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Datasheet for the decision of 22 July 2015

Case Number: T 1715/11 - 3.2.04

Application Number: 00959089.4

Publication Number: 1207745

IPC: A01J5/007

Language of the proceedings: EN

Title of invention:
GRAPHICAL USER INTERFACE AND METHOD RELATED THERETO

Patent Proprietor:
DeLaval Holding AB

Opponent:
Octrooibureau Van der Lely N.V.

Headword:

Relevant legal provisions:
EPC Art. 56
RPBA Art. 12(4), 13(1)

Keyword:
Inventive step - main request (no)
Inventive step - first auxiliary request (yes)
Late-filed argument - admitted (no)

Decisions cited:
T 0935/97, T 0049/04, T 1793/07, T 1741/08

Catchword:

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Beschwerdekammern
Boards of Appeal
Chambres de recours

European Patent Office
D-80298 MUNICH
GERMANY
Tel. +49 (0) 89 2399-0
Fax +49 (0) 89 2399-4465

Case Number: T 1715/11 - 3.2.04

D E C I S I O N
of Technical Board of Appeal 3.2.04
of 22 July 2015

Appellant proprietor: (Patent Proprietor)	DeLaval Holding AB P.O. Box 39 147 21 Tumba (SE)
Representative:	Gray, Helen Mary ZACCO GmbH Bayerstrasse 83 80335 München (DE)
Appellant opponent: (Opponent)	Octrooibureau Van der Lely N.V. Weverskade 110 3147 PA MAASSLUIS (NL)
Representative:	Jennen, Peter Leonardus Hendricus Octrooibureau Van der Lely N.V. Cornelis van der Lelylaan 1 3147 PB Maassluis (NL)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 17 June 2011 concerning maintenance of the European Patent No. 1207745 in amended form.**

Composition of the Board:

Chairman	A. de Vries
Members:	E. Frank
	C. Schmidt

Summary of Facts and Submissions

I. The appeals lie from the decision of the opposition division, dated 27 May 2011 and posted on 17 June 2011, to maintain the European patent No. 1 207 745 in amended form pursuant to Article 101(3)(a) EPC. The appellant opponent filed a notice of appeal on 4 August 2011, paying the appeal fee on the same day, and submitting the statement of grounds of appeal on 26 October 2011. The appellant proprietor filed a notice of appeal on 15 August 2011, also paying the appeal fee on the same day, and submitting the statement of grounds of appeal on 26 October 2011.

II. Opposition had been filed against the patent as a whole, based inter alia on Article 100(a) in conjunction with Articles 52(1) and 56.

The opposition division held that the second auxiliary request submitted during the oral proceedings met the requirements of the EPC. In its decision the division considered the following prior art, amongst others:

D1 = EP 0 440 313 A2
D4 = W0 99/39567A1
D5 = Krause, J: "Visualisation, multimodality and traditional graphical user interfaces", chapter 4: "Natural mapping", Review of information Science (RIS), ISSN 1431-5971, 1997, issue 2
D6 = Fischer, A: "Intuitive interfaces: a literature review of the Natural Mapping principle and Stimulus Response compatibility",, Technical University Eindhoven, 1999; pp 2-23
D9 = Norman, D.A.: "Design principles for Cognitive Artefacts", Research in Engineering Design, Theory,

Application, and Concurrent Engineering, volume 1992-4,, Springer Verlag, New York; pp 43-50

III. A communication pursuant to Article 15(1) RPBA was issued after a summons to attend oral proceedings, which were duly held on 22 July 2015.

IV. The appellant opponent requests that the decision under appeal be set aside and the patent be revoked.

The appellant proprietor requests that the decision under appeal be set aside and the patent maintained as granted or, alternatively, on the basis of the first auxiliary request, filed during the oral proceedings before the Board, in the version the patent was maintained by the opposition division in the appealed decision (second auxiliary request) or on the basis of the second auxiliary request, filed with letter dated 27 April 2011 (third auxiliary request).

V. The wording of claim 1 reads as follows:

Main request:

"A graphical user interface for the monitoring and controlling of a computer controlled dairy farm system thereof, by a human user, characterized in that said graphical user interface comprises a computer based graphical and schematic representation of said dairy farm system or part thereof, where said representation comprises objects, each of which represents a respective part of said dairy farm system, or part thereof, and each having a spatial location in relation to the other object(s), wherein said spatial location in relation to other object(s) of the respective object is mapped to the spatial location of the respective represented part

of said dairy farm system or part thereof by use of the principle of natural mapping."

First auxiliary request:

Claim 1 is as in the main request but adds at its end the following text:

"..., and wherein said graphical user interface comprises a schematic representation of a milking machine or part thereof, or of a cow or part thereof, wherein said graphical user interface comprises schematic representations of the teats of a cow, or teat cups that are attached to them, by four icons located schematically with a longer distance between the icons representing the front teats or teat cups and a shorter distance between the icons representing the back teats or teat cups,
the schematic representations of the teats or teat cups are associated with respective controls for start milking, and/or wherein:
said graphical user interface comprises schematic representations of an entry gate and of an exit gate, respectively, of said milking machine, at spatial locations corresponding schematically to the respective locations in the milking machine, wherein
the schematic representations of the entry gate and of the exit gate are associated with respective controls for opening and closing the respective gate."

VI. The appellant opponent argued as follows:

Main request

Since in D1 information comes also from the system, "monitoring" is implicitly disclosed. Moreover, the

keyboard of D1 already shows functions to be displayed in a graphical user interface (GUI), and natural mapping would only be a well-known intuitive way of presenting information in a GUI. Therefore, starting from D1, claim 1 of the main request would be obvious for the skilled person.

First auxiliary request

In D1 many functions and associated controls of mechanical parts are disclosed, e.g. also hingedly connected gates in fig. 20 of D1. All parts in D1 must be controllable, since each function of the robot can be controlled manually, if automatic control fails. Naturally mapped teat formations and/or gate elements such as in claim 1 are merely arbitrarily selected from a large number of possibilities, which are clearly disclosed by D1. Any particular technical effects attributed to the new features of claim 1 of the first auxiliary request are not derivable from the patent. Therefore, in the light of D1, the display of arbitrary functions on a GUI by use of natural mapping as now in claim 1 of the first auxiliary request would be obvious for the skilled person, all the more so, since they correspond to manual milking.

Moreover, D4 describes a GUI which is designed by applying natural mapping. Although D4 is not related to milking, the relevant skilled person, who is an IT specialist, would be aware of its contents. Thus, the skilled person would improve the user interface of D1 as taught in D4, thereby also arriving at claim 1 of the first auxiliary request.

Moreover, the distinguishing features of claim 1 over D1 of the first auxiliary request do not lead to a

technical effect, see in particular T 1741/08 relating to GUIs, and thus cannot contribute to an inventive step. Although late filed, this highly relevant argument should therefore be admitted into the proceedings.

VII. The appellant proprietor argued as follows:

Main request

D1 does not disclose "monitoring" of a computer controlled dairy farm system, i.e. the system of D1 is not manipulated as a whole. Moreover, although GUIs are commonly known to the skilled person, the functions of D1's keyboard need not necessarily be incorporated in a GUI by applying the principle of natural mapping. Therefore, the skilled person would not modify D1 by means of a naturally mapped GUI in an obvious manner.

First auxiliary request

The graphic interface of claim 1 now relates to specific parts of the system and also to the particular way in which the interface is presented, so as to allow detailed control of teat cups and/or gates. In so doing, the control of the dairy farm system is facilitated and user errors are reduced, e.g. in an emergency situation. Consequently, the selection of function elements of claim 1 is by no means arbitrary, and also cannot be based on the functions shown as pictograms on D1's keyboard. Otherwise D1 gives no clue which control function of the vast number of possibilities described may be naturally mapped in a GUI, when replacing D1's screen-keyboard interface.

Furthermore, D4 relates to a remote technical field, namely the computer-control of an irrigation system of

large areas such as golf courses. Hence, there is nothing in D4 that would provide the skilled person with a better control of the functions of an automatic milking machine.

As to the late filed argument brought forward by the appellant opponent, it is believed that the naturally mapped GUI of claim 1 of the first auxiliary request does enable a better user interaction and thus has technical character. Therefore, this line of argument cannot be considered prima facie relevant and should not be admitted to the proceedings.

Reasons for the Decision

1. The appeal is admissible.

2. *Inventive step - main request*

2.1 It is common ground that document D1 constitutes the closest prior art. D1 describes an automatic milking system, which is controlled by means of a user interface in the form of a terminal control unit "221", comprising a keyboard 224 and a screen 223, cf. D1, abstract, column 10, lines 13 to 23, and figures 16 to 18. Moreover, the Board concurs with the appellant opponent that D1's user interface serves also to monitor the computer controlled system, since based on various measurements, e.g. when automatically recognizing cows, information is sent back to the computer for storing or further processing, cf. D1, e.g. col. 5, lines 1 to 6, and col. 10, lines 24 to 27. The Board also infers monitoring from the terminal's screen, the only meaningful function of which can be the display to the user of information pertinent to the control of the

milking system, the main purpose of the terminal. Furthermore, contrary to the appellant proprietor's view, D1's computer terminal control unit "221" is understood to manipulate, i.e. monitor and control the dairy farm system as a whole. Finally, the Board holds that the arrangement of functional keys in groups 226, 227 and 228 as shown in figure 17 of D1 and described at column 10, lines 18 to 23, and associated with different functions of the system, the terminal includes objects, which represent a respective part (or functionality) of the dairy farm system. In that the function keys of the keyboard "224" may be provided with pictograms, these parts of the dairy farm system are based on a graphical and schematic representation, which enables the farmer to easily control various activities at the computer terminal, see D1, column 10, lines 28 to 31, and figures 16 to 18.

2.2 Claim 1 differs from the user interface formed by the screen and keyboard of D1's terminal control unit in that there is a graphical user interface (GUI) comprising a computer generated representation of dairy farm objects arranged in spatial relation to each other according to the principle of natural mapping.

The term "mapping" in claim 1 refers to the relation between objects of the graphical user interface (GUI) and parts of the automated dairy farm system, such as the milking machine. A "natural mapping" is a mapping that indicates the relationship of controls and their movements on the one hand and the results of these actions in the real world on the other hand in a natural, logic, and simple manner. It is undisputed that the principle of natural mapping is commonly known in the art and based on the design principles of D.A. Norman, see, e.g., D5 (point 4, "Natural mapping"), D6

(point 2, "Natural Mapping"), or D9 ("Design Principles for Cognitive Artifacts").

2.3 The underlying problem addressed by these distinguishing features can be seen as how to design the computer terminal interface of a dairy farm system so as to enable a user to control various activities in a more intuitive manner. See patent, paragraph 0007.

2.4 The parties acknowledge that at the time of the patent's filing date (in the year 1999) graphical user interfaces or GUI's had become de rigueur in computers, as any computer operating system known at the time, such as for example Windows or Mac OS, demonstrates. In computer science the term "graphical user interface" in fact denotes a type of interface that allows users to interact with electronic devices through graphical icons and visual indicators. The Board adds that the patent itself, see the preamble of claim 1, departs from such a graphical user interface as known in the present context.

Furthermore, as a standard element of a computer system its graphic user interface is an obvious candidate for application of the interface design concept of natural mapping. Indeed D5, which is concerned with interface layouts in graphical user interfaces, see title and abstract, in section 4 (see title and first paragraph) clearly mentions natural mapping in that specific context. Computer application of intuitive design concepts such as natural mapping is further mentioned in D6 in sections 4.2 and 4.2.1 (referring to control panel or control room applications), while D9 in section 4, 1st paragraph, also singles out the modern computer as "perhaps the best-known example of an active cognitive artifact with representations that can be modified

according to the operations requested by the user". Thus, the Board holds that natural mapping if not already expressly stated then is clearly hinted at for computer interface designs.

2.5 Hence, starting from D1 and faced with the problem of designing the screen-keyboard interface of D1 in a more intuitive manner the skilled person will as a matter of course adopt a graphical user interface as is standard in computer terminals. Moreover, as GUI's are known to be ideal candidates for intuitive interface design concepts such as natural mapping as explained above he would also as a matter of obviousness consider natural mapping as one of the most suitable design options for a highly intuitive graphical user interface, thus to arrive at the subject-matter of claim 1 of the patent.

Therefore, the subject-matter of claim 1 of the main request does not involve an inventive step.

3. *Inventive step - first auxiliary request*

3.1 Claim 1 of the first auxiliary request now includes schematic representations of the teats or teat cups by four icons that are located in relative positions corresponding to those of actual teats, and are associated with respective controls for start milking and/or

schematic representations of an entry gate and of an exit gate at spatial locations corresponding schematically to the respective locations in the milking machine, which are associated with respective controls for opening and closing the respective gate. Claim 1 of the first auxiliary request thus specifies the teat

connection and/or exit and entry gates as the control elements that are naturally mapped.

3.2 The naturally mapped graphical representation of the teat formation is sufficient for identifying the respective teat, see patent, paragraph 0033. Thus, with respect to D1, the risk for making a mistake while identifying the teats for further handling such as milking is minimized, see patent, paragraph 0031. Moreover, as opposed to D1, the entry and exit gates are opened and closed by employing natural mapping, wherein the respective positions of the gates correspond to their positions in reality, e.g., with the entry gate to the left and the exit gate to the right (from the user's intended viewpoint), see patent, paragraphs 0037 and 0038. Hence, opening of a gate or detaching of teat cups can be performed extremely rapidly, in particular when an emergency situation arises, such as animals getting jammed in a gate or teats getting caught in a teat cup, see patent, paragraph 0005. In other words, the probability of faulty actions of the user is at least further reduced by this particular employment of natural mapping.

In the light of D1, thus, the problem to be solved based on these additional distinguishing features can be seen as how to further facilitate the dairy farm system control, whilst reducing mistakes during the user's communication with the machine.

3.3 Contrary to the appellant opponent's view, the choice of objects on the graphic user interface which are used for the principle of natural mapping as required by claim 1 of the first auxiliary request cannot be seen as an arbitrary choice of elements. Rather, this is a decisive additional step to be taken by the person skilled in the

art of designing control interfaces such as of computer controlled dairy systems and who is familiar with the interface design concept of natural mapping. That the particular choice of elements to map is not normally arbitrary is further confirmed by D6, page 8, chapter 2, first paragraph: "Although this seems a straightforward approach it includes at least two open questions. One of these questions is what parts of the interface can be described using natural mapping and which effects generating a natural mapping can be used. Second, a more fundamental question is what exactly are physical analogies and cultural standards. ...".

3.4 Furthermore, a large number of functions and potential control elements of the milking box can be identified in D1, assuming that various functions of the robotic system may need to be controlled manually if automatic control fails as argued by the appellant proprietor. For example, D1 describes recognizing the cow (col. 5, lines 1 to 6), operating the robot mechanism (col. 5, lines 38 to 39), displacing the feed bin (col. 4, lines 54 and 55, col. 9, lines 37 to 42, and col. 10, lines 35 to 36), etc. In this context D1 also shows movable gates with hinges, see figure 20.

The Board finds that specific choices of elements to be naturally mapped on a commonly known graphic user interface, other than the grouped functions shown on D1's keyboard as pictograms, are nowhere hinted at by D1. It also fails to find any suggestion that any particular choice might lead to an easier control with reduced chance of the mistakes addressed by the stated problem to be solved, see point 3.2 above.

3.5 Nor is the particular choice claimed evident from D4 further cited by the appellant opponent in this context.

It is true, as is also common ground, that D4 describes a graphical user interface, which can be understood as naturally mapped: see D4, abstract, page 6, lines 1 to 23, and the figures.

However, as opposed to the automatic dairy farm system of D1, document D4 concerns the remote technical field of large computer-controlled irrigation systems, see D4, figures. Thus, as argued by the appellant proprietor, even if it were acknowledged that the relevant skilled person must also be an IT specialist with a wide ranging knowledge of naturally mapped GUI interfaces and thus also familiar with D4, that document does not provide him with any information as to the advantageous selection of naturally mapped elements for a dairy farm system, particularly in view of the problem to be solved as stated above under point 3.2. The user interface of D4 is only related to static irrigation systems of large areas, such as golf courses, whereas D1 interacts with animals, such as cows during milking.

3.6 In summary, the skilled person, starting from the dairy farm system of D1 and looking for a more intuitive GUI to facilitate D1's dairy farm system control whilst reducing mistakes during the user's communication with the machine, would neither draw on his common general knowledge of natural mapping, nor look toward the remote document D4 to the specifically mapped teat formations and/or gates elements of claim 1, which are associated with respective controls for start milking and/or opening and closing the respective gate.

3.7 Finally, the appellant opponent belatedly contests inventive step using a new line of argument based on T1741/08 and according to which the specific GUI layout by natural mapping in claim 1 would not be technical and

thus not contribute to inventive step. However, the finding in T 1741/08 that GUI layouts *as such* are not technical being representations of information (reasons 2.1.10) does not exclude that under certain conditions GUI layouts may be technical. Analogous to the situation for computer programs, see T935/97, this may depend on whether or not that layout can be associated with some technical effect. In the present instance the naturally mapping of teat and/or gate controls on the outlay facilitate control and reduce errors and it is thus seen to facilitate man-machine interaction. Following T 1793/07 of 2 July 2008 by this Board (in different composition) and T 0049/04 the Board sees herein a valid technical effect and it concludes that in the present case the relevant claim features do not concern a GUI layout *as such* and are technical and to be taken into account for the assessment of inventive step (as the appellant opponent has indeed done in all previous submissions). On the face of it, the new submissions of the appellant opponent thus do not convince the Board. For these reasons it decided not to admit them into the proceedings, Articles 12(4) and 13(1) RPBA.

3.8 The Board concludes, therefore, that the subject-matter of claim 1 of the first auxiliary request involves an inventive step within the meaning of Article 56 EPC.

4. No further objections have been raised nor are any apparent to the Board. In particular, the amendments to the claims and consequential amendments to the description of the first auxiliary request have a clear basis in the original disclosure, Article 123(2) EPC. The Board therefore finds, that taking into consideration the amendments made by the appellant proprietor, the patent and the invention to which it relates meet the requirements of the EPC, and that

therefore the patent according to the first auxiliary request can be maintained as amended pursuant to Article 101(3)(a) EPC.

5. Since the first auxiliary request has been found allowable, there is no need for the Board to consider the second and third auxiliary requests.

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 with the order to maintain the patent as amended in the following version:

   Description pages 2 to 4 of the first auxiliary request as filed in the oral proceedings before the Board

   Claims 1 to 13 of the first auxiliary request as filed in the oral proceedings before the Board

   Figures 1 to 3 as in the patent specification.

The Registrar: The Chairman:

G. Magouliotis A. de Vries

Decision electronically authenticated