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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

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Case Number: **T 2001/11 - 3.5.01**

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

Appellant: DAIKIN INDUSTRIES, LTD.
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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
        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