \tauh}{\tauh} \) day of \(\superset \) \(Beljing 100191, China , is desirous of acquiri	ng the entire right, title and	
is acknowledged, and other good and valuable consideration, I/We, the applicant(s), by these presents do sell, assign and transfer unto said assignee the full and exclusive right to said invention in the United States and the entire right, title and interest in and to any and all Patents which may be granted therefor in the United States, I/We hereby authorize and request the Director of the U.S. Patent and Trademark Office to issue said United States Patent(s) to said assignee, of the entire right, title, and interest in and to the same, for his sole use and behoof; and for the use and behoof of his legal representatives, to the full end of the term for which said Patent(s) may be granted, as fully and entirely as the same would have been held by me/us had this assignment and sale not been made. Executed this Other day of September 2020 Beijing, China	înterest in the same;		
at Beijing, China	is acknowledged, and other good and valuable consideration, I/We, the applicant(s), by these presents do sell, assign and transfer unto said assignee the full and exclusive right to said invention in the United States and the entire right, title and interest in and to any and all Patents which may be granted therefor in the United States, I/We hereby authorize and request the Director of the U.S. Patent and Trademark Office to issue said United States Patent(s) to said assignee, of the entire right, title, and interest in and to the same, for his sole use and behoof; and for the use and behoof of his legal representatives, to the full end of the term for which said Patent(s) may be granted, as fully and entirely as the same would have been held by		
at Beijing, China	Executed this 9th day of September	, 2020	
	at Beijing, China		
Jon Si Cao			
· · · · · · · · · · · · · · · · · · ·			
Signature			
Xianbin Cao			
Printed Name			
Note: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required. See below.*			

ASSIGNMENT OF APPLICATION	Docket Number IP141516	
Whereas, I/We, Wenbo Du of Beijing, China hereafter		
referred to as inventor(s), have invented certain new and useful AIRPLANE FLIGHT PATH PLANNING METHOD AND DEVICE BASED ON THE		
☐ for which an application for a United States Patent was fi	led onunder	
Application No, which is an applicati	000000000000000000000000000000000000000	
under 35 U.S.C. 371 of	filed	
☑ for which an application for a United States Patent was exec		
Whereas, Beihang University of Beij	ing, China , herein	
referred to as "assignee", whose mailing address is No. 37. Xu	eyuan Road, Haidian District	
Beijing 100191, China , is desirous of acquir	ing the entire right, title and	
interest in the same;		
Now, therefore, in consideration of the sum of ten dollars (\$ 10), the receipt whereof is acknowledged, and other good and valuable consideration, I/We, the applicant(s), by these presents do sell, assign and transfer unto said assignee the full and exclusive right to said invention in the United States and the entire right, title and interest in and to any and all Patents which may be granted therefor in the United States, I/We hereby authorize and request the Director of the U.S. Patent and Trademark Office to issue said United States Patent(s) to said assignee, of the entire right, title, and interest in and to the same, for his sole use and behoof; and for the use and behoof of his legal representatives, to the full end of the term for which said Patent(s) may be granted, as fully and entirely as the same would have been held by me/us had this assignment and sale not been made. Executed this		
at Beijing, China '		
(Ne	nbo Du	
Signature Signature		
Wenbo Du		
Pri	nted Name	
Note: Signatures of all the inventors or assignees of record of the entire int required. Submit multiple forms if more than one signature is required. See		

ASSIGNMENT OF APPLICATION	Docket Number JP141516	
Whereas, I/We,Jintong Zhang ofBeijing,	China , hereafter	
referred to as inventor(s), have invented certain new and useful AIRPLANE FLIGHT PATH PLANNING METHOD AND DEVICE BASED ON THE		
☐ for which an application for a United States Patent was file	ed onunder	
Application No, which is an application under 35 U.S.C. 371 of		
of for which an application for a United States Patent was execu	199 1997 - Santa Barriero (1997)	
Whereas, Beihang University of Beijii	ng, China , herein	
referred to as "assignee", whose mailing address is No. 37, Xue		
Beijing 100191, China , is desirous of acquiri	ng the entire right, title and	
interest in the same;	** *	
Now, therefore, in consideration of the sum of len dollars (\$ 10), the receipt whereof is acknowledged, and other good and valuable consideration, I/We, the applicant(s), by these presents do sell, assign and transfer unto said assignee the full and exclusive right to said invention in the United States and the entire right, title and interest in and to any and all Patents which may be granted therefor in the United States, I/We hereby authorize and request the Director of the U.S. Patent and Trademark Office to issue said United States Patent(s) to said assignee, of the entire right, title, and interest in and to the same, for his sole use and behoof; and for the use and behoof of his legal representatives, to the full end of the term for which said Patent(s) may be granted, as fully and entirely as the same would have been held by me/us had this assignment and sale not been made.		
Executed this 9th day of September , 2020 ,		
at Beijing, China		
Jinisog-Zheeg Signature		
Jintong Zhang		
Print	ed Name	
Note: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required. See below.*		
*☑ Total of 6 forms are submitted.		

ASSIGNMENT OF APPLICATION	Docket Number IP141516	
Whereas, I/We, Haichao An of Beijing, China , hereafter		
referred to as inventor(s), have invented certain new and usef AIRPLANE FLIGHT PATH PLANNING METHOD AND DEVICE BASED ON TH		
☐ for which an application for a United States Patent was filed onunder		
Application No, which is an applica	tion entering the National Stage	
under 35 U.S.C. 371 of		
☑ for which an application for a United States Patent was exe	cuted on September 9, 1999, and	
Whereas, Beihang University of Be		
referred to as "assignee", whose mailing address is No. 37, X	ueyuan Road, Haidian District	
Beijing 100191, China , is desirous of acqu	iring the entire right, title and	
interest in the same;		
Now, therefore, in consideration of the sum of ten dollars (\$ 10), the receipt whereof is acknowledged, and other good and valuable consideration, I/We, the applicant(s), by these presents do sell, assign and transfer unto said assignee the full and exclusive right to said invention in the United States and the entire right, title and interest in and to any and all Patents which may be granted therefor in the United States, I/We hereby authorize and request the Director of the U.S. Patent and Trademark Office to issue said United States Patent(s) to said assignee, of the entire right, title, and interest in and to the same, for his sole use and behoof; and for the use and behoof of his legal representatives, to the full end of the term for which said Patent(s) may be granted, as fully and entirely as the same would have been held by me/us had this assignment and sale not been made.		
Executed this <u>9-e/s</u> day of <u>Septambler</u>	<u> </u>	
at Beljing, China		
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have	hao on	
	ignature	
	chao An	
PT	inted Name	
Note: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required. See below.*		
*1/2 Total of 6 forms are submitted.		

ASSIGNMENT OF APPLICATION	Docket Number	
	IP141516	
Whereas, I/We, Yumeng Li of Beijing,	China , hereafter	
referred to as inventor(s), have invented certain new and useful	improvements in	
AIRPLANE FLIGHT PATH PLANNING METHOD AND DEVICE BASED ON THE	PIGEON-INSPIRED OPTIMIZATION	
for which an application for a United States Patent was filed on under		
Application No, which is an application	on entering the National Stage	
under 35 U.S.C. 371 of		
	8	
of for which an application for a United States Patent was execu	ited on <u>September 9, 202</u> 0 and	
Whereas, Beihang University of Beijii	ng, China , herein	
referred to as "assignee", whose mailing address is No. 37, Xue	yuan Road, Haidian District	
Beijing 100191, China , is desirous of acquiri	ng the entire right, title and	
interest in the same;	¥	
	*	
Now, therefore, in consideration of the sum of ten dollars (\$_10_), the receipt whereof is acknowledged, and other good and valuable consideration, I/We, the applicant(s), by these presents do sell, assign and transfer unto said assignee the full and exclusive right to said invention in the United States and the entire right, title and interest in and to any and all Patents which may be granted therefor in the United States, I/We hereby authorize and request the Director of the U.S. Patent and Trademark Office to issue said United States Patent(s) to said assignee, of the entire right, title, and interest in and to the same, for his sole use and behoof; and for the use and behoof of his legal representatives, to the full end of the term for which said Patent(s) may be granted, as fully and entirely as the same would have been held by me/us had this assignment and sale not been made. Executed this		
at Beijing, China		
Yume Sig	ry Li nature	
Yumeng Li		
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	ed Name	
Note: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required. See below.*		
5 Total of 6 farms are submitted	5.	

ASSIGNMENT OF APPLICATION	Docket Number IP141516	
Whereas, I/We, Xi Zhu of Beijing	, China , hereafter	
referred to as inventor(s), have invented certain new and useful AIRPLANE FLIGHT PATH PLANNING METHOD AND DEVICE BASED ON THE		
☐ for which an application for a United States Patent was fil	ed onunder	
Application No, which is an application under 35 U.S.C. 371 of	on entering the National Stage	
☑ for which an application for a United States Patent was exce	uted on <u>September 7,2020</u> , and	
Whereas, <u>Beihang University</u> of Beiji	ing, China herein	
referred to as "assignee", whose mailing address is No. 37. Xue	eyuan Road, Haidian District	
Beijing 100191, China , is desirous of acquir	ing the entire right, title and	
interest in the same;		
Now, therefore, in consideration of the sum of ten dollars (\$ 10), the receipt whereof is acknowledged, and other good and valuable consideration, I/We, the applicant(s), by these presents do sell, assign and transfer unto said assignee the full and exclusive right to said invention in the United States and the entire right, title and interest in and to any and all Patents which may be granted therefor in the United States, I/We hereby authorize and request the Director of the U.S. Patent and Trademark Office to issue said United States Patent(s) to said assignee, of the entire right, title, and interest in and to the same, for his sole use and behoof; and for the use and behoof of his legal representatives, to the full end of the term for which said Patent(s) may be granted, as fully and entirely as the same would have been held by me/us had this assignment and sale not been made.		
Executed this 9th day of September at Beijing, China	, 2020 ,	
at Beijing, Cinna		
\mathcal{N} : $\mathcal{I}_{k,a}$		
Signature		
Xi Zhu		
Printed Name		
Note: Signatures of all the inventors or assignees of record of the entire interequired. Submit multiple forms if more than one signature is required. See		
*// Total of 6 forms are submitted.	President 1990	

RECORDED: 09/26/2020