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**Datasheet for the decision  
of 24 May 2024**

**Case Number:** T 1704/22 - 3.5.07

**Application Number:** 17823032.2

**Publication Number:** 3529719

**IPC:** G06F17/30

**Language of the proceedings:** EN

**Title of invention:**

Accessing database

**Applicant:**

Infosum Limited

**Headword:**

Accessing database/INFOSUM

**Relevant legal provisions:**

EPC Art. 56, 111(1)  
RPBA 2020 Art. 11

**Keyword:**

Inventive step - unconvincing reasoning  
Remittal to the department of first instance - (yes)

**Decisions cited:**

G 0010/93



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Case Number: T 1704/22 - 3.5.07

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.07**  
**of 24 May 2024**

**Appellant:** Infosum Limited  
(Applicant) 1100 Renaissance Basing View  
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**Representative:** Page White Farrer  
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**Decision under appeal:** **Decision of the Examining Division of the  
European Patent Office posted on 13 December  
2021 refusing European patent application  
No. 17823032.2 pursuant to Article 97(2) EPC**

**Composition of the Board:**

**Chair** J. Geschwind  
**Members:** R. de Man  
M. Jaedicke

## **Summary of Facts and Submissions**

I. The applicant appealed against the decision of the examining division refusing European patent application No. 17823032.2.

II. The contested decision cited the following documents:

D1: E. Kapsammer et al., "The IRO-DB Approach: Processing Queries in Federated Database Systems", Proceedings of the 8th International Conference on Database and Expert Systems Applications (DEXA '97), September 1997, pp. 713-718;

D2: T. Malik et al., "SkyQuery: A Web Service Approach to Federate Databases", Proceedings of the 2003 Conference on Innovative Data Systems Research (CIDR), January 2003, retrieved from: <https://www.cidrdb.org/cidr2003/program/p17.pdf>.

The examining division decided that the subject-matter of claim 1 of the main request and of the first, second and third auxiliary requests lacked an inventive step over document D1. It did not admit the fourth auxiliary request into the proceedings.

III. With its statement of grounds of appeal, the appellant maintained the requests considered in the decision under appeal.

IV. In a communication accompanying the summons to oral proceedings, the board introduced the following documents:

D3: "Relational algebra", Wikipedia, 18 November 2016, retrieved from [https://en.wikipedia.org/w/index.php?title=Relational\\_algebra&oldid=750154131](https://en.wikipedia.org/w/index.php?title=Relational_algebra&oldid=750154131);

D4: L. Mackert and G. Lohman: "R\* Optimizer Validation and Performance Evaluation for Distributed Queries", Proceedings of the Twelfth International Conference on Very Large Databases (VLDB '86), August 1986, pp. 149-159.

It raised a number of clarity objections to claim 1 of the main request which applied, *mutatis mutandis*, also to claim 1 of the first, second and third auxiliary requests. It further expressed the preliminary opinion that the subject-matter of claim 1 of the main request and of the first, second and third auxiliary requests lacked an inventive step over document D1 when combined with document D4 and also lacked novelty over document D4, and that the fourth auxiliary request should not be admitted into the appeal proceedings. It used document D3 as evidence of common general knowledge.

- V. With a letter dated 24 April 2024, the appellant filed an amended main request and amended first to fourth auxiliary requests.
- VI. During the oral proceedings, which were held as scheduled, the appellant requested that the case be remitted to the examining division for further prosecution. At the end of the oral proceedings, the Chair announced the board's decision.
- VII. The appellant's final requests were that the decision under appeal be set aside and that the case be remitted to the examining division for further prosecution or that a patent be granted on the basis of one of the

main request or first to fourth auxiliary requests as filed with its letter of 24 April 2024 or, if any of these requests were not admitted, of the corresponding request as filed with the statement of grounds of appeal.

VIII. Claim 1 of the main request considered in the decision under appeal reads as follows:

"A method of accessing multiple independent databases with a single query having multiple expressions, the method comprising:

deriving from a single query at least one filtering query containing at least one filtering expression and a target query containing at least one target expressions [sic];

searching a first one of the multiple independent databases using the at least one filtering query to obtain a filtering set of target entries matching the at least one filtering expression;

applying identifiers only of the filtering set of target entries and the target query to a second one of the multiple independent databases to search amongst the filtering set of target entries only in the second database for entries that match the target expression; and

generating a set of result entries from the second database which thereby satisfy the filtering expression and the target expression."

IX. Claim 1 of the main request filed with the letter of 24 April 2024 reads as follows:

"A method of accessing multiple independent databases with a single query having multiple expressions, the method comprising:

deriving from a single query at least one filtering query containing at least one filtering expression and a target query containing at least one target expressions [sic];

searching a first one of the multiple independent databases using the at least one filtering query to obtain a filtering set of identifiers associated with entries of the first database matching the at least one filtering expression;

applying only identifiers only [sic] of the filtering set of identifiers and the target query to a second one of the multiple independent databases to search only amongst a set of entries in the second database associated with identifiers of the filtering set for entries that match the target expression; and

generating a set of result entries from the second database which thereby satisfy the filtering expression and the target expression."

- X. The text of the other requests is not relevant to this decision.

### **Reasons for the Decision**

1. The application relates to executing database queries which access multiple independent databases.
2. At the start of the oral proceedings before the board, the appellant requested that the case be remitted to the examining division for further prosecution. The appellant argued that the board's communication had essentially created a fresh case by raising new objections, including objections based on prior-art documents cited for the first time in the appeal proceedings, and not maintaining the reasoning of the

decision under appeal. The appellant should be given the opportunity to defend its case against the newly raised objections in two instances.

3. According to decision G 10/93 (OJ EPO 1995, 172), Reasons 5, if a board of appeal raises new objections, it must decide after due assessment of the particular circumstances whether it will rule on the case itself or whether it will remit the matter for further prosecution to the examining division (Article 111(1), second sentence, EPC). The relevant circumstances of the case must be taken into account and consideration must be given in particular as to whether further investigations should be carried out, whether a procedural violation has taken place which would preclude a decision on the merits, whether there has been any significant change in the facts with respect to the contested decision, what stance the applicant is taking with regard to the "loss of instance", whether a decision by the board would speed up the proceedings significantly and whether there are any other grounds for or against remittal. The weight accorded to individual factors depends on the circumstances of the particular case.
4. In the board's view, a remittal for further prosecution for the purpose of allowing the appellant to defend its case against newly raised objections in two instances makes sense only if the reasoned objections contained in the contested decision cannot be maintained. As explained below, the board considers that this is the case here.
  - 4.1 The examining division refused the then main request for lack of inventive step in the subject-matter of claim 1.

4.2 In its communication, the board raised a number of clarity objections to claim 1. Notwithstanding these objections, it also carried out a preliminary assessment of inventive step by interpreting claim 1 with the help of the description.

4.3 The board's interpretation of claim 1 as set out in its communication is reproduced below:

"8.1.1 It appears that the 'independent databases' are assumed to contain data on overlapping sets of entities, such as persons, and to use common identifiers for these entities, such as email addresses or social security numbers (page 19, third paragraph).

8.1.2 The 'single query' may be a join query for joining data from two databases using a common identifier as the joining key (page 10, first full paragraph). An example is the query 'Distribution (Income) WHERE Distribution (Product Price)', which joins income data and product price data from corresponding databases (page 24, second to fourth paragraphs).

8.1.3 According to claim 1, this query is executed by first querying a first database, for example the product price database, to obtain a set of identifiers of entities having records in the first database and then querying the second database, for example the income database, using this 'filtering set' of common identifiers as a filter (see e.g. the paragraph bridging pages 13 and 14). This then results in a set of records in the second database for



which the common identifier is also a common identifier of a record in the first database."

4.4 Document D1 discloses a federated database system, referred to as IRO-DB, which provides the user with a homogeneous interface for integrated access to multiple heterogeneous autonomous databases (see abstract and section 1, first and second paragraphs).

The IRO-DB architecture includes a local layer, a communication layer, and an interoperable layer (Figure 1 and section 2). The participating heterogeneous autonomous databases are in the local layer and referred to as "local databases" (section 2, "Local layer"). The user interacts with the interoperable layer (section 2, "Interoperable layer").

The interoperable layers include a query processor which transforms user queries into local queries, which can be sent to the local databases, and global queries, which describe how to merge the data retrieved by the local queries to obtain the global results required by the user (Figure 3 and section 4.2, first paragraph).

The IRO-DB system makes available to the user "derived classes", which are virtual classes or views which serve to merge data from different local databases (section 3, "Interoperable schema"). A user query which refers to a derived class is decomposed into several local and global queries, and its execution involves performing a join (section 4.2, second and third paragraphs). The board notes that such a query is decomposed into at least two local queries, one for each of the different local databases from which data is merged.

4.5 Hence, in the system of document D1, a join query for joining data from two databases using a common identifier as the joining key is performed by querying each of the two databases independently using a "local query" and merging the results using a "global query".

Under the board's reading of claim 1 of the main request considered in the decision under appeal, on the other hand, the claimed invention performs the join query by first querying a first one of the two databases using a "filtering query", transmitting the set of identifiers of entities having records in the first database to the second database and then querying the second database.

4.6 The examining division essentially argued that this difference over document D1 amounted to an alternative, sequential implementation of query execution in a federated database. Addressing independent databases sequentially was an obvious option which the skilled person would immediately have considered, in particular because certain queries such as nested queries, which were allowed by the OQL query language used in the system of document D1, inherently required a sequential addressing of different databases, with the result set of the first database serving as input to the second database. Since the system of document D1 returned only identifiers of objects satisfying a query, the skilled person would have used identifiers as input for the second database.

In response to the appellant's counterargument that there was no hint to modify the architecture of document D1 to allow sequential execution and that such a modification would not be possible, the examining division argued that nested queries, which were

possible in document D1, even required sequential execution in certain circumstances, and that the skilled person at the priority date was well aware of sequential query execution in all kinds of distributed databases such as Hive and HadoopDB.

4.7 The board does not find this reasoning convincing.

While the board agrees that a nested query can be formulated which logically queries a second database using the results of a query performed on a first database, this does not mean that such a query requires the second database to be physically addressed using the results obtained earlier from the first database. Instead, the system of document D1 may perform a local query on the second database which returns the relevant contents of that second database and use a global query to query that contents using the results of a local query on the first database, where the two local queries can be performed in any order. Moreover, such an approach would not require any structural modification of the system of document D1.

As for the examining division's argument that sequential query execution was well-known from all kinds of distributed databases such as Hive and HadoopDB, the board considers that this general statement does not allow the relevance of such prior-art systems to the disclosure of document D1 to be assessed.

5. The board further notes that, although the appellant has responded to the board's communication by filing amendments intended to address the newly raised clarity objections, at least some of the objections may require further discussion and potentially further amendments.

6. Moreover, given that the appellant takes the view that the system of document D1 cannot (reasonably) be modified to carry out the claimed query execution, whereas the examining division considers that the claimed query execution, which to the board appears to be the core of the invention (see point 4.3 above), was well-known in the art, it cannot be ruled out that further investigations into the prior art are necessary.
7. In view of the above and the appellant's express wish to avoid a "loss of instance", the board concludes that there are special reasons within the meaning of Article 11 RPBA for remitting the case to the examining division for further prosecution.
8. During the oral proceedings, the board made clear that it had no objection to the admissibility of the amended main request and the amended first to third auxiliary requests filed with the letter of 24 April 2024. However, it did not formally decide on their admission into the proceedings.
9. For the avoidance of any doubt, the board stresses that neither this decision nor its communication contains any findings under Articles 54, 56 and 84 EPC that bind the examining division under Article 111(2) EPC.

## 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 Chair:



S. Lichtenvort

J. Geschwind

Decision electronically authenticated