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**Datasheet for the decision
of 8 March 2016**

Case Number: T 1438/12 - 3.5.05

Application Number: 07841984.3

Publication Number: 2074500

IPC: G06F3/048

Language of the proceedings: EN

Title of invention:

TOUCH SCREEN DEVICE, METHOD, AND GRAPHICAL USER INTERFACE FOR
DETERMINING COMMANDS BY APPLYING HEURISTICS

Applicant:

APPLE INC.

Headword:

GRAPHICAL USER INTERFACE FOR DETERMINING COMMANDS BY APPLYING
HEURISTICS/APPLE

Relevant legal provisions:

EPC 1973 Art. 56

EPC Art. 123(2)

RPBA Art. 13(1)

EPA Form 3030

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It can be changed at any time and without notice.

Keyword:
Late-filed auxiliary requests - justification for late filing (yes)
Inventive step - (no)
Amendments - added subject-matter (yes)

Decisions cited:

Catchword:

Case Number: T 1438/12 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 8 March 2016

Appellant: (Applicant)	APPLE INC. 1 Infinite Loop Cupertino, CA 95014 (US)
Representative:	Howell, Matthew Dafydd Withers & Rogers LLP 4 More London Riverside London SE1 2AU (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 3 November 2011 refusing European patent application No. 07841984.3 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair	A. Ritzka
Members:	M. Höhn
	G. Weiss

Summary of Facts and Submissions

I.   This appeal is against the decision of the examining
        division, posted on 3 November 2011, refusing European
        patent application No. 07841984.3 on the grounds of lack
        of clarity (Article 84 EPC 1973) and lack of inventive
        step (Article 56 EPC 1973).

II.   The decision makes reference to the following prior-art
        publications:

        D1: US2006/026521 A1,
        D4: US2006/055662 A1,
        D6: US2006/001652 A1 and
        D16: US2003/016252 A1.

III.   The notice of appeal was received on 21 December 2011.
        The appeal fee was paid on the same day. The statement
        setting out the grounds of appeal was received on
        13 March 2012. The appellant requested that the appealed
        decision be set aside and that a patent be granted on
        the basis of claims 1 to 14 according to the main
        request filed with the statement setting out the grounds
        of appeal. Oral proceedings were requested on an
        auxiliary basis.

IV.   In an annex to summons to oral proceedings to be held on
        8 March 2016 the board expressed its preliminary opinion
        that the main request did not fulfil the requirements of
        Article 123(2) EPC and lacked inventive step (Article 56
        EPC 1973).

V.   By letter dated 8 February 2016 the appellant submitted
        four sets of claims according to an identical main
        request and first to third auxiliary requests supported
        by arguments in favour of clarity and inventive step.

The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request filed with the statement setting out the grounds of appeal or, in the alternative, on the basis of one of the first to third auxiliary requests filed with letter dated 8 February 2016.

VI.   Oral proceedings were held on 8 March 2016. At the end of the oral proceedings the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request filed with the statement setting out the grounds of appeal or, in the alternative, on the basis of the first auxiliary request submitted at the oral proceedings, the second auxiliary request filed with letter dated 8 February 2016 or the third auxiliary request submitted at the oral proceedings. The first and third auxiliary requests filed with letter dated 8 February 2016 were withdrawn.

VII.   Independent claim 1 according to the main request reads as follows:

"1. A computing device (100), comprising:
a touch screen display (112);
one or more processors (120);
memory (102); and
one or more programs (126; 136), wherein the one or more programs are stored in the memory (102) and configured to be executed by the one or more processors, the one or more programs including:
instructions (6402) for detecting a one finger contact with the touch screen display;
instructions (6404) for applying one or more heuristics to the one finger contact to determine a command for the device; and

instructions (6412) for processing the command;
wherein the one or more heuristics comprise:
a vertical screen scrolling heuristic (6406) for
determining that the finger contact (3937; Fig. 39C)
corresponds to a one-dimensional vertical screen
scrolling command rather than a two-dimensional screen
translation command based on an angle of initial
movement of a finger contact with respect to the touch
screen display, wherein the one finger contact comprises
a finger swipe gesture that initially moves within a
predetermined angle of being vertical with respect to
the touch screen display; and
a two-dimensional screen translation heuristic (6408)
for determining that the one finger contact (3939; Fig.
39C) corresponds to the two-dimensional screen
translation command rather than the one-dimensional
vertical screen scrolling command based on the angle of
initial movement of the finger contact with respect to
the touch screen display, wherein the one finger contact
comprises a moving finger gesture that initially moves
within a predefined range of angles."

Independent claim 1 according to the first auxiliary
request differs from claim 1 of the main request in
specifying that the angle of initial movement is a
<u>calculated</u> one:

Independent claim 1 according to the second auxiliary
request differs from claim 1 of the main request in
replacing "one finger contact" by "single finger
contact".

Independent claim 1 according to the third auxiliary
request differs from claim 1 of the second auxiliary

request in replacing "one or more heuristics" by "a set of heuristics" and by adding:

"and
a horizontal screen scrolling heuristic for determining that the single finger contact (3951, Fig. 39G) corresponds to a one-dimensional horizontal screen scrolling command rather than the two-dimensional screen translation command based on the angle of initial movement of the single finger contact with respect to the touch screen display, wherein the single finger contact comprises a finger swipe gesture that initially moves within a predetermined angle of being horizontal with respect to the touch screen display."

VIII.   After due consideration of the appellant's arguments the chair announced the decision.

Reasons for the Decision

1.   Admissibility

        The appeal complies with Articles 106 to 108 EPC (see Facts and Submissions, point III above). It is therefore admissible.

        Main request

2.   Interpretation of the independent claims

2.1   The board agrees with the understanding of the interaction concept of the present application as set out in the decision under appeal (see point 3.8.3) in that it can be seen as a two-dimensional translation command in which the modification of the GUI object is

based on the gesture input, except when the initial angle of the finger contact movement is close to vertical. In this case the system overrules and a perfect one-dimensional vertical translation is executed.

2.2   In comparison to the wording underlying the decision under appeal, claim 1 has been amended by replacing the expression "one or more finger contacts" several times with "a one finger contact" in the wording of claim 1.

2.3   According to established practice under the EPC, the term "one" in the wording of a claim is normally interpreted to mean "at least one". However, because of the use of the indefinite article in the expression "a one finger contact" in claim 1, in the present case it is interpreted as a single-finger contact or one-finger-only contact.

2.4   Throughout the description of the present application it is disclosed that the invention can be performed with "one or more finger contacts". This is true also for paragraph [00828] and figures 39C as well as 64A and 64B referred to by the appellant. The swipe gestures 3937 and 3939 are disclosed to be performed using one or more finger contacts (see e.g. [00830]).

2.5   No disclosure or indication is found in the application documents indicating that using a single-finger contact instead of a multiple-finger contact involves advantages or provides additional technical effects. Both alternatives are disclosed to be equally suitable for realising the alleged inventive concept of the present application. As was acknowledged by the appellant's representative during oral proceedings before the board,

the technical effect of the present invention is the same for one as for more fingers.

2.6   The board agrees with the decision under appeal that in the absence of any specific interpretation in the description for the meaning of the term "heuristics", it is to be interpreted as having its generally agreed meaning of "rules based on experience and common sense", relating to experience-based techniques which are of general use as a problem-solving method when there is no known method to find an optimal solution, and not as being limited to the sense of "heuristic algorithms".

3.   Article 123(2) EPC

Following the above interpretation, an antecedent basis for the amendment in which single-finger contact is referred to is found in paragraphs [00265] to [00266] with regard to moving the image with a one-finger gesture 1908 or 2008, and in [00116] disclosing that "operations may be applied to single contacts (e.g., one finger contacts) or to multiple simultaneous contacts (e.g., "multitouch'-multiple finger contacts)". There is no conceptual difference in using either one or more finger contacts with regard to the translation operation. Therefore, no additional subject-matter has been added and the amended feature is directly and unambiguously disclosed.

Claim 1 therefore fulfils the requirements of Article 123(2) EPC.

4.   Article 56 EPC 1973 - Inventive step

4.1   D1 is considered to be the closest prior art. D1 is directed to a touch-screen-operated computing device

according to claim 1 (see D1, figure 1). Programs stored in a memory detect input operations on a touch-screen display for producing different commands such as scrolling, zooming, panning, rotating and the like (see D1, [0012] to [0014]). For providing the input, D1 refers to pointing directly on the touch screen, usually with a stylus or finger (see D1, [0007]).

D1 discloses both vertical or horizontal scrolling of an image displayed on the touch screen (see D1, figures 13B and 13C), and panning this image (see D1, figure 13D showing a two-dimensional translation), i.e. the possibility of translating the image in the direction of the fingers by diagonally moving it.

D1 additionally provides an explicit disclosure of detecting linear vertical scrolling by using a single-finger gesture (see D1, figures 23A and 23B; [0076] "A user is able to linearly scroll through the list of media items by moving his or her finger across a touch screen").

4.2   In comparison to the subject-matter of claim 1 detecting a one-finger contact, such a two-dimensional translation in D1 is disclosed only with a two finger gesture. The technical effect of this difference is that by either using a single finger or two-fingers at a time for a gesture the function of a mouse button is simulated, thereby switching between different modes of operation.

4.3   The disclosure of D1 is further distinguished from the subject-matter of claim 1 in that no explicit mention of the term "heuristics" is found in D1. D1 does not explicitly disclose the use of angles of initial movement with regard to determining scrolling or panning operations.

4.4   The objective technical problem underlying these
        distinguishing features is regarded as being to provide
        an alternative solution for switching between the
        different operation modes by using either a one-finger
        gesture or a two-finger gesture.

4.5   From the stylus for input operations in D1, the skilled
        person would understand that by using a stylus (see
        point 4.1 above) all the gestures have to be made by a
        single contact point to the touch screen, and would
        thereby be motivated to look for a solution to the
        problem posed using a single-contact point gesture.

4.6   The board agrees that claim 1 effectively proposes the
        use of "heuristics" in the predetermination of the
        gesture tolerances (see also point 2.6 above). The board
        notes that the use of such heuristics was widely known
        in the field before the priority date of the present
        application as exemplified by D16 (use of heuristics for
        predicting an intended user operation, see abstract and
        throughout that document).

4.7   D1 discloses determining the angles of a gesture
        relative to a reference point (see D1, e.g. [0108])
        which the board regards as at least equivalent to an
        initial movement. While this disclosure is directed to a
        rotation mode using two fingers in D1, the skilled
        person nevertheless learns from it that the angles of
        initial movement are a useful parameter to consider when
        designing rules for translating imprecise user gestures
        into precise intended commands.

4.8   Looking for a solution to the objective technical
        problem, the skilled person would also consider prior-
        art publication D6 which is also in the field of

detection of gestures on a touch screen and, notwithstanding the appellant's assertion to the contrary, is pertinent. D6 (see [0006] to [0008]) discloses evaluation of the difference between vertical and horizontal distances of a touch input which is regarded as equivalent to the respective feature of claim 1 which merely specifies that commands are "based" on an angle of initial movement. Considering trigonometry and very basic mathematical operations, the skilled person would realise that also the teaching of D6 deals with mathematical operations which are at least based on angles.

D6 discloses (see paragraph [0022] and figure 6) an embodiment according to which the direction of the movement of the finger on the screen is determined and used for disambiguating between two different commands.

The passage reads:

"Referring to FIG. 6, the vertical component A and the horizontal component B of the distance C of the movement in the direction {right arrow over (a)} are first evaluated, and the difference D between the distances A and B are further evaluated. If the vertical distance A is larger than the horizontal distance B over a reference R, i.e., D=(A-B)>R, then the vertical scroll bar of the window is scrolled, and the scrolling amount of the vertical scroll bar is proportional to the difference D. On the contrary, if the horizontal distance B is larger than the vertical distance A over the reference R, i.e., D=(B-A)>R, then the horizontal scroll bar of the window is scrolled, and the scrolling amount of the horizontal scroll bar is proportional to the difference D".

This teaching is considered to be a set of heuristics according to the interpretation of claim 1 (see point 2.6 above). In particular the reference R is considered to be at least equivalent to an angle and, hence, the heuristics are based on an angle.

4.9   Notwithstanding the appellant's argument, the board is not combining different embodiments within D6, but only making reference to figure 6 and paragraph [0022] (second embodiment).

4.10   Alternatively, in the board's judgement the claimed solution is also obvious from the disclosure of D4, which is also pertinent because it is in the field of analysing input gestures on touch screens. D4 does not only disclose how to determine whether a stylus input or single-finger input is a flick (see e.g. paragraph [060] onwards, in particular [0063]), but also determines the flick direction (see e.g. paragraph [0055] onwards and figure 3) in order to distinguish between different commands (as agreed during oral proceedings, each of the segments shown in figure 3 represents a separate heuristic for mapping a flick to a respective command). Reference is made particularly to the following passage of paragraph [0063] of D4:

"... This may include a determination of whether all points in the gesture lie within a predefined angle from an initial contact point. This initial angle may include 45[deg.] or less."

D4 therefore renders it obvious to evaluate whether all points of the gesture lie within a predefined angle from an initial contact point according to the claimed solution. The skilled person would therefore consider

the use of an evaluated angle of initial movement as a
criterion for designing a corresponding heuristic.

4.11   The skilled person looking for a solution to the
        objective technical problem would understand from D6 or
        D4 that the distinction between using a single finger or
        two fingers at a time for a gesture in D1 is not
        required for switching between different modes of
        commands (here: vertical or horizontal scrolling). The
        board does not concur with the appellant's arguments to
        the contrary. In particular, the argument that the one-
        finger-gesture mode disclosed in D1 was a cursor control
        mode which had to be maintained does not convince the
        board. Once aware from D6 or D4 of this technical
        concept for disambiguating commands, the skilled person
        would realise without the need for inventive skills that
        this concept can be applied to the different modes of
        operation known from D1, i.e. vertical scrolling and
        panning (see point 4.1 above), and that the panning
        operation would be equally possible using a single-
        finger gesture as already known for a vertical sliding
        command in D1 (see e.g. figure 23B).

4.12   Starting from the disclosure of D1 combined with the
        teaching of either D6 or D4 in view of the skilled
        person's common general knowledge, the subject-matter of
        claim 1 therefore does not involve an inventive step
        (Article 56 EPC 1973).

        First auxiliary request

5.   Claim 1 according to this request differs from the main
        request by the feature "a calculated angle of initial
        movement".

6.   Because it directly addresses aspects related to an objection made by the board and discussed during oral proceedings, the request, although late-filed, was admitted into the proceedings under Article 13(1) RPBA.

7.   Amendments - Article 123(2) EPC

        The appellant referred to paragraphs [00443], [00444] and [00845] to [00847] of the application as filed and argued that they disclosed the amendment at least implicitly.

7.1   These passages deal with the predetermined angle (e.g. by specifying a specific value of 27 degrees), but do not give details of how to determine an angle of initial movement. In particular, there is no disclosure or hint that an angle is calculated. The board is therefore not convinced that the amendment has an antecedent basis directly and unambiguously disclosing it.

7.2   The requirements of Article 123(2) EPC are therefore not fulfilled.

        Second auxiliary request

8.   Since claim 1 according to this request differs from the main request merely by specifying that the one-finger contact is a single-finger contact, as accepted and hence already interpreted by the board in connection with the main request, the claimed subject-matter is substantially the same as in the main request. The appellant relied on the arguments presented with respect to the main request.

The subject-matter of claim 1 according to this request therefore lacks inventive step for the same reasons as given with regard to the main request.

Third auxiliary request

9.   Claim 1 according to this request differs from the preceding request by a set of heuristics further comprising the additional feature:

"a horizontal screen scrolling heuristic for determining that the single finger contact (3951, Fig. 39G) corresponds to a one-dimensional horizontal screen scrolling command rather than the two-dimensional screen translation command based on the angle of initial movement of the single finger contact with respect to the touch screen display, wherein the single finger contact comprises a finger swipe gesture that initially moves within a predetermined angle of being horizontal with respect to the touch screen display".

10. Because it directly addresses aspects related to an objection made by the board and discussed during oral proceedings, the request, although being late-filed, was admitted into the proceedings under Article 13(1) RPBA.

11. Amendments - Article 123(2) EPC

The additional feature is originally disclosed in paragraphs [00834] and [00847] as well as in figure 64B of the application as filed.

The requirements of Article 123(2) EPC are therefore fulfilled.

12.   Inventive step - Article 56 EPC 1973

12.1   Given the obvious combination of D1 and D6 (see point 4
        above), the skilled person already learns from D6 how to
        determine a horizontal scrolling command from a single-
        finger touch input (see D6, figure 6 and [0022]). The
        skilled person thereby learns how to design a
        corresponding heuristic as a bonus effect without the
        need for inventive skills.

12.2   Furthermore, the skilled person would not see any
        difficulties or technical hurdles to be overcome when
        considering more than two heuristics in the context of
        D6, e.g. by providing different references R1, R2 etc.
        according to the teaching of D6 (see paragraph [0022] of
        D6 cited in point 4.8 above).

        As already argued above (see point 4.11), once aware
        from D6 of this technical concept for disambiguating
        commands, the skilled person would realise without the
        need for inventive skills that this concept can be
        applied to different modes of operation known from D1,
        i.e. scrolling and panning.

12.3   The board therefore considers that the subject-matter of
        claim 1 according to this request is still obvious from
        the disclosure of D1 combined with the teaching of D6 in
        view of the skilled person's common general knowledge
        (Article 56 EPC 1973).

13.   Hence, none of the appellant's requests fulfils the
        requirements of the EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

L. Malécot-Grob   A. Ritzka

Decision electronically authenticated