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**Datasheet for the decision
of 14 December 2012**

Case Number: T 1206/12 - 3.5.06

Application Number: 06751882.9

Publication Number: 1889214

IPC: G06N 5/00

Language of the proceedings: EN

Title of invention:

Optimization of decisions regarding multiple assets in the presence of various underlying uncertainties

Applicant:

LANDMARK GRAPHICS CORPORATION

Headword:

Optimization of decisions/LANDMARK GRAPHICS

Relevant legal provisions:

RPBA Art. 11

Relevant legal provisions (EPC 1973):

EPC Art. 113 (1)
EPC R. 67, 68 (2)

Keyword:

"Decision sufficiently reasoned - no"
"Substantial procedural violation - yes"
"Remittal for further prosecution"

Decisions cited:

T 0278/00, T 0763/04

Catchword:

The mere reference to jurisprudence of the boards of appeal does not, by itself, constitute or replace an argument in a first instance decision. If a deciding body, in a decision, wants to rely on an argument put forward in a decision of the boards it is insufficient merely to refer to it or to recite it. The deciding body must also make clear that it adopts the argument and explain why, in what respect and to what extent this argument applies to the case at hand.



Case Number: T 1206/12 - 3.5.06

D E C I S I O N
of the Technical Board of Appeal 3.5.06
of 14 December 2012

Appellant: LANDMARK GRAPHICS CORPORATION
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 30 December 2011
refusing European patent application
No. 06751882.9 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman: D. H. Rees
Members: M. Müller
W. Sekretaruk

Summary of Facts and Submissions

- I. The appeal lies against the decision of the examining division, with written reasons dated 30 December 2011, to refuse European application no. 06751882.9 for lack of an inventive step only in view of common knowledge and without reference to any specific document.
- II. Notice of appeal was filed on 7 March 2012, the appeal fee being paid on the same day. A statement of grounds of appeal was filed on 9 May 2012. The appellant requested that the decision be reversed and a patent be granted, based on claims 1-28 as re-filed with the grounds of appeal in combination with, as the board understands the request, the description and the drawings as originally filed. Failing this, the appellant requested that oral proceedings be held.
- III. In response to the board's communication that it intended to remit the case to the first instance for further prosecution, the appellant withdrew its request for oral proceedings.
- IV. Pending claim 1 reads as follows.
- "A method for determining how many wells to drill in a plurality of oil and gas field assets, comprising:
- (a) receiving, on a first computer, information specifying decision variables and uncertainty variables for the plurality of oil and gas field assets and specifying for each oil and gas field asset a corresponding set of one or more algorithms, wherein the set of one or more

algorithms for at least one of the oil and gas field assets includes an algorithm to estimate oil and gas production over time, and wherein the decision variables represent the possible outcomes for the number of wells to be drilled in the given oil and gas field asset;

- (b) generating, by the first computer, a decision vector, wherein the decision vector includes a value for each of the decision variables;
- (c) executing, by the first computer, an evaluation process on the decision vector to determine at least a value of a global objective for the decision vector, wherein said executing the evaluation process includes:
 - (c1) generating an uncertainty vector, wherein the uncertainty vector includes a value for each of the uncertainty variables;
 - (c2) generating for each oil and gas field asset a data set for the corresponding set of algorithms using a corresponding subset of one or more values in the decision vector and a corresponding subset of one or more values in the uncertainty vector;
 - (c3) invoking execution of the set of algorithms on one or more second computers for each oil and gas field asset on the corresponding data set to obtain output arguments corresponding to the oil and gas field asset;
 - (c4) computing for each oil and gas field asset one or more values of one or more respective

- quantities form the output arguments corresponding to the oil and gas field asset;
- (c5) performing operations including (c1) through (c4) a number of times, thereby generating a population of values of each quantity for each oil and gas field asset;
- (c6) computing one or more statistics for each oil and gas field asset based on corresponding ones of the population; and
- (c7) combining a first subset of the statistics to determine the global objective value corresponding to the decision vector;
- (d) executing, by the first computer, an optimizer, wherein said executing the optimizer includes performing (b) and (c) repeatedly, thereby generating a plurality of decision vectors and corresponding global objective values, and, wherein the optimizer uses the plurality of decision vectors and the corresponding global objective values to generate and repeatedly update a reference set of decision vectors in order to optimize the global objective;
- (e) storing, by the first computer, data including the plurality of decision vectors and their corresponding global objective values in a memory."

Reasons for the Decision

1. Article 113 (1) EPC 1973 provides that decisions of the European Patent Office may only be based on grounds or

evidence on which the parties concerned have had an opportunity to present their comments. Rule 68 (2) EPC 1973 further provides that decisions of the European Patent Office which are open to appeal must be reasoned.

1.1 According to established jurisprudence of the boards of appeal (see e.g. T 763/04, not published; reasons 4.3), Article 113 (1) EPC 1973 is contravened where facts and arguments, which from the appellant's submissions are clearly central to his case and which may speak against the decision taken, are completely disregarded in the decision in question.

1.2 Further, established jurisprudence of the boards of appeal explains Rule 68 (2) EPC 1973 as requiring that a decision must contain, in logical sequence, those arguments which justify the tenor. The grounds upon which a decision is based and all decisive considerations in respect of the factual and legal aspects of the case must be discussed in detail in the decision (see e.g. T 278/00, OJ 2003, 546; reasons 2) so as to enable the parties and, in case of an appeal, the board of appeal to examine whether the decision was justified or not.

1.3 In the board's judgment the decision under appeal violates both fundamental requirements for the following reasons.

2. Claim 1 defines a method "for determining how many wells to drill in a plurality of oil and gas field assets" which is defined by a number of algorithmic, mostly mathematical steps operating on variables relating to these assets, in particular on decision variables which represent the desired number of how many

wells to drill (see step a). Moreover, as part of the method, algorithms making asset-specific predictions are executed, too (see steps a and c3).

- 2.1 That a major part of the claimed method is a mathematical one was uncontroversial between the examining division and the applicant. It was however controversial whether the mathematical steps according to claim 1 must or need not be taken into account when assessing inventive step.

- 2.2 The applicant filed the claims subject to the appealed decision in response to the examining division's objection (see communication dated 23 June 2009) that the claims essentially constituted the implementation of a mathematical method as such on a computer. In the accompanying letter, the applicant argued that and why it considered that the method according to the amended claims was not a mathematical method as such, had technical character and provided the technical solution to a technical problem (see submission of 29 December 2009, points II.1-3). In its response to the summons to oral proceedings, the applicant further detailed its position that the claimed invention "employ[ed] technical means" and was "limited to a particular technical application" (see submission of 11 November 2011, point III.1). It further invoked T 1227/05 to justify its opinion that the claimed method cannot be denied a technical effect even though it does not incorporate the physical end product (in this case, the actual drilling of wells) since it "serve[s] a technical purpose" and is also "functionally limited to that technical purpose" (*ibid.*, point III.2). A similar argument was based on T 49/99 (*ibid.*, point III.3). Therefore,

so the applicant's argument, all method steps, the mathematical ones included, had to be taken into account when assessing inventive step (*loc. cit.*).

- 2.3 Apparently, this issue was the main contentious point when the examining division took its decision.
- 2.4 In its decision, the examining division provides a rather terse summary of claim 1 (see point 10) and then states that "all ... features defining the algorithm" except those relating to a "computer processing data" neither have technical character nor "confer technical considerations" on the claim (points 11-12).
- 2.5 The examining division does not, however, provide reasons for this allegation. In particular, no reasons are provided as to why neither the claimed fact that "the assets are wells to drill" (decision, point 10) nor the purpose of the claim 1 according to its preamble, namely to "determin[e] how many wells to drill" confer technical character on the claimed method.
3. Points 13-15 of the decision cite T 258/03, T 641/00 and T 1173/97 as established jurisprudence and suggest that the examining division means to follow the principles laid out in these decisions. This could not have surprised the applicant given that the applicant itself referred to pertinent jurisprudence of the boards of appeal and to a Practice and Procedure Notice of the EPO (PPN 04/08; see applicant's submission of 11 November 2011, point II.1 and 2).
- 3.1 However, the mere reference to jurisprudence of the boards of appeal does not, by itself, constitute or re-

place an argument in a first instance decision. If a deciding body, in a decision, wants to rely on an argument put forward in a decision of the boards, be it part of its *ratio decidendi* or an *obiter dictum*, it is insufficient merely to refer to it or to recite it. The deciding body must also make clear, by explicit statement or by unambiguous implication, that it adopts the argument and explain why, in what respect and to what extent this argument applies to the case at hand.

3.2 The decision under appeal however does not explain how the cited decisions apply to the case at hand. Specifically, it does not explain why the examining division considers, as it appears to, that the fact that "assets are wells to drill" and the aim to "calculate the number of wells to drill" do not contribute to the technical character of the claim and thus cannot, according to T 641/00 (OJ 2003, 352; catchword 1), contribute to inventive step. The decision also does not formulate the technical problem in accordance with T 641/00 (catchword 2) which, if any, the claimed invention is considered to solve, nor argues why it does not consider that the preamble of claim 1 ("how many wells to drill in a plurality of oil and gas field assets") constitutes this technical problem as the applicant proposed (see submission of 29 December 2009, point II.3, esp. 2nd and 3rd dash, and submission of 11 November 2011, point III.1).

4. With reference to T 1227/05 the examining division only argues (decision, point 16) that "the specific purpose of the procedural steps of claim 1 is not reflected in the aim of the claim, namely to calculate the number of wells to drill". This sentence is the only one in the

decision under appeal which responds directly to the applicant's argument based on T 1227/05.

- 4.1 In the board's view, the precise meaning of this statement is unclear as it stands, but it suggests at least that the "steps of claim 1" are, in the opinion of the examining division, somehow detached from the "purpose of the claim". This allegation however appears at least not to be completely accurate, for instance insofar as step a specifies the method to operate on "decision variables represent[ing] the possible outcomes for the number of wells to be drilled".
- 4.2 Even assuming, *arguendo*, that the "purpose of the ... steps of claim 1" is indeed not "reflected in the aim of the claim", it remains unclear from the decision why this is an objectionable deficiency and, in particular, what bearing this deficiency has on the overall finding of lack of inventive step. As it stands, the statement in point 16 might also be read as a clarity objection.
5. In point 17 of the decision under appeal, the examining division argues that "point 7 of T 1029/06 (Toshiba) very well reflects the line of reasoning for the current application", and cites it: "the majority of the steps are typical tools of operational research that normally have not been considered technical in the established jurisprudence, in particular if only information is processed for the purpose of management decisions".
 - 5.1 The board's view, point 17 is ambiguous as to whether the examining meant the reference to T 1029/06 to be a constitutive part of its "line of reasoning" or a mere

illustration of it. In the former case, it would appear arguable that, in conflict with Article 113 (1) EPC 1973, the applicant had hardly any opportunity to present its comments on this part of the grounds for the refusal, since that the examining division had introduced T 1029/06 during a telephone conversation a mere two weeks before the oral proceedings and, according to the minutes of this conversation, explained its pertinence with the same terse words as used in point 17 of the decision.

5.2 Moreover, the appealed decision does not explain in what sense the cited passage of T 1029/06 has any bearing on the inventive step of claim 1 (see point 3.1 above). First, it would seem from the applicant's arguments that it would probably oppose the view that the steps of claim 1 are "typical tools of operational research" or are meant to process information only "for the purpose of management decisions", and this position would appear to be at least *prima facie* plausible and therefore cannot be silently dismissed by the examining division. Second, the cited passage of T 1029/06 refers only to "the majority of steps" which leaves open the possibility that the remaining steps may be technical and sufficient to establish an inventive step.

6. The board further notes that the applicant had argued in favour of inventive step that the claimed invention would "provide a massive amount of parallelism for the overall calculation" "by dispatching the execution of the set of algorithms from the first computer to one or more second computers" (see submission of 29 December 2009, p. 5, last par.), but that neither the summons to

oral proceedings nor the decision under appeal addressed this argument.

Summary

7. In the board's judgment, the reasons given in the decision under appeal do not conform with Rule 68 (2) EPC 1973 because they are insufficient for the applicant to understand why the examining division considered the claimed method to lack an inventive step. Moreover, the reasons do not conform with Article 113 (1) because they are insufficient for the applicant to understand why the examining division dismissed the applicant's argument provided in the submissions dated 11 November 2011 and 29 December 2009.

8. The violation of a party's right to be heard and insufficiency of reasoning are both substantial procedural violations which require the decision under appeal to be set aside and the case to be remitted to the first instance without the board assessing the substantive merits of the case, see Article 11 RPBA. The appeal is thus to be allowed and the Board considers it equitable by reason of the substantial procedural violations to reimburse the appeal fee (Rule 67 EPC 1973).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance for further prosecution.
3. The appeal fee is reimbursed.

The Registrar:

The Chairman:

B. Atienza Vivancos

D. H. Rees