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**Datasheet for the decision
of 7 April 2014**

Case Number: T 1192/10 - 3.5.05

Application Number: 06250568.0

Publication Number: 1688826

IPC: G06F3/01

Language of the proceedings: EN

Title of invention:

User interface with gesture-recognition

Applicant:

Samsung Electronics Co., Ltd.

Headword:

User interface with gesture-recognition/SAMSUNG

Relevant legal provisions:

EPC Art. 56, 84, 123(2)

Keyword:

Amendments - added subject-matter (no)
Claims - clarity after amendment (yes)
Inventive step - after amendment

Decisions cited:

Catchword:



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Case Number: T 1192/10 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 7 April 2014

Appellant: Samsung Electronics Co., Ltd.
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 4 January 2010
refusing European patent application No.
06250568.0 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair: A. Ritzka
Members: M. Höhn
F. Blumer

Summary of Facts and Submissions

- I. This appeal is against the decision of the examining division, posted on 4 January 2010, refusing European patent application No. 06250568.0 on the grounds of lack of clarity (Article 84 EPC) and lack of inventive step (Article 56 EPC) with regard to prior art publications:
- D1: US 6 369 794 B1 and
D2: US 2004/034505 A1.
- II. The notice of appeal was received on 15 March 2010. The appeal fee was paid on the same day. The statement setting out the grounds of appeal was received on 14 May 2010. The appellant requested that the appealed decision be set aside and that a patent be granted on the basis of one of the three sets of claims filed respectively as the main request, and first and second auxiliary requests along with the statement setting out the grounds of appeal. Oral proceedings were requested on an auxiliary basis.
- III. By a communication dated 26 September 2013 the board informed the appellant that after a first assessment of the appeal the board was of the preliminary opinion that the appellant's amendments to the claims according to the main request overcame the objections under Article 123(2) EPC raised in the decision under appeal. Furthermore, it appeared that the subject-matter of the independent claims 1, 7 and 12 according to the main request fulfilled the requirements of novelty and inventive step (Articles 52(1), 54(2) and 56 EPC) with regard to the prior art on file. However, the board was not yet in a position to grant a patent on the basis of

the main request, because there were problems concerning the clarity of independent claim 1 (Article 84 EPC). Furthermore, the description would have to be adapted accordingly.

IV. By letter dated 5 December 2013 the appellant submitted amended pages 3, 4 and 11 of the description and page 15 with an amended claim 1 according to the main request, and requested the grant of a patent with the amended pages.

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

"1. A user interface method, comprising:
measuring acceleration of an input device (1) while a button of the input device is activated, using the input device to generate acceleration signals;
determining whether the input device (1) operates outside any one predetermined range of a range of sampling periods, a range of gesture periods and a range of poses of the input device;
wherein the sampling period is a period when the button is activated, a gesture period is a period when the measured acceleration signals indicate a gesture is made, and the pose range indicates ranges of pitch and roll angles of the input device (1) with respect to a bottom plane on which the input device is positioned;
and
characterised by generating a warning indicating that the input device has deviated from one of the predetermined ranges when the input device (1) deviates from one of the predetermined ranges and outputting a warning message corresponding to the warning to a user,
and

generating another warning that the button (1-1) has been temporarily released from activation, when the button is deactivated and re-activated within a predetermined time during the gesture period and outputting another warning message corresponding to the other warning to the user."

Claim 7 is directed to a corresponding user interface apparatus.

Reasons for the Decision

1. Admissibility

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

Main request

2. Article 123(2) EPC

The board agrees with the appellant's argument (see bottom of page 3 of the grounds) that the expression "Warning output unit" discloses sufficiently that the warning is generated to be output to the user. This is supported by page 7, lines 12 to 17 of the description as originally filed with regard to a deviation from predetermined ranges. The skilled reader would understand that the "Warning output unit" also works in the same way for other deviations. On page 8, lines 3 to 7 of the description as originally filed support is found with regard to a temporary button release. Likewise, amended claim 10 renders the distinction

between an analysing unit and warning output unit clear.

As far as the expression "another threshold value" in line 8 of page 11 is concerned, the board agrees that the skilled reader would find support in the statement " $T_{AccVar} \dots$ is greater than T_{accvar} ", (see letter of 5 December 2013).

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

3. Article 84 EPC

All the objections raised in the decision under appeal concerning lack of clarity have been addressed by the appellant and have been overcome by amendment in the present independent claims and the dependent claims (see objections under points 2.2.1 and 2.2.2 in the decision under appeal and the appellant's answer on clarity issues on page 3 of the grounds).

4. Article 56 EPC

4.1 In the board's view the examining division correctly reasons that D1 is considered to be the closest prior art to the subject-matter of claim 1 and discloses (the references in parentheses applying to D1):

A user interface method (col. 1 l. 13-17, Fig. 5) comprising:

- measuring acceleration of an input device while a button of the input device is activated, using the input device to generate acceleration signals ("the motion detecting unit has two acceleration sensors which are equipped inside an enclosure", col. 7 l.

61-63; "detect motion of the enclosure while the user is pressing the button", col. 8 l. 8-10);

- determining whether the input device operates outside a predetermined range of gesture periods wherein a gesture period is a period when the measured acceleration signals indicate a gesture is made ("measuring a period during which SwingThreshold is exceeded", col. 17 l. 53-56, "if a period during which SwingThreshold is exceeded is shorter than a fixed first period [...] [or] longer than a fixed third period", col. 18 l. 66 - col. 19 l. 10);

- generating a warning message when the input device has deviated from the predetermined range ("notifies [...] of occurrence of a malfunction", col. 18 l. 66 - col. 19 l. 10).

The board agrees that the period during which SwingThreshold is exceeded in D1 corresponds to the gesture period according to claim 1.

- 4.2 Hence, the subject-matter of claim 1 differs from the disclosure in D1 in that according to claim 1:
- a) warning messages are output to the user instead of having only internal messages between different components,
 - b) a range of sampling periods, i.e. a period when the button is activated, is supervised,
 - c) a range of poses indicating ranges of pitch and roll angles of the input device with respect to the bottom plane on which the input device is positioned is supervised and
 - d) temporary button release when the button is deactivated and re-activated within a predetermined time causes another warning to the user.

4.3 As far as distinguishing feature a) is concerned, the board agrees with the examining division that the technical effect can be regarded as attracting the attention of the user to the occurrence of certain conditions, thereby solving the objective technical problem of how to provide feedback to the user about internal states or identified conditions of the device. Outputting warning messages is a notorious solution to said problem. In particular, outputting error feedback signals to the user in case of malfunctions due to inappropriate inputs is a known alternative to taking no action. Although not exactly in the same field, D2 could be used in combination (see par. 68), thereby rendering this feature obvious.

4.4 As far as distinguishing feature b) is concerned, D1 discloses the use of a button for activation of the measurement of acceleration values (see e.g. col. 13, l. 16-19) and ending the measurement when the button is released (see col. 10, l. 38-41). However, there is no disclosure of determining whether the input device operates outside a predetermined (valid) operation range of sampling periods (i.e. period of button activation). There is no information given that the number of samples taken is limited to a certain value. The examining division referred in its reasoning to a "sensing time-out, which is a well-known (if not notorious) feature". Even if this feature is considered to be simple, the board does not regard it as notorious knowledge in the field of gesture recognition for the purpose of solving the underlying problem of improving gesture recognition. The examining division did not refer to any document to support this argument. The documents on file are therefore not considered to render such a measure obvious.

- 4.5 As far as distinguishing feature c) is concerned, D1 does not explicitly disclose that it is determined whether the input device operates outside a predetermined (valid) operation range of poses (i.e. pitch and roll angles). However, the board agrees with the examining division that there is an implicit disclosure, since D1 generally teaches validating the input data and restricting pattern recognition/matching to valid inputs (col. 20 l. 30-34). The validation criteria involve, among others, ranges of gesture periods (col. 18 l. 66 - col. 19 l. 10), ranges of peak values in the frequency distribution (see e.g. col. 2 l. 36-49), ranges of mean values of differential values (col. 2 l. 55-67), ranges of absolute acceleration levels (col. 3 l. 39-47). These validation criteria introduce respective restrictions which are not considered to have an impact on the range of poses with pitch and roll angles. This feature is therefore considered to be obvious with regard to the understanding of the disclosure in D1 when interpreted in the light of the skilled person's common general knowledge.
- 4.6 As far as distinguishing feature d) is concerned, the board agrees with the appellant that the "temporary released" condition is not suggested at all in the prior art on file (see page 2, par. 7 of the grounds). D1 discloses the use of a button for activation of the measurement of acceleration values (see e.g. col. 13, l. 16-19) and ending the measurement when the button is released (see col. 10, l. 38-41). However, D1 does not disclose generating a warning if the button is deactivated and re-activated within a predetermined time.

The examining division's line of reasoning with reference to a button that is lit (or associated with a light, e.g. a LED) while activated or that emits a sound (e.g. a beep) when pressed, does not convince the board, because no warning is generated at the time of re-activation. This reference to common general knowledge therefore does not render feature d) obvious either.

The examining division further argued that in the light of the description and drawings (p. 7 l. 30-33 and Fig. 5(b)) no data was sampled during a temporary release (even if acceleration data was measured, see p. 7 l. 23-25 and Fig. 5(c) (d), which, however, was not claimed). Therefore, no data was available for further use. Accordingly, it was not clear what problem was solved by detecting a temporary release condition. However, the board considers that feature d) solves the problem of informing the user of an interruption of the measurement during performing a gesture by technical means (detecting if the button is deactivated and re-activated within a predetermined time).

4.7 The examining division's argument that, although the actual implementation of the specific validation criteria involved a technically skilled person, the definition of the expected operation (e.g. what motions and durations of the input are expected) was rather business-based, according to the intended purpose of the device and to design choices, does not convince the board. Whatever the reason for the definition of a gesture might be, the underlying ranges, rolls and angles are of a technical nature.

4.8 Since distinguishing feature b) and in particular feature d) are non-obvious themselves with regard to

the prior art on file, the question of juxtaposition and synergetic effects is not relevant for the assessment of inventive step.

- 4.9 The above reasoning with respect to claim 1 applies *mutatis mutandis* to the corresponding independent claim 7 for an apparatus and claim 12 for a medium comprising computer readable code, which therefore involve an inventive step as well (Article 56 EPC). The dependent claims, which specify further limiting features, also comply with the provisions of Article 56 EPC.
5. For these reasons, the main request fulfils the requirements of the EPC. The precautionary request for oral proceedings, hence, does not have to be granted.

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 on the basis of claims 1 to 4 as submitted with letter dated 5 December 2013 and claims 5 to 12 as submitted as the main request with the statement setting out the grounds of appeal dated 14 May 2010, description pages 3, 4 and 11 as submitted with letter dated 5 December 2013, pages 1 and 2 as submitted with letter dated 10 October 2007, pages 5 to 10 and 12 to 14 as originally filed, and drawing sheets 1/9 to 2/9 and 4/9 to 9/9 as originally filed and drawing sheet 3/9 as submitted by telefax on 1 October 2009.

The Registrar:

The Chair:



K. Götz

A. Ritzka

Decision electronically authenticated