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(71) Applicant: **HALLIBURTON ENERGY SERVICES, INC.** [US/US]; 3000 N. SAM HOUSTON PARKWAY E., HOUSTON, Texas 77032-3219 (US).

(72) Inventors: **EWE, Wei-Bin**; 208, BT BATOK ST 21, #05-132, SINGAPORE 650208 (SG). **WANG, Ruijia**; 987D JURONG WEST STREET 93 #14-593, SINGAPORE 644987 (SG).

(74) Agent: **COREY S. TUMEY**; P.O BOX 890226, HOUSTON, Texas 77062-9998 (US).

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(54) Title: PAD ALIGNMENT WITH A MULTI-FREQUENCY-BAND AND MULTI-WINDOW SEMBLANCE PROCESSING

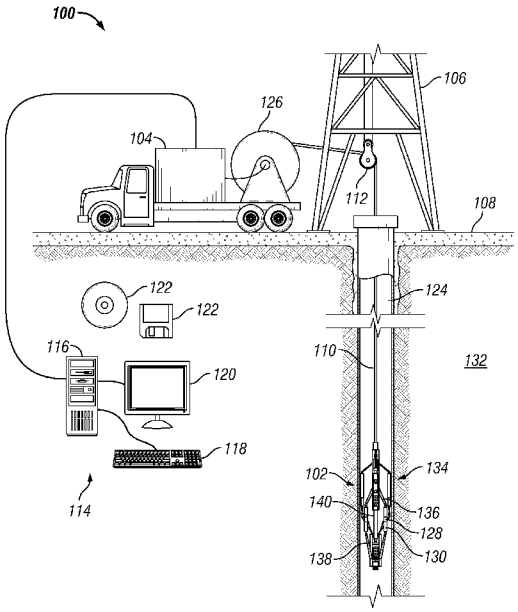

FIG. 1

(57) Abstract: A method and system for pad alignment may comprise disposing a downhole tool into a borehole, taking a measurement with the electrode with at least one operating frequency, correcting the measurement to account for local formation dip, constructing a window with a predetermined size H, identifying a number of adaptive filters to be utilized, extracting one or more frequency components from the measurement with the adaptive filters, identifying a semblance value of a reference dataset and a target dataset, assembling the semblance values for the reference dataset and the target dataset, identifying the semblance values of the reference dataset and target datasets over the range of relative pad shifts, identifying a pad shift, and forming one or more images of the pad shirt or the semblance of the reference dataset and target data set. The system may comprise a mandrel, one or more pads, and electrodes.

WO 2021/006874 A3

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

E21B 47/01(2006.01)i, E21B 41/00(2006.01)i, E21B 17/10(2006.01)i, E21B 23/12(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
E21B 47/01; E21B 47/00; E21B 49/00; G01V 1/40; G01V 1/46; G01V 1/48; G01V 1/50; G01V 3/18; G01V 3/20; E21B 41/00; E21B 17/10; E21B 23/12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & keywords: pad alignment, semblance, window, frequency, filter, electrode

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4468623 A (GIANZERO et al.) 28 August 1984 column 4, lines 38-63 and figure 1	1-20
A	US 9523784 B2 (SCHLUMBERGER TECHNOLOGY CORPORATION) 20 December 2016 column 19, lines 11-20, column 20, line 52 - column 21, line 19, claim 1, and figure 9	1-20
A	US 5198770 A (DECORPS et al.) 30 March 1993 column 4, lines 12-38	1-20
A	WO 2018-231234 A1 (HALLIBURTON ENERGY SERVICES, INC.) 20 December 2018 paragraphs [0071]-[0078] and figures 10A-11B	1-20
A	WO 2018-084847 A1 (HALLIBURTON ENERGY SERVICES, INC.) 11 May 2018 page 12, lines 15-26 and figure 7	1-20

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"D" document cited by the applicant in the international application
"E" earlier application or patent but published on or after the international filing date
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"O" document referring to an oral disclosure, use, exhibition or other means
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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents,such combination being obvious to a person skilled in the art
"&" document member of the same patent family

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Name and mailing address of the ISA/KR
International Application Division
Korean Intellectual Property Office
189 Cheongsa-ro, Seo-gu, Daejeon, 35208, Republic of Korea
Facsimile No. +82-42-481-8578

Authorized officer
HWANG, Chan Yoon
Telephone No. +82-42-481-3347

INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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