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Datasheet for the decision of 10 September 2013

Case Number: T 1490/09 - 3.5.05

Application Number: 98919880.9

Publication Number: 1012697

IPC: G06F 3/033, G09G 5/08, G06F 3/00

Language of the proceedings: EN

Title of invention:
Method and apparatus for designing and controlling force sensations in force feedback computer applications

Applicant:
Immersion Corporation

Headword:
Force feedback user-manipulable object/IMMERSION

Relevant legal provisions (EPC 1973):
EPC Art. 56

Keyword:
"Inventive step - (yes, after amendment)"

Decisions cited:
-

Catchword:
-

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Case Number: T 1490/09 - 3.5.05

D E C I S I O N
of the Technical Board of Appeal 3.5.05
of 10 September 2013

Appellant: (Applicant)
Immersion Corporation
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San Jose, CA 95134 (US)

Representative:
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Decision under appeal:
Decision of the Examining Division of the European Patent Office posted 23 February 2009 refusing European patent application No. 98919880.9 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairwoman: A. Ritzka
Members: P. Cretaine
G. Weiss

Summary of Facts and Submissions

I. The appeal is against the decision of the examining division, posted on 23 February 2009, to refuse European patent application No. 98919880.9 on the ground of lack of inventive step (Article 56 EPC), having regard to the disclosure of

D1: WO 97/12357.

II. Notice of appeal was received on 23 April 2009 and the appeal fee was paid on the same day. The statement setting out the grounds of appeal was received on 23 June 2009. The appellant requested that the appealed decision be set aside, that a patent be granted on the basis of claims 1 to 10 according to a main request or claims 1 to 10 according to a first auxiliary request filed with the statement setting out the grounds of appeal, and that the appeal fee be reimbursed under Rule 103 EPC.

III. A summons to oral proceedings scheduled for 10 September 2013 was issued on 6 May 2013. In an annex to this summons, the board expressed the preliminary opinion that the conditions for a reimbursement of the appeal fee under Rule 67 EPC 1973 (applicable here) were not fulfilled and that the two requests did not meet the requirement of Article 56 EPC 1973, having regard to the disclosure of D1.

IV. With a letter of reply dated 7 August 2013, the appellant withdrew the request for reimbursement of the appeal fee and submitted a new main request, a new first auxiliary request, and a second auxiliary request.

V. Oral proceedings were held as scheduled on 10 September 2013, during which a new main request (claims 1 to 9) was filed while the former main request was withdrawn. The appellant finally requested that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 to 9 filed as main request at the oral proceedings or in the alternative on the basis of claims 1 to 10 of the first and second auxiliary requests submitted with letter dated 7 August 2013. After deliberation, the chair announced the board's decision.

VI. Claim 1 of the main request reads as follows:

"A computer readable medium including program instructions for implementing a force sensation design interface, said program instructions performing steps of:

receiving input from a user on a host computer (12), said input selecting a force sensation to be commanded by a host computer (12) and output by a force feedback interface device (14) comprising actuators (30), said force feedback interface device (14) including a user manipulable object (34) graspable by a user and moveable in a degree of freedom;

receiving in real time input from a user to manipulate parameters which define characteristics of said selected force sensation;

displaying in real time a graphical representation of said selected force sensation in said design interface, wherein said graphical representation includes visual

representations of said parameters such that said user can view an effect of said parameters on said force sensation, and

commanding said selected force sensation on said force feedback interface device (14) coupled to said host computer (12) such that actuators (30) of said force feedback interface device (14) output said force sensation on said user manipulable object (34) in real time, and

interactively modifying the parameters until the sensations are at a desired characterization".

The main request comprises a further independent claim (claim 6) directed to a corresponding method.

Reasons for the Decision

1. *Admissibility*

The appeal complies with the provisions of Articles 106 to 108 EPC (cf. paragraph II above). Therefore it is admissible.

2. *Main request*

2.1 The claims of this request were filed in response to the objections raised by the board in the annex to the summons and during the oral proceedings. They differ substantially from the claims underlying the appealed decision in that independent claim 1 and 6 as amended specify:

a) that the step of receiving input from the user is for manipulating **parameters** which define characteristics of the selected force sensation and is performed **in real time;**

b) that the step of displaying a graphical representation of the selected force sensation is performed **in real time** and the graphical representation includes **visual representations of the parameters such that the user can view an effect of the parameters on the force sensation;**

c) that the force sensation is output on the user manipulable object **in real time;**

d) **interactively modifying the parameters until the sensations are at a desired characterization.**

The amendments to claims 1 and 6 are supported by the originally filed description, pages 52 to 56 and figures 13 and 14 (see in particular page 52, lines 11 to 12, 24 to 26 and 34 to 37; page 53, lines 1 to 4; page 54, lines 34 to 37; page 55, lines 8 to 34; page 56, lines 34 to 37). The board is thus satisfied that the above amendments comply with the provisions of Article 123(2) EPC.

2.2 Prior art

D1 is a patent application of the appellant. It relates to a method and apparatus for programming a force feedback applied to an object when it is manipulated by a user. D1 discloses in particular a force feedback

command protocol for use by developers of applications using a force feedback user manipulable object, e.g. a force feedback joystick (see page 5, lines 17 to 28; from page 27, line 32 to page 28, line 4; page 36, lines 17 to 32; page 46, lines 16 to 24). Figures 9 and 14 show command inputs that a developer can select to define a type and characteristics of a desired force sensation to be applied to the user manipulable object. It is implicit from D1 that the force feedback parameters defining a force sensation are provided using an editing tool having a command line type syntax and are therefore predefined by the developer at the time of writing the program defining the force sensation. A programmed force sensation can therefore only be modified by re-opening the editing program and re-using the force feedback command protocol for changing the parameters.

2.3 Novelty and inventive step

The present invention concerns a computer-implemented force sensation design interface. According to the application, the problem to be solved by independent claims 1 (program) and 6 (method) is to provide a tool for enabling the programmer or developer to easily set force feedback characteristics to provide a desired force sensation (cf. page 3, lines 22 to 23; page 6, lines 16 to 19; page 52, lines 7 to 9).

The board concurs with the examining division in considering D1 to be the closest prior art, since it is, like the present invention, related to force sensation programming for a user manipulable object.

However, contrary to what is mentioned in the decision under appeal in point 2.1, D1 does not describe or even suggest that the developer using D1 **has to** test the force and adjust parameters in an **iterative** fashion. On the contrary, D1 explicitly mentions that the described host command protocol provides the developer with a high level efficient language which enables him to easily recognise the type of forces which a command implements (see page 36, lines 30 to 32; page 39, lines 8 to 11; Figures 9 and 14). It is thus implicit from D1 that the aim of the therein described force command protocol is to enable the developer to program the desired force sensation in a single programming session.

Hence the differences between the subject-matter of claim 1 and the disclosure of D1 are considered to be that the program instructions perform the sequential steps of:

- receiving in real time force sensation defining parameters from the user/developer,

- displaying in real time a graphical representation of the selected force sensation which includes a visual representation of the parameters,

- commanding in real time the selected force sensation on the manipulable device,

- interactively modifying the parameters until the desired force sensation is achieved.

The technical effect achieved by these features is that the user/developer may adjust the parameters during the

programming of a force sensation, based not only on his knowledge of the syntax used for programming the force sensations but also on the feedback force he experiences in real time while manipulating the force feedback device and on a visual representation of the force sensation as influenced by the input parameters.

The objective technical problem can thus be defined as how to improve the efficiency of the force sensation design interface of D1 so that a developer can quickly and precisely program a desired force sensation.

The skilled person, starting from D1 and trying to improve the programming efficiency of the force sensation design interface would naturally consider extending and enriching the syntax used for defining force sensations, so that a developer could achieve a desired force sensation in a single programming session without having to reopen the editing interface.

There is no hint in D1 that the force feedback device could be commanded in real time during programming of the force sensation by the developer, to be used as feedback information in a programming loop.

Moreover, the appellant plausibly argued that the graphical representation in real time of the force sensation and of the parameters enables the developer to quickly and easily interpret the influence of the parameter adjustments on the force sensation. In that respect, the board considers that the feature of displaying said graphical representation does not merely consist in representing a physical model and its updating on a graphical user interface, as stated in

the decision under appeal, point 2.2, but rather shows the influence of user inputs, i.e. the parameters, on a physical model, i.e. the force sensation. Therefore, the graphical representation provides the user with another piece of feedback information which it can then use, in addition to the feedback information given by the force feedback device, in the programming loop for adjusting its subsequent inputs. Therefore in the board's judgement, such a feature involves a technical contribution to the claimed subject-matter and shall not be disregarded when assessing the inventive step. There is however no hint in D1 for the skilled person to use such an information as feedback information in a programming loop.

In the board's judgement, the skilled person would therefore not modify the open loop programming scheme of D1 to arrive at the feedback loop scheme of claim 1 using the two above-mentioned pieces of feedback information without the exercise of inventive skill. Thus, claim 1 meets the requirements of Article 56 EPC 1973, having regard to the disclosure of D1. Independent claim 6 contains the same features as claim 1 but expressed in terms of a method claim and, as such, also meets the requirements of Article 56 EPC 1973. The dependent claims comprise further limitations and fulfil the requirements of Article 56 EPC 1973 for the same reasons.

3. Since the main request is allowable, there is no need to consider the first and second 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 grant a patent with the claims 1 to 9 filed as main request at the oral proceedings and a description and drawings to be adapted.

The Registrar: The Chair:

K. Götz A. Ritzka