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PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
HUA XIA	12/29/2014
CHRIS GAO	12/29/2014
CHUNG CHANG	12/30/2014

RECEIVING PARTY DATA

Name:	HALLIBURTON ENERGY SERVICES, INC.	
Street Address:	3000 N. SAM HOUSTON PARKWAY E.	
City:	HOUSTON	
State/Country:	TEXAS	
Postal Code:	77032-3219	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15034693

CORRESPONDENCE DATA

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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.

Email: request@slwip.com

Correspondent Name: SCHWEGMAN LUNDBERG & WOESSNER, P.A.

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ATTORNEY DOCKET NUMBER:	1880.765US1	
NAME OF SUBMITTER:	ROBIN L. MONSEES	
SIGNATURE:	/ Robin L. Monsees /	
DATE SIGNED:	08/17/2016	

Total Attachments: 6

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RECORDATION FORM COVER SHEET PATENTS ONLY

Atty Ref/Docket No.: 1880.765US1 Patent and Trademark Office To the Director of the U.S. Patent and Trademark Office: Please record the attached original documents or copy thereof. Name and address of receiving party(ies): 1. Name of conveying party(ies): Name: Halliburton Energy Services, Inc. Hua Xia, Chris Gao, Chung Chang Street Address: 3000 N. Sam Houston Parkway E. Additional name(s) of conveying party(ies) attached? City: <u>Houston</u> State: TX Zip: <u>77032-3219</u> []Yes [X]No Country: United States of America 3. Nature of conveyance: Additional name(s) & address(es) attached? []Yes [X]No [X] Assignment [] Merger [] Security Agreement [] Change of Name [] Other Execution Date: December 29, 2014, December 29, 2014, December 30, 2014 4. Application number(s) or patent number(s): If this document is being filed together with a new application, the execution date of the application is: A. Patent Application No.(s) B. Patent No.(s) Serial No. 15/034,693, filed May 5, 2016 Additional numbers attached? []Yes [X]No 6. Total number of applications and patents involved: 1 5. Name and address of party to whom correspondence concerning document should be mailed: 7. Total fee (37 CFR 3.41):\$ 0.00 Name: Kenneth W. Bolvin [[Enclosed [Authorized to be charged to deposit account 19-Address: 0743 Schwegman Lundberg & Woessner, P.A. P.O. Box 2938 Please charge any additional fees or credit any over Minneapolis, MN 55402--0938 payments to our Deposit Account No.: 19-0743 DO NOT USE THIS SPACE Statement and signature. To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document. <u>Kenneth W. Bolwin,</u> Signature Kenneth W. Bolvin/Reg. No. 34.125 Name of Person Signing Total number of pages including cover sheet: 6 Mail documents to be recorded with required cover sheet information to: Commissioner of Patents and Trademarks Mail Stop Assignment Recordation Services

P.O. Box 1450

Alexandria, VA 22313-1450

Attorney Docket No. 1880.765WO1 Client Ref. No. 2014-IP-093686 U1 PCT/ebilling: 2014-IPRO-093686

ASSIGNMENT

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency, and adequacy of which are hereby acknowledged by the Undersigned, the Undersigned do hereby irrevocably and unconditionally:

CONVEY, ASSIGN, AND TRANSFER to Halliburton Energy Services, Inc. (the "Assignee"), a corporation of the State of Delaware, having a place of business at 3000 N. Sam Houston Parkway E., Houston, TX 77032-3219, the Undersigned's entire right, title, and interest for the United States and all foreign countries and jurisdictions in and to:

the Invention which is disclosed in the above-identified application or applications;

such application or applications, and all divisional, continuing (including continuation-in-part), substitute, renewal, reissue, and all other applications for a patent or patents which have been or shall be filed in the United States (including all provisional and non-provisional applications), and in all foreign countries and jurisdictions based in whole or in part on any of such Invention (including any application for a utility model or an innovation patent application);

all original and reissued patents which have been or shall be issued in the United States and all foreign countries and jurisdictions based in whole or in part on any of such Invention;

including the right to claim priority to the above-identified patent application or applications in relation to subject matter based in whole or in part on the above-identified patent application or applications and any of the foregoing including the right to file foreign applications under the provisions of any convention or treaty;

and including the right to all causes of action, remedies, and other enforcement rights related to the above-identified application or applications, including without limitation the right to sue for past, present, or future infringement, misappropriation, or violation of any and all rights related to the above-identified patent application or applications and any of the foregoing, including the right to obtain and collect damages for past, present, or future infringement;

AUTHORIZE AND REQUEST the issuing authority to issue any and all United States and foreign patents granted on such Invention to the Assignee;

AUTHORIZE AND REQUEST that any attorney associated with U.S. Patent and Trademark Office (USPTO) Customer No. 46042 may (directly or through his/her designee) delete, insert, or alter any

Assignment Docket No: 1880,765WO1
Assignors: Hua Xia et al. Client Ref. No. 2014-IP-093686 U1 PCT/ebilling: 2014-IPRO-093686

Title: WIDE BANDWIDTH DRILL PIPE STRUCTURE FOR ACOUSTIC TELEMETRY

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information related to the above-identified patent application or applications or any of the foregoing, after execution of this Assignment;

WARRANT AND COVENANT that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or shall be made to others by the Undersigned, and that the full right to convey the same as herein expressed is possessed by the Undersigned;

COVENANT, that when requested and without compensation, but at the expense of the Assignee, in order to carry out in good faith the intent and purpose of this Assignment, the Undersigned shall (1) execute all provisional, non-provisional, divisional, continuing (including continuation-in-part), substitute, renewal, reissue, and all other patent applications for the Invention; (2) execute all rightful oaths, declarations, assignments, powers of attorney and other papers for the Invention; (3) communicate to the Assignee all facts known to the Undersigned relating to the Invention and the history thereof; (4) cooperate with the Assignee in any interference, reexamination, reissue, opposition, dispute, or litigation involving any of the applications or patents for the Invention; and (5) take such further actions as the Assignee shall reasonably consider necessary or desirable for vesting title to such Invention in the Assignee, or for securing, maintaining and enforcing proper patent protection for the Invention;

COVENANT, that should any provision of this agreement be held unenforceable by an authority of competent jurisdiction, such a ruling shall not affect the validity and enforceability of the remaining provisions. To the extent that any such provision is found to be unenforceable, the Undersigned, when requested and without compensation shall act in good faith to substitute for such provision a new provision with content and purpose as close as possible to the provision deemed unenforceable.

THIS AGREEMENT IS TO BE BINDING on the heirs, assigns, representatives, and successors of the Undersigned, and is to extend to the benefit of the successors, assigns, and nominees of the Assignee.

AGREED as of the date of my signature below:

Assignment Docket No. 1880 765WO1
Assignors: Hue Xia et al. Client Ref. No. 2014-IP-093686 U1 PCT/ebilling: 2014-IPRO-093686
Title: WIDE BANDWIDTH DRILL FIPE STRUCTURE FOR ACOUSTIC TELEMETRY
Page 1 of 5

Assignor:

(Signature):

Name: Hua Xia

City/State: Huffman, TX

Date:

Amignment Docket No. 1880.765WOI Assignors: Him Xis et al. Client Ref. No. 2014-IP-093686 UT PCI/cbilling: 2014-IPBO-093686 Tule: WIDE BANDWIDTH DRILL PIPE STRUCTURE FOR ACCUSTIC TELEMETRY Page 4 of 5.

Assignor:

(Signature):

Name: Chris Gao

City/State: Kingwood, TX

Date:

Dec 39 5014

REEL: 039462 FRAME: 0598

Assignment Docket No: 1880.765WOI
Assignors: Hua Xia et al Client Ref. No. 2014-IP-093686 U1 PCT/ebilling: 2014-IPRO-093686
Title: WIDE BANDWIDTH DRILL PIPE STRUCTURE FOR ACOUSTIC TELEMETRY

Assignor:

(Signature):

Name: Chung Chang City/State: Houston, TX

Date:

12030,2014

PATENT REEL: 039462 FRAME: 0599

Docket No: 1880.765WOI

RECORDED: 08/17/2016