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Datasheet for the decision
of 2 March 2007

Case Number: T 0306/04 - 3.5.01

Application Number: 99954776.3

Publication Number: 1125233

IPC: G06F 17/60

Language of the proceedings: EN

Title of invention:
Automated finite capacity scheduler

Applicant:
HONEYWELL INC.

Opponent:
-

Headword:
Scheduling tasks/HONEYWELL

Relevant legal provisions:
EPC Art. 52(2)(c) and (3)

Keyword:
-

Decisions cited:
T 0154/04, T 0388/04, T 0049/99

Catchword:
The mere possibility of serving a technical purpose or of
solving a technical problem is not sufficient to avoid
exclusion under Article 52(2) and (3) EPC.

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Case Number: T 0306/04 **-** 3.5.01

D E C I S I O N
of the Technical Board of Appeal 3.5.01
of 2 March 2007

Appellant: HONEYWELL INC.
                                Honeywell Plaza
                                Minneapolis
                                Minnesota 55408   (US)

Representative: Haley, Stephen
                                Gill Jennings & Every LLP
                                Broadgate House
                                7 Eldon Street
                                London EC2M 7LH   (GB)

Decision under appeal: **Decision of the Examining Division of the**
                                European Patent Office posted 20 August 2003
                                refusing European application No. 99954776.3
                                pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: S. Steinbrener
Members: R. R. K. Zimmermann
                 G. Weiss

Summary of Facts and Submissions

I.   European patent application No. 99 954 776.3 (published
        as WO-A-00/28451) claimed a priority of 6 November 1998
        from a US-application for an automated finite capacity
        scheduler.

II.   The examining division refused the application for lack
        of novelty and inventive step, respectively, on the
        basis of the following prior art:

        D1:   Robert P. Goldman et al.: "A Constraint-Based
              Scheduler for Batch Manufacturing", IEEE EXPERT,
              NEW YORK, Vol. 12, No. 1, 1997, pages 49-56, and

        D6:   Mark Boddy et al.: "Hybrid Reasoning for Complex
              Systems", AAAI Fall Symposium on Model-Directed
              Autonomous Systems, 8-10 November 1997.

        The decision in writing was posted on 20 August 2003.

III.   The appellant (applicant) lodged an appeal against the
        decision, filing the notice of appeal on 17 October
        2003 and paying the appeal fee the same day. The
        statement setting out the grounds of appeal was filed
        on 22 December 2003.

IV.   In response to summons to attend oral proceedings, the
        appellant filed two sets of amended claims (main and
        auxiliary requests) by letter dated 22 November 2006.

Claim 1 of the main request reads as follows:

"1. A method of scheduling tasks in an industrial process the method comprising the steps of: defining requirements of the tasks;

creating (410) a list of activities required to accomplish the tasks;

modifying (410) selected activities into sets of smaller activities; wherein:

an activity may include one or more subactivities, and the step of modifying activities into sets of smaller activities includes: identifying activities including two or more subactivities at or above a threshold size; and

breaking subactivities of identified activities into two or more sets;

creating a list of resources which are used, required, of [sic!] modified by the activities;

for each resource, creating a list of points of interest where a point of interest is a point where an activity uses, requires, or modifies a state of a resource;

defining discrete and continuous constraints based on the requirements of the tasks;

defining discrete and continuous constraints at each point of interest;

scheduling (430) the activities and smaller activities based on the discrete and continuous constraints;

wherein scheduling the activities includes the
setting of discrete and continuous parameters
associated with the activities; and

wherein the time-varying states of the resources
are related to the parameters associated with the
activities by discrete and continuous mathematical
relationships."

The auxiliary request differs from the main request
only in the first paragraph of claim 1, which was
amended to read as follows:

"1. A method of scheduling tasks in an industrial
refinery, the method comprising the steps of:".

V.   At oral proceedings held on 2 March 2007, the matter
was discussed with the appellant's representative. The
Board announced the decision on the appeal at the end
of the oral proceedings.

VI.   According to the appellant's requests submitted to the
Board, the decision under appeal should be set aside
and a patent be granted on the basis of the sets of
amended claims in accordance with the main request or
the auxiliary request, both requests as filed with the
letter dated 22 November 2006.

VII. The arguments advanced by the appellant in respect to
the patentability of the claimed invention may be
summarised as follows:

The invention was not excluded from patentability under Article 52(2) and (3) EPC; scheduling tasks in an industrial process and, as claimed according to the auxiliary request, in an industrial refinery was a technical and thus patentable activity. The term "industrial" had been used because it was actually equivalent to the term employed in the patentability requirements of the EPC in Article 52(1). Article 52 defined what was meant by the term "industrial"; hence, the method of the present invention clearly met the requirements of the EPC in respect of Article 52. To make this even clearer, the auxiliary request defined the invention as a method of scheduling tasks in an industrial refinery, rendering scheduling clearly a technical part of an industrial process. The traders and sales functions shown in figure 2 were planning functions separated from the technical scheduling functions, as disclosed on page 8, lines 21 to 31 of the description.

Reasons for the Decision

1. The appeal, although admissible, is not allowable since the claimed methods are not inventions within the meaning of Article 52(1) to (3) EPC.

2. Article 52(2) and (3) EPC defines the matters to be regarded as non-inventions, excluding from patentability in particular mathematical methods (paragraph 2(a)) and schemes, rules, and methods for doing business (paragraph 2(c)) to the extent to which the application relates to these matters as such.

Following the case law of the boards of appeal (see,
for example, decision T 154/04-Estimating sales
activity/DUNS LICENSING ASSOCIATES, to be published in
OJ EPO, Reasons No. 6 ff.), these provisions are
construed to exclude from patentability only to the
extent that the subject matter of the claims lacks any
technical character.

3.   The subject of the present method claims is the
        scheduling of tasks in an industrial process, i.e. the
        placing of tasks in a timetable, schedule or any other
        type of list for allocating resources to activities
        over time.

4.   In industry, and more generally in a business
        environment, scheduling is a typical activity in a
        preparatory phase for planning operations and
        allocating resources and is normally considered a field
        of operations research. In general, it should thus be
        subsumed under the excluded category of schemes, rules
        and methods of doing business.

        When such methods involve features which confer
        technical character on them they may nevertheless form
        a valid subject of a European patent. Technicality may
        result, in the present context, from the implementation
        of planning and scheduling procedures on a computerised
        system or, for example, from the purposive use of such
        a procedure to control a technical process.

5.   An automated scheduler is indeed described in the
        application as an embodiment and arguably claimed in
        separate system claims. The method claims, however, do
        not refer to any such automated systems at all. As

claimed, not reciting any technical means, they may
actually be performed as a purely intellectual activity.
The mere possibility of using technical means,
disclosed as an embodiment, is, however, not sufficient
to avoid exclusion from patentability (see for example
decision T 388/04-Undeliverable mail/PITNEY BOWES, OJ
EPO 2007, 16).

The reference in claim 1 (main request) to an
"industrial process" does not change the character of
the method. From the considerable breadth of meaning of
"industry", it follows that "industrial process"
encompasses pure business processes and services in
finance, administration, management, etc. The claimed
method can thus not be construed to be limited to any,
let alone specific, technical process.

6.   The reference to an "industrial refinery" (auxiliary
request) brings the claimed method closer to such a
technical application. However, the expression
"industrial refinery" can still not be construed to
define, or imply any specific technical process to be
controlled or scheduled.

It is evident that such a process cannot be inferred
from the definition "in an industrial refinery".
Neither is the refinery example described in the
application (see page 8 ff. and figure 2 ff.) a basis
for any such construction of the method claim: As
indicated by reference numerals 214 and 224, refinery
planning and scheduling involves traders and sales
functions for allocating the resources (see page 8,
lines 21 to 31). Hence, the scope of scheduled tasks
may include purely business-related operations, but

possibly also technical functions, like the control of
the fluid transport system of the storage tanks (see
figure 3).

However, such technical functions are not the express
subject of the method claim. The mere possibility of
serving a technical purpose or of solving a technical
problem is not sufficient to avoid exclusion under
Article 52(2) and (3) EPC (in analogy to the Pitney
Bowes case T 388/04, see above).

7.   Actually, the individual method steps defined in both
        claims 1 do not refer to scheduling of any concrete
        task at all, but define a rather abstract programme how
        to model a constraint-based scheduling problem
        including discrete and continuous constraints on the
        basis of abstract mathematical relationships. They do
        neither refer to any concrete technical problem nor
        does their execution require any technical
        considerations.

        The Board already decided that abstract concepts and
        methods of information modelling do not have technical
        character (see decision T 49/99-Information
        Modelling/INTERNATIONAL COMPUTERS, not published in OJ
        EPO). This also applies to information modelling in the
        field of operations research, and in particular to
        process and data modelling for scheduling and planning
        purposes.

8.   Regarding the lack of any technical aspect or feature
       in claim 1 according to both requests, it follows that
       the claimed methods are, as a whole, excluded from
       patentability under Article 52(2) and (3) EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

T. Buschek   S. V. Steinbrener