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

Datasheet for the decision of 20 February 2018

Case Number: T 2001/11 - 3.5.01
Application Number: 04716359.7
Publication Number: 1600870
IPC: G06F17/60, G05B23/02
Language of the proceedings: EN

Title of invention:
MAINTENANCE INFORMATION PROVIDING SYSTEM

Applicant:
DAIKIN INDUSTRIES, LTD.

Headword:
Maintenance information / DAIKIN

Relevant legal provisions:
EPC Art. 84

Keyword:
Claims - clarity (no)

Decisions cited:
T 0115/85, T 0833/91, T 0528/07
Case Number: T 2001/11 - 3.5.01

DE C I S I O N
of Technical Board of Appeal 3.5.01
of 20 February 2018

Appellant: DAIKIN INDUSTRIES, LTD.
(Applicant)
Umeda Center Building,
4-12, Nakazaki-nishi 2-chome,
Kita-ku
Osaka-shi, Osaka 530-8323 (JP)

Representative: Goddar, Heinz J.
Boehmert & Boehmert
Anwaltspartnerschaft mbB
Pettenkoferstrasse 22
80336 München (DE)

Decision under appeal: Decision of the Examining Division of the
European Patent Office posted on 4 April 2011
refusing European patent application No.
04716359.7 pursuant to Article 97(2) EPC.

Composition of the Board:
Chairman  W. Chandler
Members:  P. Scriven
          Y. Podbielski
Summary of Facts and Submissions

I. The Examining Division refused European patent application 04716359 for lack of inventive step (Article 56 EPC), because the invention amounted to an obvious technical implementation of a non-technical method. The applicant appealed that decision.

II. The Board arranged oral proceedings and also sent a communication expressing the provisional view that (inter alia) the question of technicality could not be resolved because claim 1 was unclear.

III. At oral proceedings before the Board, the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the set of claims submitted with letter dated 16 February 2011. Those are the claims on which the appealed decision is based.

IV. Claim 1 according the the sole request reads as follows.

Method for providing maintenance information of an apparatus (3) based on trouble data or predictive trouble data of the apparatus (3), comprising:
- storing storage data based on the trouble data and the predictive trouble data;
- storing data of correspondences between the trouble data outputted when the predictive trouble data was outputted but no maintenance was carried out in the past and that predictive trouble data; and
extracting a trouble portion of the apparatus (3) corresponding to the predictive trouble data, based on the stored data, deciding whether the number of the extracted trouble portions is a predetermined number or more and if not, extracting the trouble data corresponding to the predictive trouble data and extracting a trouble portion of the apparatus (3) corresponding to the trouble data.

V. The appellant's arguments can be summarised as follows.

The usual approach would be to consider the clarity of a claim, and subsequently to look at the practical teaching of the application. It was more fruitful, however, in the present case, first to look at how the skilled person would view the claim in the light of both the disclosure in the application and the state of the art. The application was addressed to a specialist, who would know the contents of D1 (US-A-5566092) and D2 (US-A-5210704), so that these documents and the application formed the context in which the skilled person would understand the terms of the claim. With this background, it was unnecessary for the claims explicitly to define those features that the skilled person would understand as implicit.

D1, from line 61 of column 1, outlined three common "maintenance strategies", of which "predictive or condition-based maintenance (i.e., maintain machine before it fails)" was most relevant to the present case. D1 (column 3, from line 7) also concerned the same problem as the current invention.

Claim 1 drew a distinction between trouble data and
predictive trouble data. The description defined the relation between these terms (published application, paragraph 7): trouble data indicated some current problem with the apparatus, while predictive trouble data indicated that some problem could be expected to arise in the future. It was not necessary for the claim to define exactly where that difference lay. That would depend on the particular apparatus, whether an air-conditioner or a helicopter or something else. An apparatus would infringe if it drew a distinction between trouble data and predictive trouble data and treated those in the manner of the claim. It was, therefore, clear what would and what would not fall within the scope of the claim, even without a particular definition of how the distinction was drawn.

Claim 1 defined a method comprising four steps. In the first, (predictive) trouble data were stored. In the second, a correspondence was stored between predictive trouble data and subsequent trouble data that arose when no maintenance was carried out. In the third step, there was predictive trouble data and a corresponding trouble portion (a part of the apparatus) was determined. A particular predictive error code might, for example, tend to indicate that an electric valve would soon malfunction. In the final step, if the number of extracted trouble portions was small, then the trouble data corresponding to the predictive trouble data was found and a trouble portion found from that trouble data.
Reasons for the Decision

Introduction

1. The invention concerns maintenance. As claimed, it is quite general and any sort of apparatus can be involved.

2. Machines, of course, break down. When they do, they can be thrown out or they can be repaired. To repair a machine, the maintenance engineer needs to know which parts of the machine are at fault. The idea of the invention is to help the maintenance engineer find such parts.

3. It is not necessary to wait until a machine breaks down. Maintenance can be carried out to prevent that happening. Again, the maintenance engineer needs to know which parts of the machine need attention, and the invention should help.

4. The invention foresees an apparatus that produces error data and predictive error data. The former indicate that there is some problem now; the latter that some problem is likely in the future. The invention keeps records of what happens with different items of error data and of predictive error data and uses those records to provide the maintenance engineer with an indication of which parts of the apparatus are likely to need attention.
The impugned decision

5. The Examining Division considered the invention defined by claim 1 to be an obvious technical implementation of a non-technical method.

6. The Board takes the view that the technicality of the underlying method can validly be called into question. It might amount to cognitive steps in the mind of the maintenance engineer.

7. However, the issue is not straightforward, because the claimed method should provide an indication of the internal state of a machine, which might well provide a technical effect on which an inventive step could be founded (see T 115/85, OJ EPO 1988, 87; T 833/91, not published in the OJ EPO; T 528/07, not published in the OJ EPO).

8. Whether the underlying method provides a technical effect depends on the interpretation of the claim. In the present case, the Board considers that it is impossible to determine whether or not there is a technical effect, because claim 1 is unclear (see below).

9. A decision on technicality is not always impossible when a claim is unclear, but the particular form of the present claim makes it so.

Article 84 EPC, claim 1

10. Claims must be clear in themselves when read by the person skilled in the art, without any reference to the content of the description (see cases cited in the
section II.A.3.1 of *Case Law of the Boards of Appeal of the European Patent Office, 8th Edition, 2016*). The correct context for a claim, therefore, is the claim itself, read as a whole. Therefore, while the Board agrees that the terms of the claims are to be interpreted in their context and with a view to making technical sense, it does not agree that D1 or D2 form part of the context or that a definition given in the description can be implied into a claim.

11. According to claim 1, some data based on trouble data and predictive trouble data are stored, as are correspondences between predictive trouble data and trouble data. A trouble portion is identified on the basis of some predictive trouble data, and if the number of trouble portions is lower than some threshold, a (possibly different) trouble portion is identified on the basis of trouble data that correspond to the predictive trouble data.

12. Claim 1 suffers from evident linguistic problems. The clause "storing data of correspondences between the trouble data outputted when the predictive trouble data was outputted but no maintenance was carried out in the past and that predictive trouble data", for example, is particularly impenetrable. Even putting those to one side, a number of issues arise. One is that the Board is not persuaded that the terms trouble data, predictive trouble data, and trouble portion have clear meanings. But even if the Board were to accept the interpretation advanced by the appellant, claim 1 fails to comply with Article 84 EPC, as is shown below.

13. Claim 1 seeks to define a method for providing maintenance information based on trouble data or predictive trouble data. It is apparent, however, from
the remainder of the claim, that it is based on both
(for example: ... extracting a trouble portion ...
corresponding to the predictive trouble data ...; ...
extracting the trouble data corresponding to the
predictive trouble data ...).

14. In the term number of trouble portions, there is an
apparent contradiction between extracting a trouble portion, which suggests that exactly one such portion
is extracted, and deciding whether the number of
extracted trouble portions is a predetermined number or
less, which makes sense only if the number of extracted
portions is variable.

15. The invention is intended to inform the maintenance
engineer of which machine parts might require
attention. The claim mentions two trouble portions. One
is extracted from the predictive trouble data, the
other from the trouble data that corresponds to the
predictive trouble data. One problem is that this
assumes such a correspondence always exists. In fact,
it need not, because only correspondences that have
arisen in the past will be stored. A further problem is
that the claim does not say what happens when the
number of extracted troubled portions is not small: the
claim does not fully define the invention. Some
essential feature is missing.

16. Further, the description does not support the idea of
comparing the number of trouble portions to some
predetermined value at all.

17. Figure 3 (parts A and B), described in paragraphs 0059
- 0085 of the published application, shows the only
detailed embodiment of the invention. In it, there are
three comparisons, at steps S5, S9 and S13.

18. At S5 (see paragraphs 0065 and 0066), "pieces of data" are extracted on the basis of "predictive trouble codes", and at S6 (paragraph 0067) it is determined whether there are enough "pieces of data". At issue seems to be whether enough data have been stored about the "predictive trouble code". If there have, then the output is a trouble portion based only on the "predictive trouble code" and an indication of the system's confidence in having identified the relevant part (paragraph 0068). If, on the other hand, enough data have not been collected there is a different output (steps S8 - S15). None of this involves counting the number of trouble portions.

19. At S9 (paragraph 0070), the number of "trouble codes" that correspond to the "predictive trouble code" is considered and one of three paths taken. Again, there is no counting of trouble portions.

20. At S13 (paragraph 0080), it is once again the amount of data that is under consideration. There is no counting of trouble portions.

21. The Board, therefore, concludes that claim 1 is unclear, fails to define the essential features of the invention, and lacks support in the description. As a result, the appellant's sole request cannot be allowed (Article 84 EPC).
Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

T. Buschek W. Chandler

Decision electronically authenticated