

# Ex. PGS 1047

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15866 U.S. PTO

PTO/SB/05 (09-04)

Approved for use through 07/31/2006. OMB 0651-0032  
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# UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	14.0123-PCT-US-CONT4
First Inventor	Oyvind Hillesund
Title	CONTROL SYSTEM FOR POSTERIZING MARINE SEMIOTIC STRUCTURES
Express Mail Label No.	EQ547422835US

113260 U.S. PTO  
11/455042

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<b>APPLICATION ELEMENTS</b> <i>See MPEP chapter 600 concerning utility patent application contents.</i>	<b>ADDRESS TO:</b> Commissioner for Patents P.O. Box 1450 Alexandria VA 22313-1450
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1.  **Fee Transmittal Form** (e.g., PTO/SB/17)  
*(Submit an original and a duplicate for fee processing)*
2.  **Applicant claims small entity status.**  
See 37 CFR 1.27.
3.  **Specification** [Total Pages 23]  
Both the claims and abstract must start on a new page  
*(For information on the preferred arrangement, see MPEP 608.01(a))*
4.  **Drawing(s)** (35 U.S.C. 113) [Total Sheets 3]
5. **Oath or Declaration** [Total Sheets \_\_\_\_\_]
  - a.  Newly executed (original or copy)
  - b.  A copy from a prior application (37 CFR 1.63(d))  
*(for continuation/divisional with Box 18 completed)*
  - i.  **DELETION OF INVENTOR(S)**  
Signed statement attached deleting inventor(s)  
name in the prior application, see 37 CFR  
1.63(d)(2) and 1.33(b).
6.  **Application Data Sheet.** See 37 CFR 1.76
7.  **CD-ROM or CD-R** in duplicate, large table or  
Computer Program (*Appendix*)  
 Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission**  
*(if applicable, items a. - c. are required)*
  - a.  Computer Readable Form (CRF)
  - b.  Specification Sequence Listing on:
    - i.  CD-ROM or CD-R (2 copies); or
    - ii.  Paper
  - c.  Statements verifying identity of above copies

- ### ACCOMPANYING APPLICATION PARTS
9.  **Assignment Papers** (cover sheet & document(s))  
Name of Assignee WESTERNECO, L.L.C.
  10.  **37 CFR 3.73(b) Statement**  **Power of Attorney**  
*(when there is an assignee)*
  11.  **English Translation Document** *(if applicable)*
  12.  **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)  
 Copies of citations attached
  13.  **Preliminary Amendment**
  14.  **Return Receipt Postcard** (MPEP 503)  
*(Should be specifically itemized)*
  15.  **Certified Copy of Priority Document(s)**  
*(if foreign priority is claimed)*
  16.  **Nonpublication Request** under 35 U.S.C. 122(b)(2)(B)(i).  
Applicant must attach form PTO/SB/35 or equivalent.
  17.  Other: \_\_\_\_\_

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:

Continuation     Divisional     Continuation-in-part (CIP)    of prior application No.: 09/787,723

Prior application information:    Examiner JESUS D. SOTELO    Art Unit: 3617

**19. CORRESPONDENCE ADDRESS**

The address associated with Customer Number: 28116    OR     Correspondence address below

Name			
Address			
City	State	Zip Code	
Country	Telephone	Fax	

Signature		Date	<u>6/15/2006</u>
Name (Print/Type)	Liangang (Mark) Ye	Registration No. (Attorney/Agent)	48,276

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Effective on 12/08/2004. Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818). <b>FEE TRANSMITTAL</b> <b>For FY 2005</b>		<b>Complete if Known</b>	
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27		Application Number	Filed Concurrently
<b>TOTAL AMOUNT OF PAYMENT (\$)</b> 1700		Filing Date	Filed Concurrently
		First Named Inventor	Oyvind Hillesund
		Examiner Name	Unknown
		Art Unit	Unknown
		Attorney Docket No.	14.0123-PCT-US-CONT4

**METHOD OF PAYMENT** (check all that apply)

Check  
  Credit Card  
  Money Order  
  None  
  Other (please identify): \_\_\_\_\_

Deposit Account  
 Deposit Account Number: 50-1720  
 Deposit Account Name: WesternGeco

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

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  Charge fee(s) indicated below, **except for the filing fee**

Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17  
  Credit any overpayments

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**FEE CALCULATION**

**1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	\$1000
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

**2. EXCESS CLAIM FEES**

Fee Description	Fee (\$)	Small Entity Fee (\$)
	Each claim over 20 or, for Reissues, each claim over 20 and more than in the original patent	50
Each independent claim over 3 or, for Reissues, each independent claim more than in the original patent	200	100
Multiple dependent claims	360	180

**Total Claims**    **Extra Claims**    **Fee (\$)**    **Fee Paid (\$)**    **Multiple Dependent Claims**  
 34 - 20 or HP = 14 x \$50 = 700    **Fee (\$)**    **Fee Paid (\$)**

HP = highest number of total claims paid for, if greater than 20

**Indep. Claims**    **Extra Claims**    **Fee (\$)**    **Fee Paid (\$)**  
 2 - 3 or HP = 0 x \$200 = 0

HP = highest number of independent claims paid for, if greater than 3

**3. APPLICATION SIZE FEE**

If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

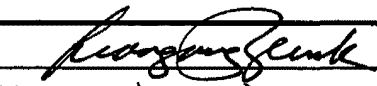
Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
26	0	0	\$250	0

26 - 100 = 0 / 50 = 0 (round up to a whole number) x \$250 = 0

**4. OTHER FEE(S)**

Non-English Specification, \$130 fee (no small entity discount)

Other: \_\_\_\_\_

<b>SUBMITTED BY</b>			
Signature		Registration No. (Attorney/Agent)	Telephone
Name (Print/Type)	LEONARD L. MANN	48,276	713-689-5799
			Date
			06/10/2006

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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**IN THE UNITED STATES PATENT & TRADEMARK OFFICE**

**United States Patent Application**

**For**

**CONTROL SYSTEM FOR POSITIONING OF MARINE SEISMIC STREAMERS**

**By: Oyvind Hillesund and Simon Hastings Bittleston**

## CONTROL SYSTEM FOR POSITIONING OF MARINE SEISMIC STREAMERS

### Cross-reference to Related Applications

[0001] Applicant claims priority under 35 U.S.C. § 120 from co-pending serial number 11/070,614, filed March 2, 2005, which was a continuation of parent application serial no. 09/787,723, filed July 2, 2001, now Patent No. 6,932,017, which was a 35 U.S.C. § 371 national stage filing from Patent Cooperation Treaty application number PCT/IB99/01590, filed September 28, 1999, which in turn claimed priority from Great Britain patent application number 9821277.3, filed October 1, 1998, from which Applicant claims foreign priority under 35 U.S.C. § 119, all of which are incorporated herein by reference. This application is also related to co-pending application serial numbers 11/\_\_\_\_ and 11/\_\_\_\_, filed simultaneously herewith, which also are both incorporated herein by reference.

### Background of the Invention

[0002] This invention relates generally to systems for controlling seismic data acquisition equipment and particularly to a system for controlling a marine seismic streamer positioning device.

[0003] A marine seismic streamer is an elongate cable-like structure, typically up to several thousand meters long, which contains arrays of seismic sensors, known as hydrophones, and associated electronic equipment along its length, and which is used in marine seismic surveying. In order to perform a 3D marine seismic survey, a plurality of such streamers are towed at about 5 knots behind a seismic survey vessel, which also tows one or more seismic sources, typically air guns. Acoustic signals produced by the seismic sources are directed down through the water into the earth beneath, where they are reflected from the various strata. The reflected signals are received by the hydrophones, and then digitized and processed to build up a representation of the subsurface geology.

[0004] The horizontal positions of the streamers are typically controlled by a deflector, located at the front end or "head" of the streamer, and a tail buoy, located at the back end or "tail" of the streamer. These devices create tension forces on the streamer which

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