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**Datasheet for the decision  
of 23 November 2010**

**Case Number:** T 1073/06 - 3.5.06

**Application Number:** 98955104.9

**Publication Number:** 1027647

**IPC:** G06F 9/44

**Language of the proceedings:** EN

**Title of invention:**

Method of generating a display for a dynamic simulation model utilizing node and link representations

**Applicant:**

Entelos, Inc.

**Opponent:**

-

**Headword:**

Dynamic simulation model/ENTELOS

**Relevant legal provisions:**

-

**Relevant legal provisions (EPC 1973):**

EPC Art. 56

**Keyword:**

"Inventive step - no"

**Decisions cited:**

T 0528/07, T 0154/04

**Catchword:**

No technical problem solved. The difference over the closest prior art lacks technical character; see reasons, point 5.



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**Case Number:** T 1073/06 - 3.5.06

**D E C I S I O N**  
**of the Technical Board of Appeal 3.5.06**  
**of 23 November 2010**

**Appellant:** Entelos, Inc.  
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**Representative:** Fox, Nicholas Russell Philip  
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**Decision under appeal:** Decision of the Examining Division of the European Patent Office posted 30 January 2006 refusing European application No. 98955104.9 pursuant to Article 97(1) EPC 1973.

**Composition of the Board:**

**Chairman:** D. H. Rees  
**Members:** A. Teale  
W. Sekretaruk

## **Summary of Facts and Submissions**

- I. This is an appeal by the applicant against the decision dispatched on 30 January 2006 by the examining division to refuse European patent application 98955104.9.
- II. According to the reasons for the appealed decision, the subject-matter of the independent claims according to the then main and auxiliary requests lacked inventive step, Articles 56 and 52(1) EPC 1973, in view of the disclosure of either the graphical user interface (GUI) acknowledged as prior art in figure 1 of the application or the following document:

D1: US 5 845 124 A.

Figure 1 of the application showed a GUI for a simulation model comprising user input objects (14), entity objects (12) and link objects (16). Only the existence of a relationship between objects was shown; the details of such a relationship were only accessible by "drilling down". The technical problem starting from this prior art was thus how to improve the ease of use of the simulation software, the problem being solved according to the claimed invention by using graphically distinct representations to represent relationship conditions between objects in simulation software. The claimed graphically distinct link representations did not however affect the underlying simulation process, and it was known to display icons of differing appearance on a desktop to indicate internal characteristics, for instance which program would be executed if the icon were to be clicked on. It would also have been obvious to provide an input facility

allowing the user to edit the links between the objects, this being well known in the art of drawing programs.

- III. A notice of appeal was received from the appellant on 30 March 2006, the appeal fee being paid on the same day. The appellant requested that the decision be cancelled entirely and that a patent be granted.
- IV. With a statement of grounds of appeal received on 25 May 2006 the appellant filed a set of amended claims and requested that the application be granted on the basis of said claims.
- V. Claim 1 reads as follows:

"Simulation apparatus for processing a simulation model including a first and a second object (54) between which a relationship condition exists, the apparatus comprising: a processor (502); a memory (503) storing modelling software (520) operable to cause said processor to perform simulation operations utilizing a constructed simulation model; input means (510;512) for receiving input data identifying a first object, a second object (54) and a relationship condition identifying a relationship between said first and second objects; and display generation means (80,82,84) for generating display data including respective first and second node representations (115,117) for the first and second objects (54) and a graphical link representation (118; ... ;128) linking said first and second node representations (115,117), characterized in that: said memory (503) is further configured to store data associating a plurality of different relationship conditions each with a graphical link representation

(118; ... ;128) of a plurality of visually distinct graphical link representations (118-128); and in that said processor (502) is configured to: construct a simulation model including first and second objects between which a relationship condition exists on the basis of received input data; and utilize said data stored in said memory (503) to select a graphical link representation (118; ... ;128) to be displayed as linking a first and a second node representation (115,117) in a generated display so that the graphical link representation (118; ... ;128) in a generated display corresponds to the graphical link representation (118; ... ;128) associated by said data with the relationship condition between said first and second objects in said constructed simulation model."

The claims also comprise further independent claims 22 and 43.

- VI. In the statement of grounds of appeal the appellant argued essentially that the claimed subject-matter showed an inventive step over the disclosure of figure 1 of the application and that of D1. The difference features with respect to the closest prior art solved the objective technical problem of "improving the ease with which a user may construct an appropriate simulation model". Various decisions had found that such improvements involved an inventive step; see T 605/93, T 333/95 and T 769/92. The decision misstated the problem as relating to graphical user interfaces, rather than to simulation software, since the above problem only arose with simulation software. Moreover the examining division had not identified a teaching in a prior art document that would have

prompted the skilled person to modify the disclosure of the closest prior art to arrive at the claimed subject-matter.

VII. In an annex to a summons to oral proceedings the board set out its preliminary opinion on the appeal as follows. D1 was post-published and thus did not belong to the state of the art, Article 54(2) EPC 1973. The closest prior art was regarded as the graphical user interfaces (GUI) for graphical simulation models acknowledged as prior art in the published application in figures 1 and 2 and page 1, line 21, to page 2, line 27, of the description. The simulation itself, of which the relationship conditions between objects were a part, seemed to be of a wholly arbitrary nature and thus a system of equations which were non-technical *per se* and comparable with a mathematical method *as such*, Article 52(2)(a) EPC 1973. The board questioned whether the difference features between the subject-matter of the independent claims and the disclosure of the closest prior art had technical character and thus could contribute to inventive step. The board also doubted whether the problem of improving the ease with which a user could construct such a simulation model was technical. Even if the problem were shown to be technical, the board questioned whether the claimed subject-matter involved an inventive step, Article 56 EPC 1973, in view of the combination of the closest prior art with the following prior art document:

D2: "Adaptive pattern recognition and neural networks", Yoh-Han Pao, Addison-Wesley Publishing Company, Inc., 1989, pages 102 to 104.

The board also raised further objections against the application documents.

- VIII. In a letter received on 27 October 2010 the appellant "withdrew" its request for oral proceedings (although there is no record of the appellant having made such a request) and requested that, instead of holding oral proceedings, a decision be issued based on the current state of the file. The appellant did not however comment on the substance of the case.
- IX. The board sent the appellant a fax stating that, for the avoidance of doubt, the oral proceedings were maintained.
- X. Oral proceedings were held on 23 November 2010 in the absence of the appellant, as announced in advance. The oral proceedings were continued without the appellant, Rule 71(2) EPC 1973.
- XI. At the end of the oral proceedings the board announced its decision.

### **Reasons for the Decision**

1. *The admissibility of the appeal*
  - 1.1 In view of the facts set out at points I to VI above, the board finds that the appeal is admissible.

2. *The appellant's non-attendance at the oral proceedings*
  - 2.1 As announced in advance, the duly summoned appellant did not attend the oral proceedings. In accordance with Article 15(3) RPBA (Rules of Procedure of the Boards of Appeal of the European Patent Office, OJ EPO 2007, 536), the board relied for its decision only on the appellant's written submissions. The board was in a position to decide at the conclusion of the oral proceedings, since the case was ready for decision (Article 15(5, 6) RPBA), and the voluntary absence of the appellant was not a reason for delaying a decision (Article 15(3) RPBA).
3. *The context of the invention*
  - 3.1 The application relates to generating a display of a simulation model including objects linked by relationships, for instance a proportional relationship; see table 1 on page 11 of the (amended) description. As page 13 (lines 1 to 7) of the description puts it, "The association of different link representations with each distinct relationship condition of a set is particularly advantageous in that a user viewing a display of a simulation model, such as the simulation model 150 in **Figure 9**, is able immediately to ascertain and understand the relationships between the objects represented by the nodes without having to "drill-down" into the representation or to access additional information windows."
  - 3.2 Figure 9 and the corresponding parts of the description disclose a graphical representation of a simulation model according to the invention. The simulation model

comprises objects (see, for example, "Adult rabbits" 156 and "Young rabbits" 158) connected by links representing the relationship between the objects with visually distinct graphical link representations; see links 126a and 120a labelled with "S" and "P", respectively. The meaning of "S" and "P" is explained in index table 174 as "changes state" and "produces", respectively.

4. *The closest prior art*

- 4.1 This is regarded as the graphical user interface (GUI) for generating a display of a simulation model acknowledged as prior art in the application in figure 1 and described on page 1, lines 21 to 29, of the description. The display comprises input objects (14) and entity objects (12) connected by link objects (16). Only the existence of a relationship between objects is shown, there being no indication of the nature of the relationship. The board regards it as implicit in figure 1 that the model is constructed by some form of simulation apparatus on the basis of input data, the apparatus comprising a processor, a memory storing modelling software, input means and display generation means.
- 4.2 In terms of claim 1, the closest prior art discloses simulation apparatus for processing a simulation model including a first and a second object (12, 14) between which a relationship condition (16) exists, the apparatus comprising: a processor; a memory storing modelling software operable to cause said processor to perform simulation operations utilizing a constructed simulation model; input means for receiving input data

identifying a first object, a second object and a relationship condition identifying a relationship between said first and second objects; and display generation means for generating display data including respective first and second node representations (12, 14) for the first and second objects and a graphical link representation (16) linking said first and second node representations (12, 14), said processor being configured to construct a simulation model including first and second objects (12, 14) between which a relationship condition (16) exists on the basis of received input data.

4.3 The appellant has not disputed this analysis of the closest prior art.

5. *Inventive step, Article 56 EPC 1973*

5.1 The subject-matter of claim 1 differs from the disclosure of the closest prior art in the features that:

- a. said memory is further configured to store data associating a plurality of different relationship conditions each with a graphical link representation of a plurality of visually distinct graphical link representations; and
- b. said processor is configured to utilize said data stored in said memory to select a graphical link representation to be displayed as linking a first and a second node representation in a generated display so that the graphical link representation in a generated display corresponds to the graphical link representation associated by said

data with the relationship condition between said first and second objects in said constructed simulation model.

- 5.2 The effect of the above difference features is that, whilst in the closest prior art the graphical link representation displayed between the first and second objects in the constructed simulation model is independent of the relationship condition between said objects (see the arrows 16 in figure 1), according to claim 1 the processor utilizes the association data stored in the memory to cause the link between said first and second objects in the simulation model to be displayed with the associated graphical link representation. Figure 9 of the application shows examples of the graphical link representations, namely symbols "S" and "P" in links 126a and 120a, respectively.
- 5.3 The appellant has argued that an objective technical problem can be seen in improving the ease with which a user can construct such a simulation model, the claimed solution avoiding the "drilling down" required in the prior art to understand the relationships between the objects in the simulation model. The improvement in the ease of constructing a model alleged is thus confined, in fact, to improving the ease of comprehension of a model, which is thus the actual problem allegedly solved. The board judges however that an improvement in the comprehension of a model is a purely mental effect, so that the problem solved is not seen as being technical. Further, the solution is also not seen as having any technical implications beyond, possibly, routine implementation details, being simply a choice

of where and in what form in a process of visualisation of a model to display certain information, i.e. an issue of "presentations of information", as mentioned in Article 52(2)(d) EPC.

- 5.4 On its broadest interpretation, the simulation model, of which the relationship conditions between objects are a part, can be of a wholly abstract nature and thus a system of equations which are merely a mathematical method and thus non-technical. Indeed the simulation model shown in figure 9 of the application is an example of such a non-technical simulation model in that it represents a predator-prey system involving wolves and rabbits. The claimed "graphical link representations" relate to the state of the simulation model, rather than to the state of the claimed simulation apparatus, and thus constitute presentations of information and are therefore also non-technical; see T 528/07, Reasons 3, not published in OJ EPO. Thus there can be no argument made for a technical contribution to the prior art based on the fact that it is a model that is visualised rather than any other piece of data in a computer. Consequently the difference features set out above do not have a technical effect (going beyond those inherent in running any computer program) and thus lack technical character and cannot contribute to inventive step; see T 154/04, Reasons, 5(F), OJ EPO 2008, 46.
- 5.5 According to the appellant in the statement of grounds of appeal, various decisions had found that improvements of the sort achieved in the present case involved an inventive step; see T 605/93, T 333/95 and T 769/92. Detailed arguments based on these decisions

were not made. The board has considered the decisions cited by the appellant, but finds that they are not relevant to the facts in the present case.

- 5.6 Consequently the board finds that the subject-matter of claim 1 cannot be considered to involve an inventive step, Article 56 EPC 1973.

**Order**

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

The appeal is dismissed.

The Registrar:

A. Counillon

The Chairman:

D. H. Rees