BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

Internal distribution code:
(A) [ ] Publication in OJ
(B) [ ] To Chairmen and Members
(C) [ ] To Chairmen
(D) [X] No distribution

Datasheet for the decision of 15 June 2010

Case Number: T 1503/07 - 3.2.03

Application Number: 03076154.8

Publication Number: 1335108

IPC: E21B 47/12

Language of the proceedings: EN

Title of invention:
Apparatus and method for determining a drilling mode to optimize formation evaluation measurements

Applicant:
Schlumberger Limited (a Netherland Antilles corp.) et al

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 54

Relevant legal provisions (EPC 1973):
-

Keyword:
"Novelty (no)"

Decisions cited:
-

Catchword:
-

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1503/07 - 3.2.03

D E C I S I O N
of the Technical Board of Appeal 3.2.03
of 15 June 2010

Appellant: Schlumberger Limited (a Netherland Antilles corp.)
having an office at: 277 Park Avenue
New York
N.Y. 10172 (US)

Services Petroliers Schlumberger
42, rue Saint-Dominique
F-75007 Paris (FR)

SCHLUMBERGER TECHNOLOGY B.V.
Parkstraat 83-89
NL-2514 JG Den Haag (NL)

Representative: Raybaud, Hélène F.A.
Etudes & Productions Schlumberger
Intellectual Property Law Department
1 Rue Henri Becquerel
B.P 202
F-92142 Clamart Cedex (FR)

Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 23 April 2007 refusing European application No. 03076154.8 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: U. Krause
Members: E. Frank
K. Garnett

Summary of Facts and Submissions

I. The appeal lies from the decision of the Examining Division of 23 April 2007 to refuse European Application No. 03 076 154.8 pursuant to Article 97(1) EPC 1973. The Examining Division held that the subject-matter of claim 1 as filed did not meet the requirements of novelty over US 5 242 020 A (D2).

II. The Appellant (Applicant) filed a notice of Appeal on 18 June 2007, paying the appeal fee on the same day. The statement of grounds of appeal was filed on 21 August 2007.

III. The Appellant requested that the decision under appeal be set aside and a patent be granted on the basis of the application as filed.

IV. The wording of claim 1 reads as follows:

" A method for modifying a data acquisition sequence, comprising drilling a borehole (16) into an earth formation using a drill string, further comprising the steps of:

a) while drilling the borehole (16), detecting a current downhole condition;
b) identifying a current drilling process mode;
c) selecting a data acquisition sequence based upon the current drilling process mode; and
d) modifying a current data acquisition sequence based upon the selected data acquisition sequence."

V. The Appellant submitted the following arguments:

Although D2 taught the step of detecting a current downhole condition, no drilling mode was identified by the D2 tool and therefore no data acquisition sequence could be based upon it. Even if the operator identified the drilling mode, the operator was not selecting a data acquisition sequence based on that mode. In fact, D2 only addressed a tool that made a particular measurement or set of measurements while in "retracted mode", and then repeated these same measurements with the tool in "extended mode". Thus, D2 did not contemplate the order in which different measurements were made or when during the drilling program a particular measurement was made based on the current drilling mode. As opposed to this, based on the downhole conditions or drilling process mode, the present invention might choose to change the measurement type in its entirety, or change the way a measurement is made according to the selected data acquisition sequence, thereby modifying the current data acquisition sequence. Therefore, claim 1 was novel with respect to the disclosure of D2.

Reasons for the Decision

1. The appeal is admissible.

2. *Novelty*
(Article 54 EPC)

2.1 Having regard to the wording of claim 1, the Board firstly notes that none of the method steps (b) to (d) are based on, or initiated by, the detected current

downhole condition, ie any of the current borehole or formation characteristics of step (a). Moreover, the question arises as to how in claim 1 a current data acquisition sequence has to be modified as is required by step (d), when being "based upon" the selected data acquisition sequence of step (c), which in turn is based on the current drilling process mode of step (b). According to the Appellant, and also in conformance with the disclosure throughout the present application, the drilling mode (or mode of operation) is first determined. Based on this drilling mode, a suitable data acquisition model is utilized (ie "selected": cf. specification, page 5, paragraph [0024]) and the data acquisition sequence is modified accordingly, to thus optimize formation evaluation measurements: cf. specification, paragraphs [0005],[0007] and [0015]. As regards the term "data acquisition sequence" of claim 1, the Board agrees with the Examining Division's view that the description of the application is vague in this respect. It is only stated that various types of formation evaluation measurements are advantageously performed during a drilling pause without, however, describing or hinting at any particular order: cf. specification, paragraphs [0024] and [0026] to [0034]. Consequently, any data acquisition sequence (ie any measurements), which is selected based upon the current drilling process mode, and which is distinct from the current data acquisition sequence, is considered to modify the latter in accordance with step (d) of claim 1.

2.2 The document D2 relates to formation evaluation by means of a measurement-while-drilling (MWD) tool. A method is provided to use an extending arm of D2's tool

intermittently: cf. D2, column 2, lines 18 to 27 and 60 to 64.

Since in a first step drilling takes place, with the tool's extendable arm retracted, whilst acquired data for formation evaluation is sent to the surface in real time using known MWD techniques, detection of a current downhole condition as is required by step (a) of claim 1 is disclosed by D2: cf. column 8, lines 31 to 38.

Furthermore, when the current acquired data sequence is received on the surface and indicates that a zone of interest has been drilled, the drilling process is stopped and the borehole section of interest is subsequently redrilled (reamed) with the arm extended: cf. D2, column 8, lines 39 to 45 and column 9, lines 4 to 9. Thus, the Board agrees with the decision of the Examining Division that it must be recognized in D2 (eg by the drilling operator) that the drilling mode is reaming as opposed to drilling with the arm retracted, and therefore the current drilling process is identified as is required by step (b) of claim 1.

Moreover, D2 explicitly states that for certain formation evaluation tools it is important to minimize the distance between the borehole wall and both the source (eg, nuclear) and detector assemblies in the tool: cf. D2, column 1, lines 46 to 49. For some tools, contact with the formation is absolutely essential, since otherwise quality of measurement rapidly decreases with only a slight stand-off and therefore D2 envisages an appropriate measuring method: cf. D2, column 1, lines 49 to 52 and column 7, lines 19 to 35.

Thus, in the view of the Board, measurements according to D2's method in contact with the borehole wall must necessarily lead to a selection of a data acquisition sequence distinct from the data sequence acquired when the arm is in its retracted position, ie to a plurality of measurements for the provision of accurate MWD formation data or a caliper log: cf. D2; column 9; lines 7 to 9, 19 to 22, and 25 to 27.

Therefore, the skilled person would directly and unambiguously recognize that during the drilling mode "reaming" in D2 the now extended arm of the tool is in contact with the formation wall, and that based on this, the selection of the acquired data sequence must be different from the current data acquisition sequence in at least one data record, ie in at least one measurement. Thus, the Board follows the decision of the Examining Division that D2 also discloses a selected and thereby modified current data acquisition sequence according to features (c) and (d) of method claim 1.

The subject-matter of claim 1 therefore does not meet the requirements of novelty.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar | The Chairman

V. Commare | U. Krause