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**Datasheet for the decision
of 2 March 2015**

Case Number:	T 1544/10 - 3.5.06
Application Number:	04075323.8
Publication Number:	1562110
IPC:	G06F9/44
Language of the proceedings:	EN

Title of invention:
A system for storing a pattern occuring in situation representations for context representation in an application and a method of storing a pattern occuring in situation representations for context representation in an application

Applicant:
SAP SE

Headword:
Pattern occuring in situation representations/SAP

Relevant legal provisions:
EPC Art. 83

Keyword:
Sufficiency of disclosure - (no)

Decisions cited:

Catchword:

Beschwerdekammern
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Case Number: T 1544/10 - 3.5.06

D E C I S I O N
of Technical Board of Appeal 3.5.06
of 2 March 2015

Appellant: SAP SE
(Applicant)   Dietmar-Hopp-Allee 16
                          69190 Walldorf (DE)

Representative: Müller-Boré & Partner
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Decision under appeal: **Decision of the Examining Division of the**
                          European Patent Office posted on 18 February
                          2010 refusing European patent application No.
                          04075323.8 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairwoman   M.-B. Tardo-Dino
Members: A. Teale
                   S. Krischer

Summary of Facts and Submissions

I.   This is an appeal against the decision, dispatched on
        18 February 2010, to refuse European patent application
        No. 04 075 323.8 *inter alia* on the basis that the
        claimed method according to the then main and first to
        third auxiliary requests was, particularly in view of
        the expressions "situation representation" and "context
        representation", not disclosed in a manner sufficiently
        clear and complete for the skilled person to put it
        into practice, Article 83 EPC.

II.   With a notice of appeal, received on 27 April 2010, the
        appellant submitted amended description pages and
        claims according to a main and first to third auxiliary
        requests. The appeal fee was paid on the same day. The
        appellant requested that the decision under appeal be
        set aside and that the case be remitted to the first
        instance with an order to grant a patent. The appellant
        also made an auxiliary request for oral proceedings.

III.   In a statement of grounds of appeal, received on
        17 June 2010, the appellant reiterated the requests
        made in the notice of appeal.

IV.   In an annex to a summons to oral proceedings the board
        expressed its provisional opinion that the application
        seemed not to comply *inter alia* with Article 83 EPC
        1973 regarding sufficiency of disclosure.

V.   With a submission received on 19 January 2015 the
        appellant submitted amended description pages relating
        to the main and first to third auxiliary requests.

VI.   At the oral proceedings, held on 2 March 2015, the
        appellant submitted amended claims according to a
        fourth auxiliary request. The appellant requested that
        the decision under appeal be set aside and the case be
        remitted to the department of first instance with the
        order to grant a patent on the basis of the claim sets
        of the main request or of one of the first to third
        auxiliary requests, all filed with the notice of
        appeal, or of the fourth auxiliary request filed during
        the oral proceedings. The remaining application
        documents for the main and first to third auxiliary
        requests are as follows:

        Description:
        Main request: pages 6 and 14 filed on 19 January 2015;
        pages 1, 1a, 2 and 3 filed with the notice of appeal
        and pages 4, 5 and 7 to 13 as originally filed.

        First auxiliary request: page 6 filed on 19 January
        2015; page 14 filed on 19 January 2015 for the main
        request; pages 1, 1a, 2 and 3 filed with the notice of
        appeal and pages 4, 5 and 7 to 13 as originally filed.

        Second auxiliary request: page 6 filed on 19 January
        2015 for the first auxiliary request; page 14 filed on
        19 January 2015 for the main request; pages 1, 1a, 2
        and 3 filed with the notice of appeal and pages 4, 5
        and 7 to 13 as originally filed.

        Third auxiliary request: page 6 filed on 19 January
        2015 for the first auxiliary request; page 14 filed on
        19 January 2015 for the main request; pages 1, 1a, 2 to
        4 and 10 filed with the notice of appeal and
        pages 5, 7 to 9 and 11 to 13 as originally filed.

Drawings:
Figures 1 to 3 filed on 19 April 2004, for all
requests.

At the end of the oral proceedings the board announced
its decision.

VII.   Claim 1 according to the main request reads as follows:

"A system for storing a pattern occurring in situation
representations for a context representation in an
application (20), a situation being an action or a
process in an application, a situation representation
representing a current or previous situation and being
stored in terms of entities (61) involved or associated
with each particular process and/or action, a context
representation being a collection of facts and entities
related to a situation, the system (10) comprising a
first storage medium (18) for storing a plurality of
situations (64) in which a user of the application (20)
is or has been involved as a respective plurality of
situation representations (64', 64") having at least
one property (4) determined by the respective situation
(64), a pattern identifier (15) for identifying a
pattern including a common property (4) shared by at
least two of the plurality of situation representations
(64', 64") in the plurality of stored situation
representations (64', 64"), and a second storage medium
(19) for storing a representation (5) of the pattern,
wherein the first storage medium (18) is arranged to
remove the at least two of the plurality of situation
representations (64', 64") from the first storage
medium (18) in response to the identification of the
pattern."

The claims according to the main request also comprise a corresponding method claim 16, a claim 31 to a user terminal and a claim 32 to a program storage device, claims 31 and 32 both referring to the method of any of claims 16 to 30.

VIII.   Claim 1 according to the first auxiliary request differs from that according to the main request in that the following passage has been added at the end:

", wherein the plurality of situation representations (64', 64") is stored as a respective plurality of frames describing at least one entity (61) and action involved in the respective situation (64) and their relationship to each other".

IX.   Claim 1 according to the second auxiliary request differs from that according to the first auxiliary request in that the following passage has been added at the end:

", the system being associated with a context modeller (16) for determining which entities (61) are to form the context representation on the basis, amongst others, of an output of the system".

X.   Claim 1 according to the third auxiliary request differs from that according to the second auxiliary request in that the following passage has been added at the end:

", and the system being associated with an application (20) that includes a database (22), a recorded user behaviour storage medium (28) for storing user behaviour, a high level ontology storage medium (30)

for storing a high level ontology, and other
repositories (32) for storing other data, wherein
the database (22), the recorded user behaviour storage
medium (28), the high level ontology storage medium
(30) and the other repositories (32) exchange data with
the system via communication links (27, 29, 31, 33),
respectively, in order to provide data concerning
entities (61) for the situation representations".

XI.   The claims according to the first to third auxiliary
      requests also comprise a corresponding method claim 15,
      a claim 29 to a user terminal and a claim 30 to a
      program storage device, claims 29 and 30 both referring
      to the method of any of claims 15 to 28.

XII. Claim 1 according to the fourth auxiliary request reads
      as follows, the features added with respect to claim 1
      of the first auxiliary request (which has also been
      rearranged somewhat), being indicated in **bold**:

      "A system for storing a pattern occurring in situation
      representations for a context representation in an
      application (20), a situation being an action or a
      process in an application, a situation representation
      representing a current or previous situation and being
      stored in terms of entities (61) involved or associated
      with each particular process and/or action, a context
      representation being a collection of facts and entities
      related to a situation, the system (10) comprising a
      first storage medium (18) for storing a plurality of
      situations (64) in which a user of the application (20)
      is or has been involved as a respective plurality of
      situation representations (64', 64") having at least
      one property (4) determined by the respective situation
      (64), **wherein the first storage medium (18) is a short
      term memory and** the plurality of situation

representations (64', 64") is stored as a respective
plurality of frames describing at least one entity (61)
and action involved in the respective situation (64)
and their relationship to each other; a pattern
identifier (15) for identifying a pattern including a
common property (4) shared by at least two of the
plurality of situation representations (64', 64") in
the plurality of stored situation representations (64',
64"), and a second storage medium (19) for storing a
representation (5) of the pattern, **wherein the second
storage medium (19) is a long term memory and the
pattern is stored as a frame representation; wherein
the frame storing the pattern is an abstraction of the
plurality of frames corresponding to the at least two
of the plurality of situation representations (64',
64") sharing a common property (4);** wherein the first
storage medium (18) is arranged to remove the at least
two of the plurality of situation representations (64',
64") from the first storage medium (18) in response to
the identification of the pattern, **and wherein the
pattern identifier (15) is arranged to identify the
pattern if a number of situation representations (64',
64") with at least one common property (4) exceeds a
first threshold value and/or if a number of common
properties (4) shared by the at least two situation
representations (64', 64") exceeds a second threshold
value."**

The claims according to the fourth auxiliary request
also comprise a corresponding method claim 5, a claim 9
to a user terminal and a claim 10 to a program storage
device, claims 9 and 10 both referring to the method of
any of claims 5 to 8.

Reasons for the Decision

1.   The admissibility of the appeal

        In view of the facts set out at points I to III above,
        the appeal complies with the admissibility requirements
        under the EPC and is therefore admissible.

2.   The admittance of the fourth auxiliary request into the
        proceedings

2.1   This request was submitted during the oral proceedings
        after the discussion of whether the application
        according to the main and first to third auxiliary
        requests complied with Article 83 EPC 1973 regarding
        sufficiency of disclosure. Thus the new request was an
        amendment to the appellant's case.

2.2   According to Article 13(1) RPBA, any amendment to a
        party's case after it has filed its grounds of appeal
        or reply may be admitted and considered at the board's
        discretion. The discretion shall be exercised in view
        of *inter alia* the complexity of the new subject-matter
        submitted, the current state of the proceedings and the
        need for procedural economy. Under Article 13(3) RPBA
        amendments sought to be made after oral proceedings
        have been arranged shall not be admitted if they raise
        issues which the board cannot reasonably be expected to
        deal with without adjournment of the oral proceedings.

2.3   As the appellant explained, the claims of the fourth
        auxiliary request are based on those of the first
        auxiliary request, claims 1 to 7 having been combined
        and claims 9 to 11 deleted. In the present case, the
        board is satisfied that the amendments made to the
        claims in the fourth auxiliary request are aimed at

overcoming the objections under Article 83 EPC 1973
raised by the board in the annex to the summons to oral
proceedings and discussed in the oral proceedings
themselves. The manageable complexity of the subject-
matter and the limited extent of the amendments were
such that the board was able to assess their effect
without adjournment of the oral proceedings.

2.4   Hence the board admitted the fourth auxiliary request
        into the proceedings.

3.   A summary of the invention

3.1   The application relates to storing a pattern occurring
        in situation representations for context
        representations in an application. Applications, for
        example business applications, are known which adapt
        the information displayed, and the actions and objects
        which the user can select, according to the context,
        the context being implicitly given by the various
        screens of the application's user interface.

3.2   According to the description (see page 5, lines 10 to
        26), a context representation typically includes at
        least one business entity. The term "entity" is used
        extensively in the application. Page 5, lines 18 to 23,
        provides the following explanation of its meaning: "For
        a user the context may include entities 61 including
        his role, projects, personal preferences etc. For a
        session the context may include entities 61 including a
        user, last actions, manipulated business entities 61
        etc. For a certain business object of the business
        application, the context may include entities 61
        including past projects, orders for a customer etc."

3.3   The context of an entity or a situation as defined by
       the process or action is a collection of facts and
       entities which are of special importance for that
       entity or situation and which usually have a direct or
       indirect relationship to the entity or situation. For a
       user the context may include entities including his
       role, projects, personal preferences etc. For a session
       the context may include entities including a user, last
       actions and manipulated business entities. For a
       certain business object of the business application,
       the context may include entities 61 including past
       projects and orders for a customer. A context may be
       represented by a number of instances of business
       entities, processes/actions, or situations.

3.4   The problem arises that context sensitivity must be
       hard coded for each application screen, since very
       limited context information is kept when a user changes
       screen. The context information is consequently poor
       and unavailable for generic algorithms. According to
       the application, this problem is solved by improving
       the context representation in the application whilst
       keeping the data to be handled to a minimum. Although
       this is not set out in the claims, enhancing context
       sensitivity may have the advantage that user
       preferences can be identified and a preselection of
       probable values for input fields can be made; see page
       2, lines 23 to 30.

3.5   The board notes that in figure 2 the situation
       representations (64', 64") and the pattern
       representation (5) are shown as data structures having
       a finite number of properties, depicted as either
       filled or empty squares. The appellant has referred to
       these squares as "slots". In the following discussion

the slots are represented by a "1" if filled and by a
"0" if empty.

4.   Sufficiency of disclosure, Article 83 EPC 1973, main
        request

4.1   According to Article 83 EPC 1973, the application must
        disclose the invention in a manner sufficiently clear
        and complete for it to be carried out by a person
        skilled in the art.

4.2   As illustrated in figures 1 and 2, the invention as set
        out in the claims of the main request enhances context
        sensitivity by *inter alia* the steps of storing, in a
        first storage medium (18), a plurality of situation
        representations (64', 64") in which the user is or has
        been involved, identifying a pattern including a common
        property (4) shared by at least two of the situation
        representations and storing, in a second storage medium
        (19), a representation of the pattern (5) and removing
        the at least two stored situation representations from
        the first storage medium (18) in response to the
        identification of the pattern.

4.3   Figure 2 contains the most detailed disclosure in the
        application of the derivation of a pattern
        representation (5) from two situation representations
        (64', 64"), if they have the common property (4).

4.4   According to the reasons for the decision, the claimed
        method was insufficiently disclosed because the passage
        on page 5, lines 2 to 4, which stated that "The
        situation representation 64', 64" is created by the
        system 10 on the basis of data from the application 20
        and depending on the circumstances the current context
        representation which may be stored in the context

modeller 16." was ambiguous as to which circumstances
were meant. The technical and functional meaning of the
terms "situation representation" and "context
representation" and their interrelationship remained
obscure. The description also gave no example of how a
situation was used to improve the context
representation of an application, which put an undue
burden on the skilled person.

4.5   The appellant argued in the grounds of appeal that a
        "mind willing to understand" could carry out the
        invention, the terms "context" and "situation" being
        terms of art. Moreover the description explained the
        terms used in the claims "situation", "situation
        representation" and "context". As stated in its
        provisional opinion in the annex to the summons to oral
        proceedings, the board finds that, in the context of
        the application, a skilled person would know what is
        meant by "situation" and "context".

4.6   In its preliminary opinion, the board stated that the
        application did not sufficiently disclose how the
        invention achieved the technical effect of reducing the
        amount of data, thus avoiding having to store large
        amounts of data; see page 7, lines 5 to 16. The
        application did not explain how the pattern
        representation (5) was computed from the situation
        representations (64', 64") and what it should contain.
        Although this might have been an error made when
        producing the clean copy of figure 2 from that
        originally filed, it appeared from the currently valid
        (clean copy) version of figure 2 that the pattern
        representation (5) did not even contain the common
        property (4). The board also questioned what happened
        with the disjoint properties of the situation
        representations. It seemed reasonable to assume that

situation representations 64' and 64" were not equal, otherwise the pattern identification would be a mere equality test. Assuming that the pattern representation (5) contained the common property (4), as it did in figure 2 as originally filed, the question arose of what happened with the other disjoint properties of the situation representations, which begged the question of why one disjoint property was included in the pattern representation 5 while the other was deleted and thus lost. It appeared that the invention reduced the amount of data on situation representations to be stored simply by deleting it, the conditions under which it was tolerable to lose some information and the conditions under which it was not were however not disclosed.

4.7   In the submission received on 19 January 2015 the appellant argued that the common property (4) between the situation representations 64' and 64" was the fact that they both had two "1"s, albeit separated by differing numbers of "0"s. The appellant also argued that the skilled person would know how to identify a pattern including a common property, as well as patterns as such. It was also a commonplace work procedure to store various kinds of information in the form of data. Hence the skilled person would have no difficulty in finding and creating a suitable representation for the identified pattern to be stored in a storage medium, for instance a frame, i.e. a data structure for representing situations.

4.8   At the oral proceedings the appellant argued that the invention was aimed at reducing the amount of memory required to implement a situation-based representation of application context. One possible way of representing situations and storing patterns was to use

frames. Two storage media were used: a short-term,
first storage medium, in which situation
representations (64', 64") were stored, and a long-
term, second storage medium, in which pattern
representations (5) were stored. A pattern identifier
recognised a pattern either based on a single situation
(see page 6, lines 16 to 17) or based on several
situation representations sharing a common property (4)
enough times to exceed a predetermined threshold. Hence
a pattern related to only certain properties of the
situation representations which had been identified as
important. The unimportant properties of the situation
representations were ignored so that the user was not
overloaded with variables not relevant to context. In
this way the system could recognize repeated user
actions. The stored pattern representation could be
seen as an abstraction of the various situation
representations containing it. However abstraction
could go further to process situations with ostensibly
no common property: page 12, lines 17 to 22, gave the
example of abstracting the statements "A has a dog" and
"B has a cat" to identify the common property "A and B
each have a pet". Once a pattern had been recognised,
all situation representations exhibiting it were
deleted from the first storage medium, thus making the
data processing involved more efficient. In one
embodiment a further reduction in stored data could be
achieved by only storing situation representations in
the first memory that had never occurred before; see
page 7, lines 22 to 26.

4.9   The board notes that the situation representations
        (64', 64") and the pattern representation (5) according
        to figure 2 as originally filed were as follows, the
        third slot in the situation representations being
        designated the common property (4):

```
Situation representation 64':    001001000    (9 slots)
Situation representation 64":    00101000     (8 slots)
Pattern representation 5:        001001000    (9 slots)
```

In contrast, the clean copy of figure 2 received on
19 April 2004 gives 8-slot values for all three
quantities, the last slot of situation representation
64' and the first slot of pattern representation 5
having been removed, as follows:

```
Situation representation 64':    00100100     (8 slots)
Situation representation 64":    00101000     (8 slots)
Pattern representation 5:        01001000     (8 slots)
```

The appellant has conceded that errors were made when
producing the clean copy of figure 2 from that
originally filed. To resolve the discrepancies, the
board has interpreted the presently valid version of
figure 2 in the light of original figure 2 concerning
the situation representation 64' and the pattern
representation 5. Even on this interpretation of the
application, the board finds that the derivation of the
pattern representation (5) from the situation
representations (64', 64") is not sufficiently
disclosed, and that the skilled person would have to
use inventive skill to implement it. In the board's
understanding, figure 2 discloses a common property
(4), namely the third slot being a "1", as being
present in both situation representations. The third
slot of the pattern representation (5) is also shown as
a "1" and is understood by the board to reflect the
common property. Beyond this disclosure, the skilled
person has to use inventive skill to fill in the gaps
in the disclosure of the invention, the gaps not being
matters of common general knowledge, contrary to the

assertion by the appellant. In figure 2, only the
property in the sixth slot of situation representation
64' (a "1") is transferred into pattern representation
5. The property in the fifth slot of situation
representation 64" (also a "1") is not reflected in
pattern representation 5, and the skilled person is
provided with no guidance as to why one disjoint
property is included in the pattern representation 5
and the other is not. The board does not accept the
appellant's explanation that the pattern representation
reflects the spacing between the "1"s in the situation
representations, there being no original disclosure to
support this assertion. Consequently the application
does not sufficiently disclose how the amount of memory
required to implement a situation-based representation
of application context is reduced.

4.10   The board concludes that the application does not
        disclose the invention according to the main request in
        a manner sufficiently clear and complete for it to be
        carried out by the person skilled in the art, contrary
        to Article 83 EPC 1973.

5.   The first and fourth auxiliary requests

5.1   The claims according to the first and fourth auxiliary
        requests have been restricted, compared to those of the
        main request, by further specifying *inter alia* that the
        situation representations are stored as frames, each
        describing at least one entity and action involved in
        the situation and their mutual relationship.
        Additionally, the claims of the fourth auxiliary
        request specify that the first and second storage media
        are short and long term memory, respectively, and set
        out that the frame storing the pattern is an
        abstraction of the plurality of frames corresponding to

the at least two of the plurality of situation representations sharing a common property.

5.2   Regarding the claims of the fourth auxiliary request, the board gave its provisional opinion in the oral proceedings that the amendments were insufficient to overcome the objection under Article 83 EPC 1973 raised against the previous requests. The appellant argued that the skilled person using common general knowledge could carry out the invention as claimed.

5.3   The board takes the view that, despite the amendments made to the claims in the first and fourth auxiliary requests, the skilled person would have to exercise inventive skill to carry out the invention, the gaps in the disclosure not being matters of common general knowledge. As stated for the main request, the application does not disclose how the pattern representation is derived from the at least two situation representations including a common property and, in particular, does not disclose criteria for the skilled person to know which properties of situation representations are unimportant and can be ignored.

5.4   Also in the case of the fourth auxiliary request, the claims set out the pattern identifier being arranged to identify the pattern if a number of situation representations with at least one common property exceeds a first threshold and/or if a number of common properties shared by the at least two situation representations exceeds a second threshold value. The application however contains no disclosure as to how the thresholds are to be chosen, again requiring the skilled person to use inventive skill to fill in the gaps when carrying out the invention.

5.5   For example, the application does not disclose why in
        original figure 2, the sixth slot of situation
        representation 64' is transferred to pattern
        representation 5 whereas the fifth slot of situation
        representation 64" is not transferred to it, although
        these two properties both appear exactly once in each
        situation representation. Hence this example cannot be
        explained by the second threshold (nor by the first
        threshold), figure 2 providing the *only* example of
        pattern identification in the whole application.

5.6   The board concludes that the application does not
        disclose the invention according to the first and
        fourth auxiliary requests in a manner sufficiently
        clear and complete for it to be carried out by the
        person skilled in the art, contrary to Article 83 EPC
        1973.

6.   The second auxiliary request

6.1   Compared to the claims of the first auxiliary request,
        the claims of this request have been further restricted
        to those embodiments in which a context modeller (see
        figures 1 and 2; 16) determines which entities are to
        form the context representation on the basis, amongst
        others, of an output of the system.

6.2   The amendments, relating to the context modeller, do
        not restrict the invention in a way which avoids the
        objections raised against the application according to
        the main request, that the application does not
        disclose how the pattern representation is derived from
        the at least two situation representations including a
        common property and, in particular, does not disclose
        criteria for the skilled person to know which

properties of the situation representations are unimportant and can be ignored.

6.3   The board concludes that the application does not disclose the invention according to the second auxiliary request in a manner sufficiently clear and complete for it to be carried out by the person skilled in the art, contrary to Article 83 EPC 1973.

7.   The third auxiliary request

7.1   Compared to the claims of the second auxiliary request, the claims of this request have been further restricted to those embodiments in which the application (see figure 1; 20) includes a database, a recorded user behaviour storage medium and a high level ontology (i.e. a structural framework for organising information) storage medium, these elements exchanging data with the system via communication links in order to provide data concerning entities for the situation representations.

7.2   The amendments, relating to the provision of data concerning entities, do not restrict the invention so as to avoid the objections raised against the application according to the main request, that the application does not disclose how the pattern representation is derived from the at least two situation representations including a common property and, in particular, does not disclose criteria for the skilled person to know which properties of the situation representations are unimportant and can be ignored.

7.3   The board concludes that the application does not disclose the invention according to the third auxiliary

request in a manner sufficiently clear and complete for it to be carried out by the person skilled in the art, contrary to Article 83 EPC 1973.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairwoman:

B. Atienza Vivancos   M.-B. Tardo-Dino

Decision electronically authenticated