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**Datasheet for the decision
of 20 February 2025**

Case Number: T 1831/23 - 3.2.01

Application Number: 15710182.5

Publication Number: 3119985

IPC: E21B41/00, E21B47/00

Language of the proceedings: EN

Title of invention:

A METHOD AND APPARATUS FOR VERIFYING A WELL MODEL

Applicant:

Welltec A/S

Headword:

Relevant legal provisions:

EPC Art. 54

RPBA 2020 Art. 12(6)

Keyword:

Novelty - (no)

Late-filed request - admitted in first-instance proceedings

(no) - error in use of discretion at first instance (no) -

circumstances of appeal case justify admittance (no) -

admitted (no)

Decisions cited:

Catchword:



Beschwerdekammern
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Case Number: T 1831/23 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 20 February 2025

Appellant: Welltec A/S
(Applicant) Gydevang 25
3450 Allerød (DK)

Representative: Dragsted Partners A/S
Rådhuspladsen 16
1550 Copenhagen V (DK)

Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 11 April 2023
refusing European patent application No.
15710182.5 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairwoman A. Jimenez
Members: M. Geisenhofer
V. Vinci

Summary of Facts and Submissions

- I. The appeal was filed by the applicant (appellant) against the decision of the examining division to refuse the patent application in suit.
- II. The examining division decided that the subject-matter of independent claim 1 according to the main request and to the auxiliary requests 1 -5 lacked novelty over document

D3 WO 2007/147135 A2

Auxiliary requests 6-8 were not admitted by the examining division since they did prima facie not overcome the novelty objection with regard to D3 either.

- III. Since the request for oral proceedings was withdrawn with letter dated 14 January 2025 , the Board decided in written proceedings.
- IV. The appellant requested that the decision under appeal be set aside and a patent be granted based on the main request underlying the decision under appeal, filed again with the statement of grounds of appeal, in the alternative based on one of the auxiliary requests 1-8 filed with the statement of grounds of appeal, these requests being identical to auxiliary requests 1-8 on which the examining division's decision was based.
- V. Claim 1 of the main request reads as follows:

"A method (200) for verifying a well model (100), comprising the steps of:

- *receiving (202) stored well data of an existing well, said well data describing or relating to a specific condition downhole,*
- *forming (204) a model based on the received well data, the model being a representation of the existing well,*
- *submerging (206) a tool for performing a work task into the existing well, wherein the tool is arranged to sense present well characteristics, in the form of structural or physical properties downhole, when submerged,*
- *receiving (208) tool data corresponding to the presently sensed well characteristics from the tool, said tool data representing downhole properties being relevant to downhole operation and performance of the submerged tool, and*
- *performing (210) a confirmation check by comparing the well data of the model with the tool data."*

Claim 1 of auxiliary request 1 additionally specifies that the the well data are "*obtained during drilling of the well*".

Claim 1 of auxiliary request 2 additionally specifies that the comparison of well data of the model with the tool data serves "*to confirm the accuracy of the well model*".

Claim 1 of auxiliary request 3 additionally specifies that the existing well is "*at least partly and/or fully drilled*".

Claim 1 of auxiliary request 4 additionally defines in the model forming step that "*the model comprising data on how the well propagates through a coordinate system*".

Claim 1 of auxiliary request 5 requires that "the model being represented in three dimensions using orthogonal coordinates".

Claim 1 of auxiliary request 6 comprises a numbering of the method steps and additionally claims that the steps of receiving tool data from the tool and performing a confirmation check are repeated during the operation of the tool. Furthermore, it is specified that the tool is a "*downhole tool*".

Claim 1 of auxiliary request 7 is based on claim 1 of auxiliary request 6 and additionally defines the step of "*updating the well model in case of a mismatch between the well model and the received tool data*".

Claim 1 of auxiliary request 8 defines in addition to claim 1 of the main request that after performing a confirmation check the additional step of "*controlling the operation state of the tool based on the output from the confirmation check*" is carried out.

VI. The appellant's arguments as being relevant for the present decision can be summarised as follows:

Document D3 was not novelty destroying since D3 did not use well data but data of the earth around the well.

Reasons for the Decision

Main request

1. The examining division held that the subject-matter of independent claim 1 lacked novelty over D3.

- 1.1 D3 discloses a method for verifying a well model (see abstract: initial Earth Model is verified in step 213 in figure), comprising the steps of:
- receiving (e. g. paragraph [120]: "*using existing information*") stored well data of an existing well, said well data describing or relating to a specific condition downhole (paragraph [027]: permeability, rock strength, surface parameters),
 - forming a model based on the received well data, the model being a representation of the existing well,
 - submerging a tool for performing a work task into the existing well, wherein the tool is arranged to sense present well characteristics (paragraph [0075]: "*measurements or other observations taken at the wellsite*", "*in-situ measurements*"; paragraph [158]: "*Drill collar ... includes an apparatus 143 for determining and communicating one or more properties of the formation 17*", "*Drill collar 139 houses a measurement-while-drilling (MWD) tool*"), in the form of structural or physical properties downhole, when submerged ("*formation resistivity (or conductivity), natural radiation, density (gamma ray or neutron), and pore pressure*"),
 - receiving (see paragraph [159]: "*input data*") tool data corresponding to the presently sensed well characteristics from the tool, said tool data representing downhole properties being relevant to downhole operation and performance of the submerged tool, and
 - performing a confirmation check by comparing the well data of the model with the tool data (see paragraph [077]: "*the 'observed conditions' are compared with the 'predictions' that are generated*").

- 1.2 The appellant argued that claim 1 was directed to well data and a model of the well, whereas D3 referred to soil parameters and a model of the earth around the well. In their opinion, the well was just the void in the soil without taking the surrounding soil into consideration.
- 1.3 The Board disagrees to the appellant's definition of a well.
 - 1.3.1 A well is not only the drilled hole as such but also the soil around the hole defining the void of the well and the casing securing the void such that soil cannot fall into the void. A well serves to extract fluids from the surrounding soil (e. g. gas, oil or water) such that the well characteristics depend not only on the geometry of the hole but also on the interaction with the surrounding soil, i. e. *inter alia* on the permeability of the soil (determining the amount of liquid/gas that can be pumped out of the well), mechanical soil parameters (influencing the design of the casing and/or supplementary techniques to ensure stability of the borehole after drilling), or discontinuities in the surrounding soil (such as fractures or changes in soil type that influence again the casing technique used to stabilize the borehole).
 - 1.3.2 The claim refers to "well data" which is broad and does not restrict the data used to the physical properties of the void as such but encompasses any data related with the well, these data also including the above identified parameters influencing the process of building the well and exploiting it during production.

- 1.4 D3 uses drilling data for the purpose of validation information as disclosed in paragraph [075]. Furthermore, D3 uses wellbore images (see paragraph [079]), and imaging and/or sonic scanning technology (see paragraph [080]) to identify fractures. These data are also "well data" within the meaning of claim 1 that can be used for deciding on the kind of casing used and how to fix it in place.
- 1.5 D3 hence anticipates the subject-matter of claim 1 of the main request as correctly decided by the examining division.

Auxiliary requests 1 - 5

2. The examining division held that the subject-matter of independent claim 1 of any of auxiliary requests 1 - 5 lacked novelty over D3.
- 2.1 The appellant alleged in their statement of grounds of appeal that claim 1 of each respective auxiliary request is novel but did not provide concrete reasons why the examining division's decision was not correct.
- The Board hence is not aware of a reason why it should deviate from the examining division's decision.
- 2.2 On the contrary, the Board fully shares the decision:
- 2.2.1 D3 uses data obtained during drilling of the well to form the initial Earth Model (see also paragraph [143]; paragraph [158]: "MWD-tool"). If well data are gathered during drilling, the well is in any case partly or almost fully drilled.

The subject-matter of claim 1 according to auxiliary requests 1 and 3 hence lacks novelty, as correctly decided by the examining division.

- 2.2.2 Performing a confirmation check by comparing the model to the measurements always serves to confirm the accuracy of the well model. Figure 4 of D3 shows this in step 140: If observations agree with predictions, the Earth Model is accepted as calibrated Earth Model, otherwise the model is adjusted.

The subject-matter of claim 1 according to auxiliary request 2 hence lacks novelty, as correctly decided by the examining division.

- 2.2.3 Figure 7A of D3 discloses in the right row in the upper picture of the model a three-dimensional illustration of the soil which implicitly involves use of a Cartesian coordinate system, the three dimensions being orthogonal coordinates.

The subject-matter of claim 1 according to auxiliary requests 4 and 5 hence lacks novelty, as correctly decided by the examining division (albeit they referred by error to figure 7B instead of 7A).

Auxiliary requests 6 - 8

3. The examining division did not admit auxiliary requests 6 - 8.

- 3.1 The examining division's decision was based on the criteria of *prima facie*-patentability, which is one of the suitable criteria that can be used when taking a

discretionary decision on the admittance of late filed requests in examination proceedings.

- 3.1.1 The Board considers the examining division's decision including the reasons given (see paragraphs 56 - 58 of their decision) to be a reasonable application of their discretion. The appellant did not argue that the examining division applied their discretion in an unreasonable way.
- 3.1.2 The Board is hence not aware of a reason why the examining division's discretionary decision to not admit auxiliary requests 6 - 8 was incorrect.
- 3.2 The appellant did not refer to any circumstances of the appeal case either that would justify the admittance of auxiliary requests 6 - 8 in appeal proceedings.
- 3.3 Consequently, the Board does not admit these requests in the appeal proceedings (Article 12(6) RPBA).
4. The appellant withdrew their request for oral proceedings with letter dated 14 January 2025, which is not within one month of notification of the communication issued by the Board in preparation for the scheduled oral proceedings. A partial reimbursement of the appeal fee is hence not possible since Rule 103(4)(c) EPC is not applicable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairwoman:



M. Schalow

A. Jimenez

Decision electronically authenticated