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**Datasheet for the decision
of 12 February 2020**

Case Number: T 2305/14 - 3.4.03

Application Number: 07113031.4

Publication Number: 1850151

IPC: G01V1/38

Language of the proceedings: EN

Title of invention:

Control system for positioning of marine seismic streamers

Patent Proprietors:

WesternGeco Seismic Holdings Limited
Services Pétroliers Schlumberger

Opponent:

ION Geophysical Corporation

Headword:

Relevant legal provisions:

EPC Art. 101(3) (b)
EPC 1973 Art. 76(1), 83, 100(b), 100(c), 113(1)
EPC 1973 R. 71(2)
RPBA 2020 Art. 15(3), 15(6)

Keyword:

Amendments - extension beyond the content of the parent application as filed (yes)

Sufficiency of disclosure - invention to be performed over whole range claimed - (no)

Decisions cited:

Catchword:



Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 2305/14 - 3.4.03

D E C I S I O N
of Technical Board of Appeal 3.4.03
of 12 February 2020

Appellant: WesternGeco Seismic Holdings Limited
(Patent Proprietor 1) Citco Building,
P.O. Box 662
Road Town,
Tortola (VG)

Appellant: Services Pétroliers Schlumberger
(Patent Proprietor 2) 42, rue Saint Dominique
75007 Paris (FR)

Representative: Boulton Wade Tennant LLP
Salisbury Square House
8 Salisbury Square
London EC4Y 8AP (GB)

Appellant: ION Geophysical Corporation
(Opponent) 2105 CityWest Boulevard, Suite 400
Houston, TX 77042-2839 (US)

Representative: McWilliams, David John
Withers & Rogers LLP
4 More London Riverside
London SE1 2AU (GB)

Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
15 October 2014 concerning maintenance of the
European Patent No. 1850151 in amended form.**

Composition of the Board:

Chairman G. Eliasson
Members: T. M. Häusser
 W. Van der Eijk

Summary of Facts and Submissions

- I. The appeals of the patent proprietor and the opponent concern the interlocutory decision of the opposition division maintaining the European patent EP-B-1850151 as amended during the opposition proceedings (Article 101(3) (a) EPC).
- II. The opposition had been filed against the patent as a whole. Grounds of opposition were insufficiency of the disclosure, extension beyond the content of the application as filed and the parent application as filed, lack of novelty and inventive step (Articles 100(a), (b), and (c), 54(1) and (2), and 56 EPC 1973).
- III. At the oral proceedings before the board the *appellant/o* (opponent) requested that the decision under appeal be set aside and that the European patent be revoked.

The *appellants/p* (patent proprietors) had requested in writing that the decision under appeal be set aside and the patent be maintained according to the main request, filed with the grounds of appeal, or according to the first auxiliary request underlying the appealed decision and resubmitted with the grounds of appeal, or according to one of auxiliary requests 2-7, filed with the reply to the grounds of appeal of the *appellant/o* on 10 September 2015.

- IV. The wording of independent claim 1 of the various requests is as follows (board's labelling "(c)₁", "(a)₂", "(a)₄", and "(a)₅"): :

Main request:

"1. A method of controlling streamer positioning devices using a control system distributed between a global control system located on or near a seismic survey vessel and a local control system located on each streamer positioning device, comprising:

(a) towing an array of streamers each having a plurality of streamer positioning devices there along, each of the streamer positioning devices having a wing used to control the lateral position of the streamer positioning device;

(b) transmitting from the global control system location information to at least one local control system on at least one of the streamer positioning devices; and

(c) adjusting the angle of the wing with a wing motor using the local control system."

First auxiliary request:

Claim 1 of the first auxiliary request differs from claim 1 of the main request in that feature (c) is replaced by the following feature (highlighting of the changes here and below by the board):

(c)₁ "adjusting the angle of the wing with a wing motor using the local control system, wherein the adjusting comprises calculating with a localized conversion program of the at least one local control system, a desired force on the at least one streamer positioning device using the location information, the desired force selected from a desired horizontal force, a desired vertical force, and both."

Second auxiliary request:

Claim 1 of the second auxiliary request differs from claim 1 of the main request in that feature (a) is replaced by the following feature:

(a)₂ "towing an array of streamers with the seismic survey vessel, each streamer having a plurality of streamer positioning devices there along, each of the streamer positioning devices having a wing used to control the lateral position of the streamer positioning device;"

Third auxiliary request:

Claim 1 of the third auxiliary request differs from claim 1 of the main request in that features (a) and (c) are replaced by features (a)₂ and (c)₁, respectively.

Fourth auxiliary request:

Claim 1 of the fourth auxiliary request differs from claim 1 of the main request in that feature (a) is replaced by the following feature:

(a)₄ "towing an array of streamers with the seismic survey vessel, each streamer having a plurality of streamer positioning devices there along, each of the streamer positioning devices having a wing used to control the vertical and lateral position of the streamer positioning device;"

Fifth auxiliary request:

Claim 1 of the fifth auxiliary request differs from claim 1 of the main request in that feature (c) is

replaced by feature (c)₁ and feature (a) is replaced by the following feature:

(a)₅ "towing an array of streamers with the seismic survey vessel each having a plurality of streamer positioning devices there along, each of the streamer positioning devices having a wing used to control the vertical and lateral position of the streamer positioning device;"

Sixth auxiliary request:

Claim 1 of the sixth auxiliary request differs from claim 1 of the main request in that feature (a) is replaced by feature (a)₄ and the preamble is amended as follows:

"1. A method of controlling streamer positioning devices using a control system distributed between a global control system located on or near a seismic survey vessel and a local control system located on each streamer positioning device, the control system utilising a distributed processing control architecture and behaviour-predictive model-based control logic, the method comprising:

Seventh auxiliary request:

Claim 1 of the seventh auxiliary request differs from claim 1 of the main request in that the preamble is amended as for claim 1 of the sixth auxiliary request and in that features (a) and (c) are replaced by features (a)₅ and (c)₁, respectively.

V. The parties argued essentially as follows in relation to amendments and sufficiency of the disclosure:

The *appellant/o* argued that the claimed subject-matter extended beyond the parent application as filed, in particular in relation to the feature concerning a wing used to control the lateral position of the streamer positioning device. Furthermore, the claimed invention was not sufficiently disclosed, since the patent contained no teaching for controlling the positioning device using only a single wing.

The *appellants/p* were of the opinion that the claimed subject-matter did not extend beyond the parent application as filed and that the claimed invention was sufficiently disclosed.

Reasons for the Decision

1. Procedural matters

With letter dated 10 July 2019 the appellants/p stated that they would not be attending the oral proceedings scheduled before the board, which thus took place in the appellants/p's absence in accordance with Rule 71(2) EPC 1973.

According to Article 15(3) and (6) RPBA 2020, the board is not "obliged to delay any step in the proceedings, including its decision, by reason only of the absence at the oral proceedings of a party duly summoned who may then be treated as relying only on its written case" and has to "ensure that each case is ready for decision at the conclusion of the oral proceedings, unless there are special reasons to the contrary".

The appellants/p had argued and explained in writing why they considered the claimed subject-matter not to extend beyond the parent application as filed and the claimed invention to be sufficiently disclosed. By not attending the oral proceedings before the board the appellants/p gave up the opportunity to present their case orally in these respects and could thus be treated as relying only on their written submissions.

The board's decision, which hinges on the issues of extension beyond the parent application as filed and sufficiency of the disclosure (see below), is therefore in conformity with the requirements of Article 113(1) EPC 1973 that the decisions of the EPO may only be based on grounds or evidence on which the parties concerned have had an opportunity to present their comments.

Accordingly, the case was ready for decision at the conclusion of the oral proceedings in accordance with Article 15(6) RPBA 2020.

2. Main request and first to third auxiliary requests - amendments
 - 2.1 In the decision under appeal the opposition division held that the subject-matter of the feature relating to each streamer positioning device having a wing used to control its lateral position did not extend beyond the content of the parent application (see point 3.4.1 of the Reasons).
 - 2.2 The appellant/o argued that the above feature extended beyond the parent application since vertical and horizontal control had always been disclosed together in the parent application.

2.3 It is established jurisprudence that an amendment based on the extraction of an isolated feature from a set of features originally disclosed only in combination is normally not allowable. Such an intermediate generalization might only be justified in the absence of any functional or structural relationship among the features of the specific combination (see *Case Law of the Boards of Appeal of the EPO*, 9th edition, section II.E.1.9)

2.4 In the present case respective claim 1 of the main request and the first to third auxiliary requests contains the feature relating to "each of the streamer positioning devices having a wing used to control the lateral position of the streamer positioning device" (see features (a) and (a)₂, respectively), which constitutes an amendment in relation to original claim 1 of the parent application.

It has to be examined whether this amendment is directly and unambiguously derivable from the parent application as filed.

2.5 The board notes first that - as pointed out by the appellant/o - the parent application only contains a detailed description of one type of streamer positioning devices ("birds"), namely a bird 18 having two independently movable wings 28 connected to rotatable shafts 32 that are rotated by wing motors 34 and that allow the orientation of the wings 28 with respect to the bird body 30 to be changed (see Figures 2 and 3 and page 9, third paragraph - page 10, third paragraph of the parent application).

The lateral and vertical position of the bird 18 is controlled by adjusting the splay angle (i. e. the difference between the angles of the wings 28) and the common angle of the wings 28, which yield the desired roll movement of the bird and motion perpendicular to its wings, respectively (see page 18, paragraph 2 of the parent application).

The control of the lateral and vertical position being thus intimately linked for this device, it is not possible to control exclusively its lateral position.

- 2.6 The appellants/p were of the opinion that a variety of types of bird were mentioned in the parent application and that there was no need to limit the claim to a single type of bird described in detail. Moreover, it was stated in the parent application that it was merely preferable that the birds were both vertically and horizontally steerable.

The passages in the parent application cited by the appellants/p read as follows (page 6, lines 2-3; page 9, paragraph 2):

"Preferably the birds 18 are both vertically and horizontally steerable."

"Figure 2 shows a type of bird 18 that is capable of controlling the position of seismic streamers 12 in both the vertical and horizontal directions. A bird 18 of this type is also disclosed in our PCT International Application No. WO 98/28636. While a number of alternative designs for the vertical and horizontal steerable birds 18 are possible, including those utilizing one full-moving wing with ailerons, three full-moving wings, and four full-

moving wings, the independent two-wing principal is, conceptually, the simplest and most robust design."

All three alternative bird designs mentioned in the second passage above (one full-moving wing with ailerons, three full-moving wings, and four full-moving wings) are referred to as those for "vertical and horizontal steerable birds". Moreover, in the absence of further details concerning the functioning of these designs there is no disclosure that one of the designs allows the exclusive control of the lateral position of the bird, either.

Furthermore, merely stating that it was *preferable* that the birds were both vertically and horizontally steerable does not constitute any technical teaching of a bird that is steerable in only one of these directions.

Finally, none of the alternative bird designs merely has a single wing as claimed. Rather, they either have more wings or a single wing supplemented by ailerons.

2.7 In view of the above, the amendment mentioned under point 2.4 amounts to an intermediate generalization which is not directly and unambiguously derivable from the parent application as filed.

Consequently, respective claim 1 of the main request and the first to third auxiliary requests contains subject-matter extending beyond the content of the parent application as filed (Articles 76(1) and 100(c) EPC 1973).

3. Fourth to seventh auxiliary requests - sufficiency of the disclosure
 - 3.1 In the decision under appeal the opposition division held that the invention was sufficiently disclosed in the patent (see point 3.2 of the Reasons).
 - 3.2 It is established jurisprudence of the Boards of Appeal to consider the disclosure of an invention to be only sufficient if it allows the invention to be performed in the *whole range claimed* (see *Case Law of the Boards of Appeal of the EPO*, 9th edition 2019, sections II.C. 5.4).
 - 3.3 In the present case, respective claim 1 of the fourth to seventh auxiliary requests relates to a method of controlling streamer positioning devices using a control system distributed between a global control system and a local control system located on each streamer positioning device. In particular, it is specified in these claims that each of the streamer positioning devices has a wing which is used to control its vertical and lateral position (features (a)₄ and (a)₅, respectively) and that the local control system is used to adjust the angle of the wing (features (c) and (c)₁, respectively).

It is therefore claimed in each respective claim that each streamer positioning device has a *single* wing which is used to control the vertical and lateral position of the streamer positioning device. This is common ground between the parties.

It has to be considered whether the patent as a whole provides sufficient information for the skilled person to carry out - using common general knowledge - such a

method of controlling streamer positioning devices, where each streamer positioning device has a *single* wing which is used to control its vertical and lateral position.

- 3.4 Corresponding to the disclosure in the parent application mentioned under point 2.5 above, the patent specification only contains a detailed description of one type of streamer positioning devices having *two* independently movable wings (see Figures 2 and 3 and paragraphs [0024] to [0027]). Moreover, the passage of the parent application mentioned under point 2.6 above concerning alternative bird designs is also contained in the contested patent (see paragraph [0023]). These alternative bird designs exhibit either more wings than the preferred two-wing design, namely three or four wings, or "one full-moving wing" albeit with "ailerons". As the skilled person knows, the latter are secondary wings or fins, which usually form part of the trailing edge of the primary wing and are used for controlling the roll angle of the device.

Hence, neither the bird design described in detail nor the disclosed alternative designs exhibit only a single wing. In particular, the alternative "one full-moving wing" design comprises said ailerons which are essential in providing control of the roll angle of the bird and thus, together with the full-moving wing, of its vertical and lateral motion.

Accordingly, the patent specification does not contain any explicit instructions to the skilled person on working the invention with birds having only a single wing which is used to control its vertical and lateral position.

3.5 The appellants/p argued that the skilled person would be aware of rudders used for controlling the lateral position of a marine vessel and have no difficulty in carrying out the invention across the full breadth of the claims.

However, the use of birds attached to streamer cables for providing - like rudders - lateral position control of the cables is neither described nor hinted at in the patent specification. Furthermore, there is no evidence on file showing that this is part of the common general knowledge of the skilled person, either. Rather, it appears from the description of the prior art in the patent specification (see paragraphs [0004] and [0005] cited in part below) that birds were primarily known for providing depth control in order to keep the streamers at a constant depth and that the *additional* control of the lateral position provided further benefits (e. g. reducing the chance of tangling adjacent streamers):

"The streamers are typically towed at a constant depth of approximately ten meters, in order to facilitate the removal of undesired 'ghost' reflections from the surface of the water. To keep the streamers at this constant depth, control devices known as 'birds', are typically attached at various points along each streamer between the deflector and the tail buoy [...] While the majority of birds used thus far have only controlled the depth of the streamers, additional benefits can be obtained by using properly controlled horizontal steerable birds [...] The benefits that can be obtained by using properly controlled horizontal steerable birds can include reducing horizontal out-of-position conditions that

necessitate reacquiring seismic data in a particular area (i. e. in-fill shooting), reducing the chance of tangling adjacent streamers, and reducing the time required to turn the seismic acquisition vessel when ending one pass and beginning another pass during a 3D seismic survey."

Moreover, even though it might be imagined that the wing of a bird, when used like a rudder, could in principle provide lateral position control of the streamer cable it is obscure how the same wing could also provide vertical position control of the streamer cable. It is in line with the disclosure in the patent specification and with the general understanding of the skilled person that there is only one control parameter for controlling the wing of a bird, namely its angle of orientation. Hence, it is not evident for the skilled person how the control of this single parameter could provide position control in two different directions, namely both lateral and vertical position control.

3.6 In view of the above, the board concludes that the patent does not disclose the invention as claimed according to any one of the fourth to seventh auxiliary requests in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art in the whole range claimed (Articles 83 and 100(b) EPC 1973).

4. Conclusion

Since the European patent contains subject-matter extending beyond the content of the parent application as filed (main request and first to third auxiliary requests) and does not disclose the invention in a manner sufficiently clear and complete for it to be

carried out by a person skilled in the art (fourth to seventh auxiliary requests), the patent has to be revoked (Article 101(3) (b) EPC and Article 111(1) EPC 1973).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:



S. Sánchez Chiquero

G. Eliasson

Decision electronically authenticated