

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5702329

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|---|-----------------------------------|
| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |
| CONVEYING PARTY DATA | |
| Name | Execution Date |
| UMUT ZALLUHOGLU | 08/15/2019 |
| NAZLI DEMIRER | 08/20/2019 |
| ROBERT DARBE | 08/16/2019 |
| JULIEN MARCK | 08/14/2019 |
| PETER JOHN HORNBLOWER | 06/19/2018 |
| RECEIVING PARTY DATA | |
| Name: | HALLIBURTON ENERGY SERVICES, INC. |
| Street Address: | 3000 N. SAM HOUSTON PARKWAY E. |
| City: | HOUSTON |
| State/Country: | TEXAS |
| Postal Code: | 77032 |
| PROPERTY NUMBERS Total: 1 | |
| Property Type | Number |
| Application Number: | 16523887 |
| CORRESPONDENCE DATA | |
| Fax Number: | (713)374-1601 |
| <i>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.</i> | |
| Phone: | 7133741600 |
| Email: | sramirez@polsinelli.com |
| Correspondent Name: | JASON W. BRYAN |
| Address Line 1: | 1000 LOUISIANA ST. |
| Address Line 2: | SUITE 6400 |
| Address Line 4: | HOUSTON, TEXAS 77002 |
| ATTORNEY DOCKET NUMBER: | 3060US-624047 |
| NAME OF SUBMITTER: | SONIA RAMIREZ |
| SIGNATURE: | /Sonia Ramirez/ |
| DATE SIGNED: | 09/05/2019 |
| Total Attachments: 7 | |

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WORLDWIDE ASSIGNMENT

WHEREAS, WE, (hereinafter referred to as the “ASSIGNOR(S)”):

Umut ZALLUHOGLU, 4475 Wilson Rd., Apt. 3302, Humble, TX 77396
UNITED STATES OF AMERICA

Nazli DEMIRER, 14500 Cutten Road, Apt. 16204, Houston, TX 77069
UNITED STATES OF AMERICA

Peter John HORNBLOWER, The Willows, Chargrove Lane, Cheltenham,
Gloucestershire GL51 3LP
UNITED KINGDOM

Robert DARBE, 13511 Carrill Bend Ln, Tomball, TX 77377
UNITED STATES OF AMERICA

Julien MARCK, 1725 Main Street, Apt. 2001, Houston, TX 77002
UNITED STATES OF AMERICA

has/have invented a **AUTONOMOUS DIRECTIONAL DRILLING DIRECTIONAL TENDENCY ESTIMATION** (“Invention”) for which one or more applications for patent, design registration, utility model registration, or other form of protection, rights, or title have been or will be made in certain countries (“Applications”), as further described below:

Provisional Application No. 16/523,887, filed July 26, 2019

AND WHEREAS, **HALLIBURTON ENERGY SERVICES, INC.**, (hereinafter referred to as the “ASSIGNEE”), a company organized under the laws of Delaware, having a place of business at 3000 N. Sam Houston Parkway E., Houston, TX 77032, is desirous of acquiring the full and exclusive right, title and interest in and to said Invention, said Applications inclusive of all ancillary rights relating thereto, any and all priority rights derived from said Applications, and all patents, design registrations, utility model registrations and other forms of protection, rights and titles relating to said Invention, in any country or countries and in respect of the whole or any part or parts of or improvements to the Invention;

NOW THEREFORE, for valuable consideration, the receipt and sufficiency of which are hereby acknowledged, ASSIGNOR(S) does/do hereby confirm that ASSIGNOR(S) has/have transferred, conveyed and assigned, and by way of further assurance does/do hereby transfer, convey and assign, any and all of ASSIGNOR(S)’s respective rights, title and interest in and to: the Invention; the Applications; any further applications for patent, design registration, utility model registration or other forms of protection, rights or titles for the whole or any part or parts of or improvements to the Invention in any country or countries (“Further Applications”) together with the right to file divisional applications, substitute applications and continuation

of or improvements to the Invention in any country or countries ("Further Applications") together with the right to file divisional applications, substitute applications and continuation applications of any one or more of the Applications and Further Applications ("Divisionals"); the right to obtain patents, design registrations, utility model registrations and all other forms of protection, rights and titles relating to the Invention; the right in and to any patent or reissue patent relating to the Applications, Further Applications and Divisionals ("Grants"); and the right to obtain any extensions / supplementary protection certificates ("Extensions"); together with the right to bring proceedings to recover damages and/or to obtain other remedies for acts committed in respect of one or more of the aforesaid Invention, Applications, Grants, Further Applications, Divisionals and Extensions, whether such acts are committed before or after the date of this Worldwide Assignment; with the intent that the Invention, Applications, Grants, Further Applications, Divisionals and Extensions are owned and enjoyed by ASSIGNEE absolutely to the full end of the term or terms for same.

ASSIGNOR(S) does/do hereby agree, upon request, to provide assistance and to execute any and all further documents, at the expense of ASSIGNEE and/or its successors and assigns (as applicable), which may be necessary or desirable to enable ASSIGNEE, and/or its successors and assigns (as applicable), to file, prosecute, bring proceedings and take other actions with respect to any and all of the Invention, Applications, Further Applications, Divisionals, Grants and Extensions, and any and all patents and registrations granted thereon and other forms of protection, rights and titles relating thereto, and ASSIGNOR(S) further agrees/agree to execute, upon request and at the expense of ASSIGNEE and/or its successors and assigns (as applicable), any and all further documents which may be necessary or desirable to vest or perfect the title of ASSIGNEE therein.

ASSIGNOR(S) does/do hereby authorize ASSIGNEE or its patent agents or attorneys to insert, above, the jurisdictions, application numbers, filing dates and any other indicia identifying the Applications when such information is available for the purpose of recording this assignment.


ASSIGNOR(S) does/do hereby authorize and request The Commissioner of Patents or any equivalent authority to issue to ASSIGNEE each and every patent, registration and other form of protection, right, and title granted upon the Applications, Further Applications, Divisionals and Extensions.

THIS WORLDWIDE ASSIGNMENT shall inure to the benefit of ASSIGNEE and its successors and assigns, and shall be binding upon ASSIGNOR(S) and their successors and permitted assigns.

DELIVERY of this Worldwide Assignment by copy, however transmitted, constitutes valid and effective delivery. This Worldwide Assignment may be executed in one or more counterparts, each of which when so executed and delivered shall be an original, and such counterparts shall together constitute one and the same instrument.

IN WITNESS WHEREOF, this Worldwide Assignment has been executed below by the undersigned:

Date: 08/15/2019



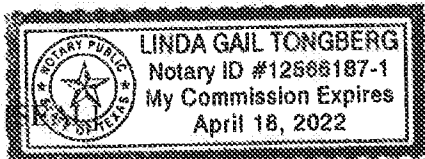
Umut ZALLUHOGLU
4475 Wilson Rd., Apt. 3302
Humble, TX 77396
UNITED STATES OF AMERICA

STATE OF Texas

COUNTY OF Harris

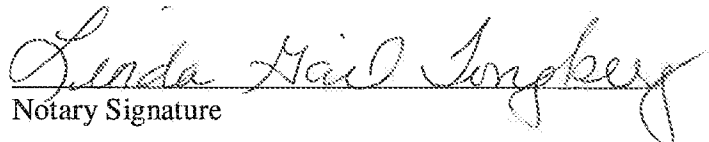
BEFORE ME, the undersigned authority, on this day personally appeared Umut Zalluhoglu, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledge to me that he executed the same for the purposes and considerations therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 15th day of August, 2019



My Commission Expires:

4-18-2022



Notary Signature

IN WITNESS WHEREOF, this Worldwide Assignment has been executed below by the undersigned:

Date: 08/20/2019

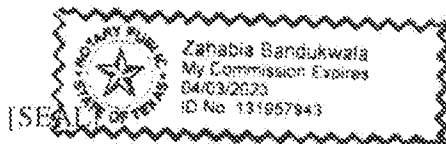
Nazli Demire
Nazli DEMIRER
14500 Cullen Road, Apt. 16204
Houston, TX 77069
UNITED STATES OF AMERICA

STATE OF Texas

COUNTY OF Harris

BEFORE ME, the undersigned authority, on this day personally appeared Nazli Demire, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledge to me that he executed the same for the purposes and considerations therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 20 day of August, 2019



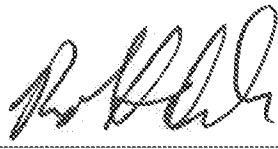
My Commission Expires:

4/03/2023

[Signature]
Notary Signature

IN WITNESS WHEREOF, this Worldwide Assignment has been executed below by the undersigned:

Date: 8-16-2019


Robert DARBE
13511 Carrill Bend Ln
Tomball, TX 77377
UNITED STATES OF AMERICA

STATE OF Texas

COUNTY OF Harris

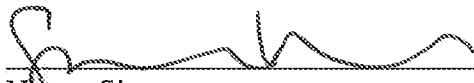
BEFORE ME, the undersigned authority, on this day personally appeared Robert Darbe, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledge to me that he executed the same for the purposes and considerations therein expressed.

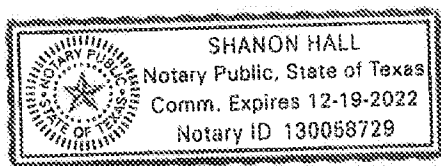
GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 16th day of August, 2019

[SEAL]

My Commission Expires:

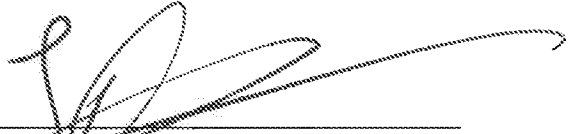
12/19/2022


Notary Signature



IN WITNESS WHEREOF, this Worldwide Assignment has been executed below by the undersigned:

Date: 08/14/2019



Julien MARCK
1725 Main Street, Apt. 2001
Houston, TX 77002
UNITED STATES OF AMERICA

STATE OF Texas

COUNTY OF Harris

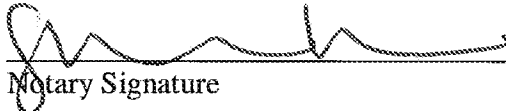
BEFORE ME, the undersigned authority, on this day personally appeared Julien MARCK, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledge to me that he executed the same for the purposes and considerations therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 14th day of August, 2019

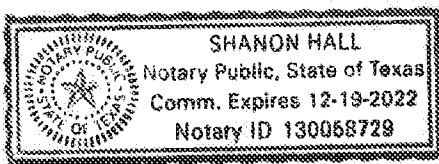
[SEAL]

My Commission Expires:

12/19/2022



Notary Signature



Halliburton Energy Services, Inc.

Invention Disclosure

PRIVILEGED ATTORNEY-CLIENT COMMUNICATION – CONFIDENTIAL

Page: 14 of 16

Invention Disclosure Revision: _____

Docket Number: _____

Date: 06/15/2018

(Assigned by the Law Department)

Title: Directional tendency estimation for autonomous directional drilling

Project #: _____

COMBINED DECLARATION AND ASSIGNMENT OF ANY PATENT APPLICATIONS RELATING TO THIS INVENTION DISCLOSURE

The content of this disclosure is the property of Halliburton Energy Services, Inc., Landmark Graphics Corp, or Multi-Chem LLC (referred to at points herein as ASSIGNEE or collectively referred to herein as Halliburton) and the inventor(s) hereby agrees to and does hereby assign all right, title, and interest to Halliburton in any intellectual property contained herein, including but not limited to copyright, trade secrets and other confidential information, and patent-eligible subject matter by virtue of the formal Assignment and Declaration contained in this Invention Disclosure.

As a below named inventor, I hereby declare that the invention described in this Invention Disclosure was made or authorized to be made by me and that I believe that I am the original inventor or an original joint inventor of a claimed invention in an application resulting from this Invention Disclosure.

NOW, THEREFORE, in consideration of other good and valuable consideration acknowledged by the Assignors to have been received in full from the Assignees, I agree to and hereby assign and transfer unto said ASSIGNEE, the full and exclusive right to the said invention in the United States and its territorial possessions and in all foreign countries (including the right to claim priority under the terms of the International Convention and other relevant International Treaties and Arrangements from the aforesaid application) and the entire right, title and interest in and to any and all Letters Patent which may be granted therefor in the United States and its territorial possessions and in any and all foreign countries and in and to any and all divisions, reissues, continuations, substitutions and renewals thereof. I hereby authorize and request the Patent Office Officials in the United States and its territorial possessions and any and all foreign countries to issue any and all of said Letters Patent, when granted, to said ASSIGNEE as the assignee of my entire right, title and interest in and to the same, for the sole use and behoove of said ASSIGNEE, its successors and assigns, to the full end of the term for which said Letters Patent may be granted, as fully and entirely as the same would have been held by me had this Assignment not been made. Further, I agree to cooperate with the Assignee to enable the Assignee to enjoy to the fullest extent the right, title and interest to the invention herein conveyed, such cooperating including prompt production of pertinent facts and documents, execution of petitions, oaths, specifications, declarations or other papers and assistance for perfecting in the Assignee the right, title and interest herein conveyed, for prosecuting any applications for Letters Patent, and for legal proceedings involving the invention and any application therefor, including without limitation, opposition proceedings, cancellation proceedings, priority contests, public use proceedings, infringement actions and court actions; provided, however, that the expense incurred by the Assignors in providing such cooperation shall be paid for by the Assignee.

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

2nd Inventor

Signed (Inventor Name)

Date