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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,952	06/15/2001	Mark Zajac	594-23539-US	9148

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EXAMINER

TAYLOR, VICTOR J

ART UNIT	PAPER NUMBER
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2863

DATE MAILED: 03/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/882,952

Applicant(s)

ZAJAC, MARK

Examiner

Victor Taylor

Art Unit

2862

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 June 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: *Office Action*

DETAILED ACTION

Drawings

1. The drawings are objected to because of informalities found under 37 CFR 1.184 or 37CFR 1.152. The drawing figures 1 to 6 contain numeric numbering for descriptions and do not have the alphabetic listing and title for each element and are not clearly detailed in the drawing. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A (1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the examiner on form PTO-892 has cited the references, they have not been considered.

Oath/Declaration

3. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application-by-application number and filing date is required. See MPEP §§ 602.01 and 602.02.

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4. The Oath or declaration is defective because:

The applicant claims the benefit under title 35 USC section 120 to the priority dates of US application 09/603,068 and US application 09/658,846, now US Patent 6,418,378.

The applicant in the instant application does not disclose in application number 09/882952 in the specification on page 1 that either of these applications are the continuation or continuation in part as required.

The applicant claims section 120 priority to a different inventors work and claims these inventions as being related to the instant application 09/8829952 of the inventor. These two previous applications are by a different inventor with no co-inventorship. The instant application has no co-inventorship with the previous inventor.

The applicant is not a co-inventor on either application 09/603,068 or application 09/658846 now US patent 6,418,378. The inventor of these two applications is a not co-inventor on the instant application.

Therefore the priority dates based under section 120 is not granted. Corrections are required. See 37 CFR 1:60(e)

Specification

5. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly

those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) If a machine or apparatus, its organization and operation;
- (2) If an article, its method of making;
- (3) If a chemical compound, its identity and use;
- (4) If a mixture, its ingredients;
- (5) If a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

6. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

7. The abstract of the disclosure is objected to because it exceeds the word range of within 50 to 150 words. The abstract contains 197 words and must be in narrative form as specified above. Correction is required. See MPEP § 608.01(b).

8. The disclosure is objected to because of the following informalities: The specification on page 1 cites an improper incorporation to application 09/603,068 and

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application 09658,846. Corrections are required in view of the defective declaration cited above. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-50 are rejected under 35 U.S.C. 102(b) as being anticipated by Hillesund et al., in WO 2000/20895.

With regard to claim 1, Hillesund et al., discloses the limitation of a towing vessel 10 towing the array of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the array comprises a plurality of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the active streamer-positioning device (ASPD) 18, the seismic streamer cable Birds 18 attached along the streamer cables 12 in the normal configuration in figure 1.

Hillesund et al., further discloses the limitation of a master controller 22 for the position control of Birds 18 (ASPD) in figure 1 and discloses the global control system 22 on page 6 in paragraph 2.

As to claim 2, Hillesund et al., discloses the limitation of arrays of sensors in the stream cable 12 in figure 1 and in paragraph 2 on page 1 including hydrophones and

environmental depth sensors found on the Birds 18 (ASPD) installed along the cable as found in paragraph 1 on page 2 and as known in the art.

As to claim 3, Hillesund et al., discloses the limitation of the tracking system for the (ASPD) 18, the "Birds" 18 in figure 1 in the global control system 22 in figure 1 with control of the local ASPD 18 to level the cable and discloses time and parameters of this control system in paragraph 1 of page 8.

As to claim 4, Hillesund et al., discloses the limitation of position and array geometry in paragraph 2 on page 8.

As to claim 5, Hillesund et al., discloses the limitation of force and velocity values delivered by the controller 22 in response to the ASPD bird 18 environmental values in paragraph 2 on page 8.

As to claim 6, Hillesund et al., discloses the limitation of compensation for vessel maneuverability influences in paragraph 2 on page 8.

As to claim 7, Hillesund et al., discloses the limitation of the monitor in the computer system on board the vessel 10 in operation with the control system 22 in figure 1 and in the apparatus means for controlling the streamer in the summary of the invention on page 4.

As to claim 8, Hillesund et al., discloses the limitation of the monitor in the computer system on board the vessel 10 in operation with the control system 22 in figure 1 and in the apparatus means for actuating the bird 18, as the (ASPD 18) in the streamer 12 in the summary of the invention on page 4.

As to claim 9, Hillesund et al., discloses the limitation of the monitor in the computer system on board the vessel 10 in operation with the control system 22 in figure 1 with the apparatus means for actuating the bird 18, as the (ASPD 18) in the streamer 12 and discloses in the summary of the invention on page 4 the obtaining data and calculating changes thereby detecting detects a failed streamer limitation.

As to claim 10, Hillesund et al., discloses the limitation of a plurality of streamers 12 in an array positioned at the uniformed depth in figure 1.

As to claim 11, Hillesund et al., discloses the limitation of a plurality of streamers 12 in an array positioned at the uniformed depth in figure 1 and discloses controlling the varying temporal resolution of the array with the position control 22 using the dynamic model for each of the streamers in paragraph 2 on page 7.

As to claim 12, Hillesund et al., discloses the limitation of limitation of a plurality of streamers 12 in an array positioned at the uniformed depth in figure 1 and discloses controlling the varying temporal resolution of the array with the position control 22 using the dynamic model for each of the streamers in paragraph 2 on page 7 and further discloses the roll angle θ with the equations for the desired bird 18 wing angle to control the streamer on page 17.

As to claim 13, Hillesund et al., discloses the limitation of transmission by communications inherent in the global control system 22 GPS systems, and disclosed in the dynamic model using communications lines and equipment between the vessels 10 in figure 1.

With regard to claim 14, Hillesund et al., discloses the limitation of a towing vessel 10 towing the array of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the array comprises a plurality of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the active streamer-positioning device (ASPD) 18, the seismic streamer cable Birds 18 attached along the streamer cables 12 in the normal configuration in figure 1.

Hillesund et al., further discloses the limitation of a master controller 22 for the position control of Birds 18 (ASPD) in figure 1 and discloses the global control system 22 on page 6 in paragraph 2.

Hillesund et al., further discloses the limitation of sensors in the stream cable 12 in figure 1 and in paragraph 2 on page 1 including hydrophones and environmental depth sensors found on the Birds 18 (ASPD) installed along the cable as found in paragraph 1 on page 2 and as known in the art.

Hillesund et al., further discloses the limitation of the tracking system for the (ASPD) 18, the "Birds" 18 in figure 1 in the global control system 22 in figure 1 with control of the local ASPD 18 to level the cable and discloses time and parameters of this control system in paragraph 1 of page 8.

Hillesund et al., further discloses the limitation of the array 12 geometry tracking system 22 for the (ASPD) 18, in the "Birds" 18 in figure 1 with the global control system 22 in figure 1 with control of the local ASPD 18 to compare desired positions and correct

and issue command to maintain the correct array geometry and level the cable and further discloses time and parameters of this control system in paragraph 1 page 8.

As to claim 15, Hillesund et al., discloses the limitation of force and velocity values delivered by the controller 22 in response to the ASPD bird 18 environmental values in paragraph 2 on page 8.

As to claim 16, Hillesund et al., discloses the limitation of compensation for vessel maneuverability influences in paragraph 2 on page 8.

As to claim 17, Hillesund et al., discloses the limitation of the monitor in the computer system on board the vessel 10 in operation with the control system 22 in figure 1 and in the apparatus means for controlling the streamer in the summary of the invention on page 4.

As to claim 18, Hillesund et al., discloses the limitation of the monitor in the computer system on board the vessel 10 in operation with the control system 22 in figure 1 and in the apparatus means for actuating the bird 18, as the (ASPD 18) in the streamer 12 in the summary of the invention on page 4.

With regard to claim 19, Hillesund et al., discloses the limitation of a towing vessel 10 towing the array of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the array comprises a plurality of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the active streamer-positioning device (ASPD) 18, the seismic streamer cable Birds 18 attached along the streamer cables 12 in the normal configuration in figure 1.

Hillesund et al., further discloses the limitation of a master controller 22 for the position control of Birds 18 (ASPD) in figure 1 and discloses the global control system 22 on page 6 in paragraph 2.

Hillesund et al., further discloses the limitation of sensors in the stream cable 12 in figure 1 and in paragraph 2 on page 1 including hydrophones and environmental depth sensors found on the Birds 18 (ASPD) installed along the cable as found in paragraph 1 on page 2 and as known in the art.

Hillesund et al., further discloses the limitation of the tracking system for the (ASPD) 18, the "Birds" 18 in figure 1 in the global control system 22 in figure 1 with control of the local ASPD 18 to level the cable and discloses time and parameters of this control system in paragraph 1 of page 8.

Hillesund et al., further discloses the limitation of the array 12 geometry tracking system 22 for the (ASPD) 18, in the "Birds" 18 in figure 1 with the global control system 22 in figure 1 with control of the local ASPD 18 to compare desired positions and correct and issue command to maintain the correct array geometry and level the cable and further discloses time and parameters of this control system in paragraph 1 page 8.

Hillesund et al., further discloses the limitation of the monitor in the computer system on board the vessel 10 in operation with the control system 22 in figure 1 and in the apparatus means for controlling the streamer in the summary of the invention on page 4.

Hillesund et al., further discloses the limitation of the monitor in the computer system on board the vessel 10 in operation with the control system 22 in figure 1 and in

the apparatus means for actuating the bird 18, as the (ASPD 18) in the streamer 12 in the summary of the invention on page 4.

With regard to claim 20, Hillesund et al., discloses the limitation of a towing vessel 10 towing the array of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the array comprises a plurality of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the active streamer-positioning device (ASPD) 18, the seismic streamer cable Birds 18 attached along the streamer cables 12 in the normal configuration in figure 1.

Hillesund et al., further discloses the limitation of a global master controller 22 for the position control of Birds 18 (ASPD) in figure 1 and discloses the global control system 22 on page 6 in paragraph 2.

As to claim 21, Hillesund et al., discloses the limitation of the global master controller 22 issues command control positions to the tow vessel 10 to maintain a specific streamer 12 geometric tow in figure 1 and in paragraph 1 on page 7.

As to claim 22, Hillesund et al., discloses the limitation of a central processing 54 in figure 4 and discloses the seismic data acquisition 10 in figure 1 and discloses the system software in paragraph 2 on page 16 and disclose the towing vessel 10 with the ASPD 18 on the streamer array cable 12 in the survey of figure 1.

As to claim 23, Hillesund et al., discloses the limitation of force and velocity values delivered by the controller 22 in response to the ASPD bird 18 environmental values in paragraph 2 on page 8.

As to claim 24, Hillesund et al., discloses the limitation of compensation for vessel maneuverability influences in paragraph 2 on page 8.

With regard to claim 25, Hillesund et al., discloses the limitation of a towing vessel 10 towing the array of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the array comprises a plurality of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the active streamer-positioning device (ASPD) 18, the seismic streamer cable Birds 18 attached along the streamer cables 12 in the normal configuration in figure 1.

Hillesund et al., further discloses the limitation of a global master controller 22 for the position control of Birds 18 (ASPD) in figure 1 and discloses the global control system 22 on page 6 in paragraph 2.

Hillesund et al., further discloses the limitation of a central processing 54 in figure 4 and discloses the seismic data acquisition 10 in figure 1 and discloses the system software in paragraph 2 on page 16 and discloses the towing vessel 10 with the Bird ASPD 18 on the streamer array cable 12 in the seismic survey of figure 1.

Hillesund et al., further discloses the limitation of compensation for vessel maneuverability influences in paragraph 2 on page 8.

With regard to claim 26, Hillesund et al., discloses the limitation of a towing vessel 10 towing the array of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the array comprises a plurality of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the active streamer-positioning device (ASPD) 18, the seismic streamer cable Birds 18 attached along the streamer cables 12 in the normal configuration in figure 1.

Hillesund et al., further discloses the limitation of a master controller 22 for the position control of Birds 18 (ASPD) in figure 1 and discloses the global control system 22 on page 6 in paragraph 2.

Hillesund et al., further discloses the limitation of compensation for vessel maneuverability influences in paragraph 2 on page 8.

As to claim 27, Hillesund et al., discloses the limitation of providing an array of sensors in the stream cable 12 in figure 1 and in paragraph 2 on page 1 including hydrophones and environmental depth sensors found on the Birds 18 (ASPD) installed along the cable as found in paragraph 1 on page 2 and as known in the art.

As to claim 28, Hillesund et al., further discloses the limitation of the array 12 geometry tracking system 22 for the (ASPD) 18, in the "Birds" 18 in figure 1 with the global control system 22 in figure 1 with control of the local ASPD 18 to compare desired positions and correct and issue commands to maintain the correct array geometry and level the cable and further discloses time and parameters measurements of this control system in paragraph 1 page 8.

As to claim 29, Hillesund et al., discloses the limitation of the array 12 geometry tracking system 22 for the (ASPD) 18, in the "Birds" 18 in figure 1 positions the cable 12 with the array of birds 18 using the dynamic model with the global control system 22 in figure 1 for control of the local ASPD 18 to compare desired positions and correct and

issue commands to maintain the correct array geometry and level the cable and further discloses time and parameters measurements of this control system in paragraph 1 page 8 and provides for the central processor 54 to run the local control system in paragraph 2 on page 16.

As to claim 30, Hillesund et al., discloses the limitation of force and velocity values delivered by the controller 22 in response to the ASPD bird 18 environmental values in paragraph 2 on page 8.

As to claim 31, Hillesund et al., discloses the limitation of compensation for vessel maneuverability influences in paragraph 2 on page 8.

As to claim 32, Hillesund et al., discloses the limitation of the monitor in the computer system on board the vessel 10 in operation with the control system 22 in figure 1 and in the apparatus means for controlling the streamer in the summary of the invention on page 4.

As to claim 33, Hillesund et al., discloses the limitation of the monitor in the computer system on board the vessel 10 in operation with the control system 22 in figure 1 and in the apparatus means for actuating the bird 18, as the (ASPD 18) in the streamer 12 in the summary of the invention on page 4.

As to claim 34, Hillesund et al., discloses the limitation of the monitor in the computer system on board the vessel 10 in operation with the control system 22 in figure 1 with the apparatus means for actuating the bird 18, as the (ASPD 18) in the streamer 12 and discloses in the summary of the invention on page 4 the obtaining data and calculating changes thereby detecting detects a failed streamer limitation.

As to claim 35, Hillesund et al., discloses the limitation of a plurality of streamers 12 in an array positioned at the uniformed depth in figure 1.

As to claim 36, Hillesund et al., discloses the limitation of a plurality of streamers 12 in an array positioned at the uniformed depth in figure 1 and discloses controlling the varying temporal resolution of the array with the position control 22 using the dynamic model for each of the streamers in paragraph 2 on page 7.

As to claim 37, Hillesund et al., discloses the limitation of limitation of a plurality of streamers 12 in an array positioned at the uniformed depth in figure 1 and discloses controlling the varying temporal resolution of the array with the position control 22 using the dynamic model for each of the streamers in paragraph 2 on page 7 and further discloses the roll angle θ with the equations for the desired bird 18 wing angle to control the streamer on page 17.

As to claim 38, Hillesund et al., discloses the limitation of transmission by communications inherent in the global control system 22 GPS systems, and disclosed in the dynamic model using communications lines and equipment between the vessels 10 in figure 1.

With regard to claim 39, Hillesund et al., discloses the limitation of a towing vessel 10 towing the array of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the array comprises a plurality of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the active streamer-positioning device (ASPD) 18, the seismic streamer cable Birds 18 attached along the streamer cables 12 in the normal configuration in figure 1.

Hillesund et al., further discloses the limitation of a master controller 22 for the position control of Birds 18 (ASPD) in figure 1 and discloses the global control system 22 on page 6 in paragraph 2.

Hillesund et al., further discloses the limitation of sensors in the stream cable 12 in figure 1 and in paragraph 2 on page 1 including hydrophones and environmental depth sensors found on the Birds 18 (ASPD) installed along the cable as found in paragraph 1 on page 2 and as known in the art.

Hillesund et al., further discloses the limitation of the tracking system for the (ASPD) 18, the "Birds" 18 in figure 1 in the global control system 22 in figure 1 with control of the local ASPD 18 to level the cable and discloses time and parameters of this control system in paragraph 1 of page 8.

Hillesund et al., further discloses the limitation of the array 12 geometry tracking system 22 for the (ASPD) 18, in the "Birds" 18 in figure 1 with the global control system 22 in figure 1 with control of the local ASPD 18 to compare desired positions and correct and issue command to maintain the correct array geometry and level the cable and further discloses time and parameters of this control system in paragraph 1 page 8.

Hillesund et al., further discloses the limitation of the monitor in the computer system on board the vessel 10 in operation with the control system 22 in figure 1 and in

the apparatus means for controlling the streamer in the summary of the invention on page 4.

Hillesund et al., further discloses the limitation of the array 12 geometry tracking system 22 for the (ASPD) 18, in the "Birds" 18 in figure 1 with the global control system 22 in figure 1 with control of the local ASPD 18 to compare desired positions and correct and issue commands to maintain the correct array geometry and level the cable and further discloses time and parameters measurements of this control system in paragraph 1 page 8.

Hillesund et al., further discloses the limitation of the monitor in the computer system on board the vessel 10 in operation with the control system 22 in figure 1 and in the apparatus means for actuating the bird 18, as the (ASPD 18) in the streamer 12 in the summary of the invention on page 4.

As to claim 40, Hillesund et al., discloses the limitation of position and array geometry in paragraph 2 on page 8.

As to claim 41, Hillesund et al., discloses the limitation of force and velocity values delivered by the controller 22 in response to the ASPD bird 18 environmental values in paragraph 2 on page 8.

As to claim 42, Hillesund et al., discloses the limitation of the monitor in the computer system on board the vessel 10 in operation with the control system 22 in figure 1 and in the apparatus means for actuating the bird 18, as the (ASPD 18) in the streamer 12 in the summary of the invention on page 4.

As to claim 43, Hillesund et al., discloses the limitation of the monitor in the computer system on board the vessel 10 in operation with the control system 22 in figure 1 with the apparatus means for actuating the bird 18, as the (ASPD 18) in the streamer 12 and discloses in the summary of the invention on page 4 the obtaining data and calculating changes thereby detecting detects a failed streamer limitation.

With regard to claim 44, Hillesund et al., discloses the limitation of a towing vessel 10 towing the array of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the array comprises a plurality of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the active streamer-positioning device (ASPD) 18, the seismic streamer cable Birds 18 attached along the streamer cables 12 in the normal configuration in figure 1.

Hillesund et al., further discloses the limitation of a master controller 22 for the position control of Birds 18 (ASPD) in figure 1 and discloses the global control system 22 on page 6 in paragraph 2.

Hillesund et al., further discloses the limitation of sensors in the stream cable 12 in figure 1 and in paragraph 2 on page 1 including hydrophones and environmental depth sensors found on the Birds 18 (ASPD) installed along the cable as found in paragraph 1 on page 2 and as known in the art.

Hillesund et al., further discloses the limitation of the tracking system for the (ASPD) 18, the "Birds" 18 in figure 1 in the global control system 22 in figure 1 with

control of the local ASPD 18 to level the cable and discloses time and parameters of this control system in paragraph 1 of page 8.

Hillesund et al., further discloses the limitation of the array 12 geometry tracking system 22 for the (ASPD) 18, in the "Birds" 18 in figure 1 with the global control system 22 in figure 1 with control of the local ASPD 18 to compare desired positions and correct and issue command to maintain the correct array geometry and level the cable and further discloses time and parameters of this control system in paragraph 1 page 8.

Hillesund et al., further discloses the limitation of the monitor in the computer system on board the vessel 10 in operation with the control system 22 in figure 1 and in the apparatus means for controlling the streamer in the summary of the invention on page 4. Hillesund et al., further discloses the limitation of the monitor in the computer system on board the vessel 10 in operation with the control system 22 in figure 1 and in the apparatus means for actuating the bird 18, as the (ASPD 18) in the streamer 12 in the summary of the invention on page 4.

With regard to claim 45, Hillesund et al., discloses the limitation of a towing vessel 10 towing the array of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the array comprises a plurality of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the active streamer-positioning device (ASPD) 18, see the seismic streamer cable Birds 18 attached along the streamer cables 12 in the normal configuration in figure 1.

Hillesund et al., further discloses the limitation of a global master controller 22 for the position control of Birds 18 (ASPD) in figure 1 by the local controller in figure 1 and processor 54 in figure 4 and discloses the global control system 22 on page 6 in paragraph 2.

As to claim 46, Hillesund et al., discloses the limitation of the global master controller 22 issues command control positions to the tow vessel 10 to maintain a specific streamer 12 geometric tow in figure 1 and in paragraph 1 on page 7.

As to claim 47, Hillesund et al., discloses the limitation of a central processing 54 in figure 4 and discloses the seismic data acquisition 10 in figure 1 and discloses the system software in paragraph 2 on page 16 and disclose the towing vessel 10 with the ASPD 18 on the streamer array cable 12 in the survey of figure 1.

As to claim 48, Hillesund et al., discloses the limitation of force and velocity values delivered by the controller 22 in response to the ASPD bird 18 environmental values in paragraph 2 on page 8.

As to claim 49, Hillesund et al., discloses the limitation of compensation for vessel maneuverability influences in paragraph 2 on page 8.

With regard to claim 50, Hillesund et al., discloses the limitation of a towing vessel 10 towing the array of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the array comprises a plurality of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the active streamer-positioning device (ASPD) 18, the seismic streamer cable Birds 18 attached along the streamer cables 12 in the normal configuration in figure 1.

Hillesund et al., further discloses the limitation of a global master controller 22 for the position control of Birds 18 (ASPD) in figure 1 and discloses the global control system 22 on page 6 in paragraph 2.

Hillesund et al., further discloses the limitation of a central processing 54 in figure 4 and discloses the seismic data acquisition 10 in figure 1 and discloses the system software in paragraph 2 on page 16 and discloses the towing vessel 10 with the Bird ASPD 18 on the streamer array cable 12 in the seismic survey of figure 1.

Hillesund et al., further discloses the limitation of compensation for vessel maneuverability influences in paragraph 2 on page 8.

Hillesund et al., discloses the limitation of a towing vessel 10 towing the array of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the array comprises a plurality of streamer cables 12 in figure 1.

Hillesund et al., further discloses the limitation of the active streamer-positioning device (ASPD) 18, the seismic streamer cable Birds 18 attached along the streamer cables 12 in the normal configuration in figure 1.

Hillesund et al., further discloses the limitation of a master controller 22 for the position control of Birds 18 (ASPD) in figure 1 and discloses the global control system 22 on page 6 in paragraph 2.

Hillesund et al., further discloses the limitation of compensation for vessel maneuverability influences in paragraph 2 on page 8.

Prior Art

9. The prior art of record and not relied upon is considered pertinent to applicant.

Deplante et al., US 5,784,335 is cited for the 3-D cube data processing of seismic data with control of the streamer cables in figure 3.

Ambs, US 6,028,817 is cited for the vessels towing the swath of cables with the communications and cable control for acquiring seismic data applicability to the limitations in claim 1 as noted in figure 3 all elements and discloses in lines 35- 65 of column 5.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor Taylor whose telephone number is 703-305-4470. The examiner can normally be reached on 8:00 to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 703-305-4816. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-5841 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.

Examiner V. Taylor

Vicki Taylor
Art Unit 2862

March 20, 2003

Edward Lefkowitz
EDWARD LEFKOWITZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

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Notice of References Cited

Application/Control No.
09/882,952

Examiner
Victor Taylor

Applicant(s)/Patent Under
Reexamination
ZAJAC, MARK

Art Unit
2862

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U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,784,335	07-1998	Deplante et al.	367/072
X	B	US-6,028,817 CITED	02-2000	Ambs PAPER #5	367/016
	C	US-5,920,828	07-1999	Norris et al.	702/014
	D	US-6,418,378	07-2002	Nyland	702/014
	E	US-4,890,568	01-1990	Dolengowski	114/246
	F	US-4,676,183 Page 6	01-1987	Conboy	114/245
	G	US-4,729,330 3	03-1988	Kirby et al.	114/244
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N	WO 00/20895	04-2000	WIPO	Hillesund et al.	GO1V 1/38
	O	EP 0,613,025 A1	08-1994	NO EPX	Elholm, Tor	GO1V 1/38
	P	GB 2,122,562 A	01-1984	GB	Johannes, Jacobus	B63B 21/66
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.