11/01/2018 505171783 PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5218551

10/29/2018

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	
CONVEYING PARTY DATA	·	
Name		Execution Date
ZHONGXING WANG		10/29/2018
TIANXIN ZHANG		10/29/2018
RENZHONG PEI		10/29/2018
YONGYOU YANG		10/29/2018

YONGYOU YANG

QINGYUN DI

RECEIVING PARTY DATA

Name:	INSTITUTE OF GEOLOGY AND GEOPHYSICS, CHINESE ACADEMY OF SCIENCES	
Street Address:	NO. 19 BEITUCHENG WEST ROAD	
Internal Address:	CHAOYANG DISTRICT	
City:	BEIJING	
State/Country:	CHINA	
Postal Code:	100029	

PROPERTY NUMBERS Total: 1

Property Type	Number	
Application Number:	16178310	

CORRESPONDENCE DATA

Fax Number: (703)563-9748 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: (703)745-5495 Email: docket@nkllaw.com Correspondent Name: NOVICK, KIM & LEE, PLLC Address Line 1: 3251 OLD LEE HIGHWAY, SUITE 404 Address Line 4: FAIRFAX, VIRGINIA 22030

ATTORNEY DOCKET NUMBER:	PA217.0043
NAME OF SUBMITTER:	YIN-YU CHEN
SIGNATURE:	/Yin-Yu Chen/
DATE SIGNED:	11/01/2018

Total Attachments: 2

source=PA217-0043-Assignment#page1.tif source=PA217-0043-Assignment#page2.tif

Customer No.: 105,857 Docket No.: PA217.0043 Page 1 of 2

<u>ASSIGNMENT</u>

WHEREAS I/We, the below named inventor(s), [hereinafter referred to as Assignor(s)], have made an invention entitled:

Method and System for Control and Data Processing in Field Operation with Ground Electromagnetic Instrument

for which I/WE executed an application for United States Letters Patent that was filed or will be filed in the United States Patent and Trademark Office; and

WHEREAS, Institute of Geology and Geophysics, Chinese Academy of Sciences, a corporation of CHINA, whose post office address is No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China (hereinafter referred to as Assignee), is desirous of securing the entire right, title, and interest in and to this invention, the application for United States Letters Patent on this invention and the Letters Patent to be issued upon this application;

NOW THEREFORE, be it known that, for good and valuable consideration the receipt of which from Assignee(s) is hereby acknowledged, I/We, as Assignor(s), have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the Assignee(s), its/their lawful successors and assigns, my/our entire right, title, and interest in and to this invention and this application, and all divisions, and continuations thereof, and all Letters Patent of the United States which may be granted thereon, and all reissues thereof; and I/We hereby authorize and request the Commissioner of Patents and Trademarks of the United States to issue all Letters Patent for this invention to Assignee(s), its/their successors and assigns, in accordance with the terms of this Assignment;

AND, I/WE HEREBY covenant that I/We have the full right to convey the interest assigned by this Assignment, and I/We have not executed and will not execute any agreement in conflict with this Assignment;

AND, I/WE HEREBY further covenant and agree that I/We will, without further consideration, communicate with Assignee(s), its/their successors and assigns, any facts known to me/us respecting this invention, and testify in any legal proceeding, sign all lawful papers when called upon to do so, execute and deliver all papers that may be necessary or desirable to perfect the title to this invention in said Assignee(s), its/their successors and assigns, execute all divisional, continuation, and reissue applications, make all rightful oaths and generally do everything possible to aid Assignee(s), its/their successors and assigns, to obtain and enforce proper patent protection for this invention in the United States, it being understood that any expense incident to the execution of such papers shall be borne by the Assignee(s), its/their successors and assigns.

PATENT REEL: 047388 FRAME: 0161

Customer No.: 105,857 Docket No.: PA217,0043 Page 2 of 2

AND, I/WE HEREBY authorize and request the attorneys I/we have empowered in the Power of Attorney in this application, to insert here in parentheses (Application No. <u>16/178,310</u>, filed <u>November 1, 2018</u>) the filing date and application number of said application when known.

IN TESTIMONY WHEREOF, I/We have hereunto set our hands.

WANG, Zhongxing $\mathcal{W} \mathcal{W} \mathcal{G}$, Zhongxing $\mathcal{V} 18 \cdot 10 \cdot 29$ ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CN2. FULL NAME OF SECOND ASSIGNOR, IF ANY ZHANG, TianxinASSIGNOR'S SIGNATURE ZHANG, TianxinDATE Z018 \cdot 10 - 29ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CN3. FULL NAME OF THIRD ASSIGNOR, IF ANY PEI, RenzhongASSIGNOR'S SIGNATURE PE1, RenzhongDATE Z018 \cdot 10 - 29ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CNADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CNADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CNADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaDATE 2018 · 10 · 29ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaDATE 2018 · 10 · 29ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CNNo. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CNS. FULL NAME OF FIFTH ASSIGNOR, IF ANY B, QingyunASSIGNOR'S SIGNATURE ASSIGNOR'S SIGNATURE DI , QingyunDATE 2018 · 10 · 29	A FULL MANE OF OOLE OD FIDOT ADDIOUOD	LA DALANIA DIA NANATURA	In A TO
ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CN2. FULL NAME OF SECOND ASSIGNOR, IF ANY ZHANG, TianxinASSIGNOR'S SIGNATURE ZHANG, TianxinDATE $2018 \cdot 10 - 29$ ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CN3. FULL NAME OF THIRD ASSIGNOR, IF ANY PEI, RenzhongASSIGNOR'S SIGNATURE $IE1$, RenzhongDATE $IE1$, RenzhongADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CNADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CNADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CNADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaDATE $M G$, 10.19 , $018.19.29$ ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CNADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CNADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CNSt. FULL NAME OF FIFTH ASSIGNOR, IF ANY DI, QingyunASSIGNOR'S SIGNATURE DI, QingyunDATE $N G$, 0.19 , $0.19, 0.29$ ADDRESS DI, QingyunDI SCIENCH SIGNATURE DI, QingyunDATE $N G$, $0.19, 0.29$ ADDRESS CITIZENSHIPDI SCIENCH SIGNATURE $N G$, $0.19, 0.29$ ADDRESS CITIZENSHIPDI SCIENCH PADDRESS ADDRESSCITIZENSHIPADDRESSCITIZENSHIP	1. FULL NAME OF SOLE OR FIRST ASSIGNOR	ASSIGNOR'S SIGNATURE	
ADDRESS CTTIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CN 2. FULL NAME OF SECOND ASSIGNOR, IF ANY ASSIGNOR'S SIGNATURE DATE ZHANG, Tianxin ZHANG, Tianxin CITIZENSHIP ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China DATE PEI, Renzhong PEI, Renzhorg CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP No. 19, Beituch	WANG, Zhongxing	WANG. ZHongxing	7018.10.27
2. FULL NAME OF SECOND ASSIGNOR, IF ANY ASSIGNOR'S SIGNATURE DATE ZHANG, Tianxin ZHANG, Tianxin DATE ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP 3. FULL NAME OF THIRD ASSIGNOR, IF ANY ASSIGNOR'S SIGNATURE DATE PEI, Renzhong PEI, Renzhong DATE ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP S. FULL NAME OF FIFTH ASSIGNOR, IF ANY ASSIGNOR'S SIGNATURE DATE DI, Qingyun	ADDRESS	<u> </u>	CITIZENSHIP
ZHANG, TianxinZHANG, Tianxin $208 \cdot 10 - 29$ ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaChitzenship CN3. FULL NAME OF THIRD ASSIGNOR, IF ANY PEI, RenzhongASSIGNOR'S SIGNATURE PEI, RenzhongDATE $2018 \cdot 10 \cdot 29$ ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaDATE $2018 \cdot 10 \cdot 29$ ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CN4. FULL NAME OF FOURTH ASSIGNOR, IF ANY YANG, YongyouASSIGNOR'S SIGNATURE $ANG, Yong Y^{ON}$ DATE $2018 \cdot 10 \cdot 29$ ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CNADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaDATE $2018 \cdot 10 \cdot 29$ ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CNADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CNADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaDATE $2018 \cdot 10 \cdot 29$ ADDRESS No. 19, GorgunASSIGNOR'S SIGNATURE $1, Wayyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy$			CN
ZHANG, TianxinZHANG, Tianxin $208 \cdot 10 - 29$ ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaChitzenship CN3. FULL NAME OF THIRD ASSIGNOR, IF ANY PEI, RenzhongASSIGNOR'S SIGNATURE PEI, RenzhongDATE $2018 \cdot 10 \cdot 29$ ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaDATE $2018 \cdot 10 \cdot 29$ ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CN4. FULL NAME OF FOURTH ASSIGNOR, IF ANY YANG, YongyouASSIGNOR'S SIGNATURE $ANG, Yong Y^{ON}$ DATE $2018 \cdot 10 \cdot 29$ ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CNADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaDATE $2018 \cdot 10 \cdot 29$ ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CNADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CNADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaDATE $2018 \cdot 10 \cdot 29$ ADDRESS No. 19, GorgunASSIGNOR'S SIGNATURE $1, Wayyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy$	2. FULL NAME OF SECOND ASSIGNOR, IF ANY	ASSIGNOR'S SIGNATURE	DATE
No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CN 3. FULL NAME OF THIRD ASSIGNOR, IF ANY PEI, Renzhong ASSIGNOR'S SIGNATURE PEI, Renzhong DATE PEI, Renzhong ADDRESS CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP 4. FULL NAME OF FOURTH ASSIGNOR, IF ANY YANG, Yongyou ASSIGNOR'S SIGNATURE PANG, Yongyou DATE PANG, Yong Yon ADDRESS CITIZENSHIP CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China DATE PANG, Yong Yon DATE PANG, Yong Yon ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP S. FULL NAME OF FIFTH ASSIGNOR, IF ANY DI, Qingyun ASSIGNOR'S SIGNATURE PANG, Yong Yon DATE PANG, Yong Yon ADDRESS CITIZENSHIP CITIZENSHIP S. FULL NAME OF FIFTH ASSIGNOR, IF ANY DI, Qingyun ASSIGNOR'S SIGNATURE PANG, Yong Yon DATE PANG, Yong Yon ADDRESS DI, Qingyun ASSIGNOR'S SIGNATURE PANG, Yong Yon DATE PANG, Yong Yon DATE			
No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCN3. FULL NAME OF THIRD ASSIGNOR, IF ANY PEI, RenzhongASSIGNOR'S SIGNATURE IFI, RenzhongDATE IFI, RenzhongADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaCITIZENSHIP CN4. FULL NAME OF FOURTH ASSIGNOR, IF ANY YANG, YongyouASSIGNOR'S SIGNATURE IFICH, Renzhong Vest Road, Chaoyang District, Beijing 100029, ChinaDATE W18.10.294. FULL NAME OF FOURTH ASSIGNOR, IF ANY ADDRESS No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, ChinaDATE W18.10.295. FULL NAME OF FIFTH ASSIGNOR, IF ANY DI, QingyunASSIGNOR'S SIGNATURE IF ANY ASSIGNOR'S SIGNATUREDATE W18.10.296. FULL NAME OF FIFTH ASSIGNOR, IF ANY DI, QingyunASSIGNOR'S SIGNATURE IF ANY ASSIGNOR'S SIGNATUREDATE W18.10.296. FULL NAME OF FIFTH ASSIGNOR, IF ANY DI, QingyunASSIGNOR'S SIGNATURE IF ANY ASSIGNOR'S SIGNATUREDATE W18.10.296. FULL NAME OF FIFTH ASSIGNOR, IF ANY DI, QingyunASSIGNOR'S SIGNATURE IF ANY ASSIGNOR'S SIGNATUREDATE W18.10.29	ADDRESS	······································	CITIZENSHIP
PEI, Renzhong PEI, Renzhong Date: 10.9 ADDRESS CITIZENSHIP CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CN CN 4. FULL NAME OF FOURTH ASSIGNOR, IF ANY YANG, Yongyou ASSIGNOR'S SIGNATURE YANG, Yongyou DATE YANG, Yong Y ^{ong} DATE YANG, Yongyou ADDRESS CITIZENSHIP CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP 5. FULL NAME OF FIFTH ASSIGNOR, IF ANY DI, Qingyun ASSIGNOR'S SIGNATURE DI, Qingyun DATE YO 18.10.29 ADDRESS CITIZENSHIP CITIZENSHIP CON CITIZENSHIP CITIZENSHIP			
PEI, Renzhong PEI, Renzhong Date: 10.9 ADDRESS CITIZENSHIP CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CN CN 4. FULL NAME OF FOURTH ASSIGNOR, IF ANY YANG, Yongyou ASSIGNOR'S SIGNATURE YANG, Yongyou DATE YANG, Yong Y ^{ong} DATE YANG, Yongyou ADDRESS CITIZENSHIP CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP 5. FULL NAME OF FIFTH ASSIGNOR, IF ANY DI, Qingyun ASSIGNOR'S SIGNATURE DI, Qingyun DATE YO 18.10.29 ADDRESS CITIZENSHIP CITIZENSHIP CON CITIZENSHIP CITIZENSHIP	3. FULL NAME OF THIRD ASSIGNOR, IF ANY	ASSIGNOR'S SIGNATURE	DATE
ADDRESS CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CN 4. FULL NAME OF FOURTH ASSIGNOR, IF ANY ASSIGNOR'S SIGNATURE DATE YANG, Yongyou YANG, Yong You DATE ADDRESS CITIZENSHIP CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP S. FULL NAME OF FIFTH ASSIGNOR, IF ANY ASSIGNOR'S SIGNATURE DATE DI, Qingyun DI, Qingyun DI, Qingyun DI, Qingyun ADDRESS CITIZENSHIP CITIZENSHIP		PEI, Renzhong	2118.10.29
4. FULL NAME OF FOURTH ASSIGNOR, IF ANY YANG, Yongyou ASSIGNOR'S SIGNATURE ANG, Yong Yon ADDRESS DATE W18.10.29 ADDRESS CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP CN 5. FULL NAME OF FIFTH ASSIGNOR, IF ANY DI, Qingyun ASSIGNOR'S SIGNATURE DI, Qingyun DATE W18.10.29 ADDRESS CITIZENSHIP CITIZENSHIP	ADDRESS		CITIZENSHIP
YANG, Yongyou YANG, Yong Yon W18.10.29 ADDRESS CITIZENSHIP CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP 5. FULL NAME OF FIFTH ASSIGNOR, IF ANY ASSIGNOR'S SIGNATURE DATE DI, Qingyun DI, Qingyun DI, Qingyun CITIZENSHIP ADDRESS CITIZENSHIP CITIZENSHIP	No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China		CN
YANG, Yongyou YANG, Yong Yon W18.10.29 ADDRESS CITIZENSHIP CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CITIZENSHIP 5. FULL NAME OF FIFTH ASSIGNOR, IF ANY ASSIGNOR'S SIGNATURE DATE DI, Qingyun DI, Qingyun DI, Qingyun CITIZENSHIP ADDRESS CITIZENSHIP CITIZENSHIP	4 FULL NAME OF FOURTH ASSIGNOR IF ANY JASSIGNOR'S SIGNATURE		DATE
ADDRESS CITIZENSHIP No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China CN 5. FULL NAME OF FIFTH ASSIGNOR, IF ANY ASSIGNOR'S SIGNATURE DATE DI, Qingyun DI, Qingyun DI, Qingyun CITIZENSHIP ADDRESS CITIZENSHIP			
5. FULL NAME OF FIFTH ASSIGNOR, IF ANY ASSIGNOR'S SIGNATURE DATE DI, Qingyun DI, Qingyun DI, Qingyum DI, Qingyum CITIZENSHIP	ADDRESS		CITIZENSHIP
DI, Qingyun PI, Qingyun 2018. 10. 29 ADDRESS CITIZENSHIP	No. 19, Beitucheng West Road, Chaoyang District, Beijing 100029, China		CN
DI, Qingyun PI, Qingyun 2018. 10. 29 ADDRESS CITIZENSHIP	5. FULL NAME OF FIFTH ASSIGNOR, IF ANY	ASSIGNOR'S SIGNATURE	DATE
ADDRESS /// CITIZENSHIP			
No. 19, Beitucheng West Road, Chaoyang District, Beijing(100029, China CN	ADDRESS		CITIZENSHIP
	No. 19, Beitucheng West Road, Chaoya	ang District, Beijing (/10 0029, China	CN

RECORDED: 11/01/2018