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**Datasheet for the decision  
of 21 June 2017**

**Case Number:** T 0969/12 - 3.5.06

**Application Number:** 00908421.1

**Publication Number:** 1208461

**IPC:** G06F9/46

**Language of the proceedings:** EN

**Title of invention:**

ENTITLEMENT MANAGEMENT AND ACCESS CONTROL SYSTEM

**Applicant:**

Oracle International Corporation

**Headword:**

Access control/ORACLE

**Relevant legal provisions:**

EPC 1973 Art. 84, 56

RPBA Art. 12(4)

EPC R. 137(3)

**Keyword:**

Inventive step - (no)

**Decisions cited:**

T 1742/12

**Catchword:**

The document starting from which the board judges that an absence of inventive step can be demonstrated most convincingly will be the natural choice for the designation "closest prior art document".



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Case Number: T 0969/12 - 3.5.06

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.06**  
**of 21 June 2017**

**Appellant:** Oracle International Corporation  
(Applicant) 500 Oracle Parkway  
Redwood Shores, CA 94065 (US)

**Representative:** Gill Jennings & Every LLP  
The Broadgate Tower  
20 Primrose Street  
London EC2A 2ES (GB)

**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted on 12 December  
2011 refusing European patent application No.  
00908421.1 pursuant to Article 97(2) EPC.

**Composition of the Board:**

**Chairman** W. Sekretaruk  
**Members:** G. Zucka  
M. Müller

## Summary of Facts and Submissions

I. The appeal is against the decision by the examining division, dispatched with reasons on 12 December 2011, to refuse European patent application 00908421.1, on the basis that the subject-matter of the independent claims 1, 14 and 18 of the main request was not inventive, Article 56 EPC 1973, in view of the following documents:

D2 = D.V. Miller; R.W. Baldwin: "Access control by Boolean expression evaluation", 4 December 1989, IEEE, XP010017866

D3 = J. Frisch: "Bit Vectors Vitalize Data Retrieval", Data Processing Magazine, North American Publ. Co., Philadelphia, PA, US, vol. 13, no. 8, 1 August 1971, pages 37-41, ISSN: 0011-6874, XP009019466

II. A notice of appeal was received on 12 January 2012, the appeal fee having been paid on 10 January 2012. A statement of the grounds of appeal was received on 19 April 2012.

III. The appellant requested that the decision under appeal be set aside but was ambiguous as to the claim set on which basis he requested that a patent be granted as a main request.

Indeed, on the one hand, the appellant requested (see first paragraph in section 1 of the grounds of appeal) that "the patent [be] granted in accordance with the claims considered by the Examining Division", *i.e.* claims 1-18 as received on 8 April 2009. On the other hand (see section 2.4 of the grounds of appeal), the

appellant indicated that the clarity of claim 1 could be improved if the two-part form were not adopted. He therefore included with the grounds of appeal an alternative set of claims 1-18 entitled "Main Request", where claim 1 is not in the two-part form.

The status of this claim version is not readily apparent. However, in view of the appellant's statement, in view of the fact that the last paragraph on page 4 of the grounds of appeal clearly refers to the alternative "Main Request" version, and in view of the fact that claim 1 in auxiliary requests 1-3 is also not in the two-part form, the board considers that it implicitly follows from the grounds of appeal that the appellant requests, as a "real" main request, the grant of a patent on the basis of this alternative claim version.

The board will therefore designate said request as "preferred main request", this being the highest ranking request. The request which was refused by the first instance will be designated as "non-preferred main request". It is the second highest ranking request.

- IV. As next ranking requests, the appellant requested that the decision of the examining division to refuse the application be set aside and a patent be granted on the basis of respectively claims 1 to 17 labelled "First Auxiliary Request", claims 1 to 16 labelled "Second Auxiliary Request", or claims 1 to 11 labelled "Third Auxiliary Request", all filed with the grounds of appeal.

V. The further text on file is at least:

description pages

1, 3-21 as originally filed,  
22 received on 8 January 2008,  
2 received on 19 April 2012,

drawing sheets

1 to 12 as annexed to the International Preliminary  
Examination Report.

VI. The board further assumes that page 2 of the description received on 8 January 2008 was not intended to be replaced but that it should be followed by page 2 referred to under V. above, which therefore should have been labelled page 2a.

VII. The appellant made a conditional request for oral proceedings.

VIII. The board issued a summons to oral proceedings. In an annex to the summons, the board set out its preliminary opinion, following which the appeal should be dismissed.

IX. The appellant did not file amendments or arguments in response to the summons but subsequently withdrew his conditional request for oral proceedings. The board however considered it expedient not to cancel the oral proceedings, which took place as scheduled on 21 June 2017, in the absence of the appellant.

X. Independent claim 1 of the "preferred main request" (see III. above) reads as follows:

"A method for determining accessor entitlement to a resource in response to an accessor request for access to the resource, comprising the steps of:

a) associating with the resource a logical boolean entitlement expression, the entitlement expression including a reference to at least one membership bit map having membership information for the accessors, each member of the bit map corresponding to a respective accessor and being set or not set according to whether the corresponding accessor is a member or not a member respectively of the accessor group represented by the bit map;

b) associating with the accessor a unique identifier (212), the unique identifier acting as an index into each membership bit map;

c) evaluating the entitlement expression for the resource to determine the entitlement of the requesting accessor to the resource, the evaluation including looking up the accessor's membership information in the at least one membership bit map using the accessor's unique identifier (212)."

XI. Independent claim 14 of that same request is a system claim comprising system features corresponding to the method features of claim 1. Independent claim 18 relates to a "computer program product" operable to carry out the method of claim 1.

XII. The "non-preferred main request" distinguishes itself from the "preferred main request" essentially in that claim 1 is cast in the two-part form.

XIII. Claim 1 of auxiliary request 1 distinguishes itself from claim 1 of the "preferred main request" by the addition in step (b) of the feature that "the bit at

that position indicates whether the accessor is a member of the group corresponding to the bit map".

XIV. Claim 1 of auxiliary request 2 distinguishes itself from claim 1 of auxiliary request 1 in that the bit maps are stored in "paged data structures" (end of step (a)).

XV. Claim 1 of auxiliary request 3 reads as follows:

"A method for determining accessor entitlement to a resource in response to an accessor request for access to the resource, comprising the steps of:

a) associating with the resource a logical boolean entitlement expression, the entitlement expression including a reference to at least one membership bit map having membership information for the accessors, each membership bitmap corresponding to one of one or more groups, each group having a name, zero or more accessors that are members of the group, and the membership map for determining whether a particular accessor is a member of the group, each member of the bit map corresponding to a respective accessor and being set or not set according to whether the corresponding accessor is a member or not a member respectively of the accessor group represented by the bit map, wherein the bit maps are stored in paged data structures, the entitlement expression referencing the or each membership bit map by including the or each group name of the group or groups corresponding to the or each membership bit map, wherein each group name is associated with a membership bit map identifier that represents the location of the membership bit map for the group, and wherein the group names and the membership bit map identifier associated with the group names are stored in an accessor group store (114);



b) associating with the accessor a unique identifier (212), the unique identifier acting as an index into each membership bit map, wherein each accessor has a unique name (210) and wherein each accessor's name and unique identifier (212) are stored in an accessor store (112), wherein the unique identifier (212) is a number and wherein the bit at that position in each membership bit map indicates whether the accessor is a member of the group corresponding to that bit map;

c) evaluating the entitlement expression for the resource to determine the entitlement of the requesting accessor to the resource, the evaluation including looking up the accessor's membership information in the at least one membership bit map using the accessor's unique identifier (212)."

XVI. At the end of the oral proceedings, the chairman announced the board's decision.

## **Reasons for the Decision**

### 1. *Admissibility of the appeal*

The appeal is admissible.

### 2. *Preferred main request*

#### 2.1 *Inventive step; Article 56 EPC 1973*

2.1.1 According to the appellant (section 2.3, first sentence in the grounds of appeal), it is questionable whether D2 should be considered the closest prior art document. The board however notes that a preliminary discussion

about what constitutes "the" closest prior art in some objective sense would serve no useful purpose. If anyone (in this case the board) judges that absence of an inventive step is demonstrated most convincingly when starting from a particular document, then that is inevitably the document which in the argumentation will be used as a starting point, *i.e.* as the "closest prior art" document; the term is therefore a mere label designating said document. In this respect, the board sees no reason to deviate from its opinion expressed in points 5 to 10 of the earlier decision T 1742/12 with the same board composition.

2.1.2 In the present case, the board considers that D2 represents the closest prior art. The document discloses a method for determining accessor (subject) entitlement to a resource (object) in response to an accessor request for access to the resource, comprising the steps of:

- associating with the resource a logical boolean entitlement expression (Rule in the Object Window visible in figure 5); and
- evaluating the entitlement expression for the resource to determine the entitlement of the requesting accessor to the resource ("Evaluate Rule" in figure 2).

2.1.3 The board therefore identifies the following difference between the claimed subject-matter and the disclosure of D2:

(1) The criteria for entitlement to a resource include the accessor's membership of certain pre-defined accessor groups; and

(2) The membership information is stored in at least one bit map, each member of the bit map corresponding

to a respective accessor and being set when the corresponding accessor is a member of the accessor group represented by the bit map, a unique identifier being associated with the accessor, the unique identifier acting as an index into each membership bit map, and the accessor's membership information being looked up using the accessor's unique identifier.

- 2.1.4 The board considers that feature (1) is non-technical but corresponds to a policy decision. It is considered a part of the framework of the technical problem that is to be solved by the invention. According to the board, the *technical* problem is how to adapt the method of D2 to the set objective, including how to determine said membership in an efficient manner.
- 2.1.5 The method of D2 stores descriptive attributes of the accessors (subjects) (see page 132, left column, first sentence), which for a skilled person would typically mean that a database file is used, containing one record for each accessor together with its attributes. Such a database would correspond to what is represented visually in the "subject window" in figure 3 of D2.
- 2.1.6 The requirement to be met by the skilled person, *i.e.* to determine entitlement to a resource solely on the basis of the pre-defined groups to which the accessor belongs, is relatively simple compared to all possible applications that are envisaged in D2. He or she would therefore naturally consider whether such a simple requirement allows for an adaptation of the process of D2 that renders it more efficient.

2.1.7 The board considers it to be an elementary and well known technique to use bit vectors (*i.e.* bit maps) as quick reference indices to save on sequential searches; see for instance D3, first paragraph.

He or she would therefore consider using the bit vectors of D3 in the method of D2, where each bit vector would represent the membership of the accessors in a certain group. Each bit in a given bit vector corresponds to a file record by position (see D3, page 37, left column, fourth paragraph) and would indicate whether the accessor for which said record contains the membership information is a member of the given group. Said position fulfills the function of the unique identifier mentioned in the present claim 1 and makes it possible to look up the accessor's membership information (see D3, page 37, left column, last paragraph).

2.1.8 The skilled person would thereby arrive at the subject-matter of claim 1 without demonstrating any inventive activity. Said subject-matter is consequently considered not inventive; Article 56 EPC 1973.

3. *Non-preferred main request*

The scope of claim 1 of the "non-preferred main request" is the same as for the "preferred main request". Its subject-matter is therefore also considered not inventive (Article 56 EPC 1973), for the same reasons as given above.

4. *Auxiliary request 1*

Claim 1 of auxiliary request 1 distinguishes itself from claim 1 of the "preferred main request" by the

addition in step (b) of the feature that "the bit at that position indicates whether the accessor is a member of the group corresponding to the bit map". Since this is already the case in the method at which the skilled person would arrive according to the analysis given above (see 2.1.7), the addition of this feature does not render the claimed subject-matter inventive.

5. *Auxiliary request 2*

5.1 *Clarity; Article 84 EPC 1973*

5.1.1 Claim 1 of auxiliary request 2 distinguishes itself from claim 1 of auxiliary request 1 in that the bit maps are stored in "paged data structures" (end of step (a) in claim 1). According to the board, this term is unclear.

5.1.2 The board understands that "paging" in the conventional sense is a memory management scheme by which a computer stores and retrieves data from secondary storage for use in main memory, thereby giving programs access to more memory than is physically available in main memory. In this scheme, the operating system retrieves data from secondary storage in same-size blocks called "pages". The data itself is in general not divided in pages from the onset, the division in pages happening *ad hoc*, as data is swapped to secondary storage. In the application however (see figure 5 and description page 8, line 29 - page 9, line 10), the division in pages is from the onset an inherent part of the bit map structure.

5.1.3 Since claim 1 does not define the meaning of the "paged data structures" to reflect what is stated in the

description, the claim is considered unclear; Article 84 EPC 1973.

5.2 *Inventive step; Article 56 EPC 1973*

5.2.1 According to the appellant, the paged data structure allows for improved data retrieval times, given that (see description, page 9, lines 6-7), "[it] is more efficient than starting at the first bit and indexing through all the bits until the desired bit is located".

5.2.2 The board however fails to see why a skilled person would implement a system where such an indexing through all the bits is required. The skilled person already knows (see 2.1.7 and 4. above) that it is the bit at a certain position in the bit map which indicates whether the accessor is a member of the group corresponding to the bit map. Therefore only the value of the bit at that position needs to be retrieved.

5.2.3 The subject-matter of claim 1 of auxiliary request 2 is therefore also not considered inventive; Article 56 EPC 1973.

6. *Auxiliary request 3*

6.1 Claim 1 of auxiliary request 3 distinguishes itself from claim 1 of auxiliary request 2 by adding more detail, more specifically:

- each membership bitmap corresponds to one of one or more groups, each group having a name, zero or more accessors that are members of the group, and the membership map for determining whether a particular accessor is a member of the group;

- the entitlement expression references the or each membership bit map by including the or each group name of the group or groups corresponding to the or each membership bit map, wherein each group name is associated with a membership bit map identifier that represents the location of the membership bit map for the group, and wherein the group names and the membership bit map identifier associated with the group names are stored in an accessor group store;

- each accessor has a unique name (210) and each accessor's name and unique identifier (212) are stored in an accessor store (112), wherein the unique identifier (212) is a number.

6.2 The appellant states (see grounds of appeal, point 5, 3rd paragraph, first sentence) that "These more specific arrangements of the implementation of the access control system of the present invention are in no way taught or suggested in the prior art [documents cited in the search report]".

This may well be true. However, the appellant has failed to indicate which unexpected and therefore non-obvious technical effect is produced by the features added to claim 1, let alone why said effect would contribute to the presence of an inventive step. The board from its side has not identified any such effect.

6.3 The board therefore considers that auxiliary request 3 also does not satisfy the requirement of Article 56 EPC 1973.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:



B. Atienza Vivancos

W. Sekretaruk

Decision electronically authenticated