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**Datasheet for the decision
of 16 January 2018**

Case Number: T 0676/14 - 3.5.07

Application Number: 08012171.8

Publication Number: 2141615

IPC: G06F17/30

Language of the proceedings: EN

Title of invention:

Method and system for generating indexes in an XML database management system

Applicant:

Software AG

Headword:

XML-database index generation/SOFTWARE AG

Relevant legal provisions:

EPC Art. 54(1), 54(2)

Keyword:

Novelty - main request (yes)

Remittal to the department of first instance - (yes)

Decisions cited:

J 0003/14



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Case Number: T 0676/14 - 3.5.07

D E C I S I O N
of Technical Board of Appeal 3.5.07
of 16 January 2018

Appellant: Software AG
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 12 November
2013 refusing European patent application No.
08012171.8 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman R. Moufang
Members: R. de Man
M. Jaedicke

Summary of Facts and Submissions

I. The applicant (appellant) appealed against the decision of the Examining Division refusing European patent application No. 08012171.8.

II. The decision was issued as a so-called decision on the state of the file, referring to a communication dated 26 August 2013 for the reasons for the refusal. The Examining Division decided that the subject-matter of independent claims 1, 9 and 10 of the main request was not new and the subject-matter of claims 2 to 8 and 11 to 14 not inventive in view of the following document:

D1: US 2005/114316 A1, published on 26 May 2005.

The subject-matter of claims 1 to 14 of the auxiliary request was not inventive in view of the same document.

III. In the statement of grounds of appeal, the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the main request or, in the alternative, on the basis of the claims of the auxiliary request. It requested oral proceedings in the event that the main request was not allowed. Under the heading "Insufficient reasoning of the examining division", the appellant explained why, in its view, the grounds on which the Examining Division had based its decision were not sufficient for refusing the application.

IV. In a communication issued under Rule 100(2) EPC, the Board informed the appellant of its intention to remit the case to the Examining Division for further prosecution. In response, the appellant agreed to

remittal without oral proceedings before the Board being held first.

V. Independent claim 1 of the main request reads as follows:

"A method for generating an index (10) over a plurality of XML documents (30) in an XML database (40); the method being characterized by the steps of:

- a. for each of the plurality of XML documents (30), executing at least one indexing function (20) defined in the XQuery language, each indexing function (20) accepting the XML document (30) as input and returning at least one computed result; and
- b. storing each of the at least one computed results from the at least one indexing function (20) as a key (11) of the index (10) and a reference to the input XML document (30) as a value (12) of the index (10)."

Claims 2 to 8 of the main request are directly or indirectly dependent on claim 1.

Independent claim 9 of the main request reads as follows:

"A computer program comprising instructions adapted for implementing a method according to any of the preceding claims."

Independent claim 10 of the main request reads as follows:

"An XML database management system (XDBMS) (50) for generating an index (10) over a plurality of XML documents (30) in an XML database (40); the XDBMS (50) being characterized in that it comprises:

- a. at least one library module (60) comprising at least one indexing function (20) defined in the XQuery language; each indexing function (20) accepting an XML document (30) as input and returning at least one computed result;
- b. wherein the XDBMS (50) is adapted for executing the at least one indexing function (20) for each of the plurality of XML documents (30) and for storing each of the at least one computed results from the at least one indexing function (20) as a key (11) of the index (10) and a reference to the input XML document (30) as a value (12) of the index (10)."

Claims 11 to 14 are directly or indirectly dependent on claim 10.

VI. In view of the outcome of the appeal, the text of the auxiliary request need not be reproduced here.

Reasons for the Decision

1. The appeal complies with the provisions referred to in Rule 101 EPC and is therefore admissible.
2. *The invention*
 - 2.1 The invention relates to generating an index over XML documents in an XML database. The background section of

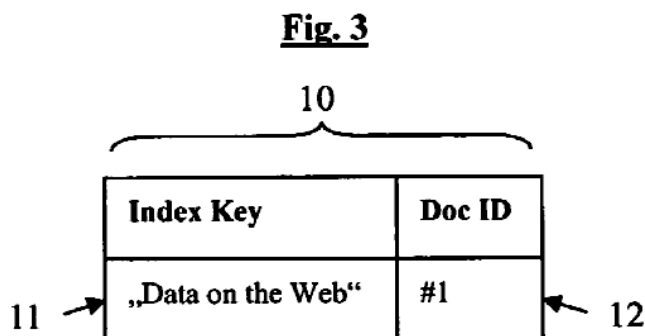
the application explains that the use of indexes is well known for the purpose of allowing efficient data retrieval from large databases. An efficient way of indexing large XML databases that takes full advantage of the XQuery language is, however, said not to exist.

2.2 The invention proposes generating an index over a set of XML documents by means of a two-step process.

In the first step, each document is passed to an "indexing function" defined in the XQuery language. This indexing function returns "at least one computed result". In one embodiment, the computed result consists of the string values of all "title" elements contained in a document (see page 6, lines 1 to 14). In other embodiments the computed result may consist of aggregate information, such as the number of authors (page 9, line 22, to page 10, line 11), or of XML substructures, such as author elements containing elements corresponding to the first and last name of a book author (page 10, line 13, to page 11, line 17).

In the second step, an index is created with the returned computed results as keys and, for each such key, a reference to the XML document to which the computed result corresponds as the value.

An example index thus produced is shown in Figure 3:



This index has a single entry. Consulting this index provides the information that a title element with string value "Data on the Web" is present in XML document #1. In practical cases the indexes will cover a plurality of documents and the independent claims are in fact limited thus.

3. *Novelty over document D1*

3.1 The Examining Division decided that the subject-matter of claim 1 lacked novelty over document D1. It referred to paragraphs [0020] to [0024] and Figures 1, 2a, 2b and 3.

3.2 Document D1 discloses, in paragraphs [0021] and [0022], a method for parsing documents in the context of processing XQuery queries, the method comprising a step of producing an index for an XML document. The index produced "comprises a plurality of elements representing textual categories of the query" and includes instructions for selectively skipping portions of the document irrelevant to the query. Each of the elements corresponds to a position in the document.

3.3 The indexing step of document D1 thus produces an index for a specific document to be used for processing queries on that document, and the produced index links elements "representing textual categories of the query" to positions within that document. This step therefore does not disclose a method of generating an index for a plurality of documents where the index links "computed results" to the documents in which the values occur. It also does not disclose using a function written in the XQuery language for generating the index; the index is generated to facilitate processing of queries written

in the XQuery language, not the other way around. Nor do the other paragraphs or figures referred to by the Examining Division disclose these features.

- 3.4 The Board cannot agree with the Examining Division's arguments that the skilled person would interpret the term "document" in the context of D1 as meaning "composite document" or that D1 somehow implicitly discloses "executing at least one indexing function defined in the XQuery language". The Examining Division appears not to have applied the correct standard in assessing novelty, namely that of direct and unambiguous disclosure of something falling within the terms of the claim. There is no explicit or implicit teaching in D1 that the indexed XML documents are "composite documents", and the mechanism used for constructing the index need not be a function written in the XQuery language. These features are therefore disclosed neither explicitly nor implicitly in the passages cited by the Examining Division.
- 3.5 As the Board is unable to identify in document D1 any passages more pertinent to the claimed invention, it concludes that the subject-matter of independent claim 1 and of corresponding independent claims 9 and 10 is new over document D1 within the meaning of Article 54(1) and (2) EPC.
- 3.6 The Board further notes that the indexing step of document D1 does not store string values or other forms of "computed results" as keys of the generated index. Indeed, the example index shown in paragraph [0032] matches elements (such as "publisher") to positions within the XML document, not to values of elements (such as the name of the publisher). This is not surprising since the index of document D1 is used for

the purpose of speeding up XML processing by allowing the XML processor to skip irrelevant parts of the XML document. Hence, document D1 is not a suitable starting point for assessing inventive step of the present invention.

4. *Remittal to the Examining Division*

Since the Examining Division appears to have misinterpreted document D1 and further documents have been cited in the European search report, the Board considers it appropriate to set aside the decision and to remit the case to the Examining Division for further prosecution.

5. *The appellant's criticism of the appealed decision*

5.1 In the statement of grounds of appeal, the appellant criticised - under the heading "Insufficient reasoning of the examining division" - the Examining Division's communication of 26 August 2013, to which the appealed decision refers for the reasons for the refusal. The appellant argued, in particular, that the communication had not dealt with some of its arguments put forward in its letter of 18 April 2013.

5.2 The appellant did not submit that the Examining Division had committed a substantial procedural violation, nor did it request reimbursement of the appeal fee. Nevertheless, under Rule 103(1)(a) EPC the Board is to consider *ex officio* whether reimbursement is equitable by reason of a substantial procedural violation (cf. decision J 3/14 of 8 September 2014, reasons 8).

5.3 The Board finds that the reasons given by the Examining Division in the communication of 26 August 2013 are understandable, even if flawed. The communication also does address, under point 7, several of the appellant's arguments from the letter of 18 April 2013, which shows that the appellant's submissions were not completely ignored.

The Board further notes that the appellant could still have raised its concerns about the communication with the Examining Division when it withdrew its request for oral proceedings and requested a decision according to the state of the file, but did not do so.

5.4 The Board therefore considers that the Examining Division did not commit a substantial procedural violation which could, under the circumstances, justify reimbursement of the appeal fee.

6. Since the appellant has agreed to remittal, this decision can be taken without first holding oral proceedings.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance for further prosecution.

The Registrar:

The Chairman:



I. Aperribay

R. Moufang

Decision electronically authenticated