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[Continued on next page]

(54) Title: A SYSTEM AND METHOD FOR REAL-TIME QUALITY CONTROL FOR DOWNHOLE LOGGING DEVICES

(57) Abstract: An illustrative embodiment of a method is disclosed for assessing image quality of a down hole formation image, the method comprising collecting acquisition system data from a plurality of sensors down hole; applying a set of rules to the acquisition system data to obtain an acquisition quality indicator; and presenting the acquisition quality indicator at a surface location. A system is disclosed for performing the method.

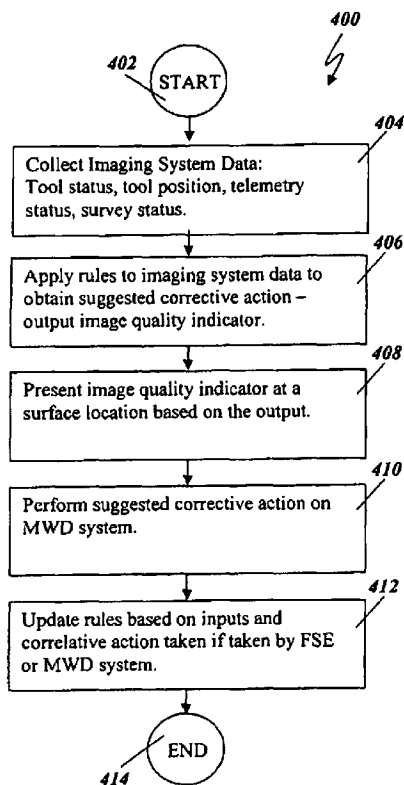


FIG. 4

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**(81) Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declarations under Rule 4.17:**

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

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<p>A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - E21B 43/26, G01V 3/18 (2009.01) USPC - 324/303, 175/40 According to International Patent Classification (IPC) or to both national classification and IPC</p>																	
<p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols) USPC - 324/303, 175/40 IPC(8) - E21B 43/26, G01V 3/18 (2009.01)</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC - 181/122, 340/853.9 (Text limited search, see terms below)</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PubWEST(USPT,PGPB,USOC,EPAB,JPAB);Google Scholar TERMS sensor expert system image quality computer processor program current low resistivity rule dynamic weight downhole borehole heuristic fuzzy logic neural network alert alarm formation resistance alarm\$3 alert\$3 warn\$3 notif\$3 notification electrode</p>																	
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p> <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X --- Y</td> <td>US 2007/0112521 A1 (Akimov et al.) 17 May 2007 (17.05.2007), para [0010], [0015]-[0017], [0014], [0027], [0030], [0037], [0044]</td> <td>1-3, 9-11 ----- 4-8, 12-16</td> </tr> <tr> <td>Y</td> <td>US 2004/0153245 A1 (Womer et al.) 05 August 2004 (05.08.2004), para [0007], [0013], [0035], [0038]</td> <td>4-8, 12-16</td> </tr> <tr> <td>Y</td> <td>Nikraves et al., "Soft Computing for Reservoir Characterization" STUDIES IN FUZZINESS AND SOFT COMPUTING, 2004, VOL 142, pages 1-79, 28 September 2004 (28.09.2004), pp. 5-8, 15. archived at: <a href="http://web.archive.org/web/*http://www-bisc.cs.berkeley.edu/BISCPProgram/SCRC/KlirDraftPaper_1.doc">http://web.archive.org/web/*http://www-bisc.cs.berkeley.edu/BISCPProgram/SCRC/KlirDraftPaper_1.doc</a></td> <td>6-8, 14-16</td> </tr> <tr> <td>Y</td> <td>US 7,242,194 B2 (Hayman et al.) 10 July 2007 (10.07.2007), col 3, ln 18-22</td> <td>8, 16</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X --- Y	US 2007/0112521 A1 (Akimov et al.) 17 May 2007 (17.05.2007), para [0010], [0015]-[0017], [0014], [0027], [0030], [0037], [0044]	1-3, 9-11 ----- 4-8, 12-16	Y	US 2004/0153245 A1 (Womer et al.) 05 August 2004 (05.08.2004), para [0007], [0013], [0035], [0038]	4-8, 12-16	Y	Nikraves et al., "Soft Computing for Reservoir Characterization" STUDIES IN FUZZINESS AND SOFT COMPUTING, 2004, VOL 142, pages 1-79, 28 September 2004 (28.09.2004), pp. 5-8, 15. archived at: <a href="http://web.archive.org/web/*http://www-bisc.cs.berkeley.edu/BISCPProgram/SCRC/KlirDraftPaper_1.doc">http://web.archive.org/web/*http://www-bisc.cs.berkeley.edu/BISCPProgram/SCRC/KlirDraftPaper_1.doc</a>	6-8, 14-16	Y	US 7,242,194 B2 (Hayman et al.) 10 July 2007 (10.07.2007), col 3, ln 18-22	8, 16
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<p>Date of the actual completion of the international search 14 May 2009 (14.05.2009)</p>		<p>Date of mailing of the international search report <b>26 MAY 2009</b></p>															
<p>Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201</p>		<p>Authorized officer: Lee W. Young</p> <p>PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774</p>															