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**Datasheet for the decision
of 3 September 2015**

Case Number: T 1189/11 - 3.5.05
Application Number: 08019763.5
Publication Number: 2071441
IPC: G06F3/048, G06F1/16
Language of the proceedings: EN
Title of invention:
Mobile phone

Applicant:
Semiconductor Energy Laboratory Co., Ltd.

Headword:
Mobile phone with gradient-based functions/SEMICONDUCTOR
ENERGY LABORATORY

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

Keyword:
Late-filed request - admitted (no)
Inventive step - (no)

Decisions cited:

Catchword:



Beschwerdekammern
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Case Number: T 1189/11 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 3 September 2015

Appellant: Semiconductor Energy Laboratory Co., Ltd.
(Applicant) 398 Hase
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Representative: Grünecker Patent- und Rechtsanwälte
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted on 14 January 2011 refusing European patent application No. 08019763.5 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair A. Ritzka
Members: P. Cretaine
D. Prietzel-Funk

Summary of Facts and Submissions

I. This appeal is against the decision of the examining division, posted on 14 January 2011, refusing European patent application No. 08 019 763.5 on the grounds of lack of inventive step (Article 56 EPC) with respect to a main and an auxiliary request, having regard to the disclosure of

D1: US 2007/109260, in combination with

D2: US 2006/197753 and

D3: US 2003/156100.

II. Notice of appeal was received on 17 March 2011. The appeal fee was paid on the same day. A statement setting out the grounds of appeal was received on 19 May 2011. The appellant (applicant) requested that the decision of the examining division be set aside and that a patent be granted on the basis of a main request or of auxiliary requests 1 to 4, submitted with the statement setting out the grounds of appeal. The claims of the main request were identical to the claims filed in examination on 29 March 2010 and which had been withdrawn during the oral proceedings before the examining division. The appellant also requested oral proceedings, should the board not grant the main request.

III. With a communication dated 29 May 2015 the board gave its preliminary opinion on the appeal pursuant to Article 15(1) RPBA.

The board first mentioned that the issue whether the main request should be admitted into the proceedings

under Article 12(4) RPBA would be discussed at the oral proceedings.

The board further expressed its view that the subject-matter of claim 1 of the main request did not meet the requirement of Article 56 EPC, having regard to the combination of D1 and D3 or to the combination of D2 and D3. Objections under Article 56 EPC were also raised against the auxiliary requests 1 to 4, using combinations of the documents D1, D2 and D3.

- IV. By letter dated 28 July 2015, the appellant provided arguments as to the admissibility of the main request and arguments in favour of inventive step with respect to all requests.
- V. Oral proceedings were held on 3 September 2015. The appellant's final requests were that the decision under appeal be set aside and a patent be granted on the basis of the claims of the main request or of one of auxiliary requests 1 to 4 submitted with the letter setting out the grounds of appeal. At the end of the oral proceedings, the decision of the board was announced.
- VI. Claim 1 of the main request reads as follows:

"A mobile phone comprising:
an optical sensor (112);
a display element (111);
a pixel circuit portion (101) where a plurality of pixels and a plurality of transistors are arranged;
an optical sensor control circuit (105) connected to an optical sensor driver circuit (103) which is configured to drive the optical sensor (112) and read a signal from the optical sensor (112);

a display portion control circuit (104) connected to a display element driver circuit (102) which is configured to drive the display element (111);
a gradient detection portion (106) which is configured to detect whether a gradient of the mobile phone from a viewpoint is in a first state, a second state, or a third state, and to output a signal in accordance with the gradient; and
an arithmetic circuit (107) which is configured to perform switching of functions in accordance with a function used by a user related to display and input on a display surface in accordance with the gradient."

Claim 1 of auxiliary request 1 adds to claim 1 of the main request the wording "provided in each of the plurality of pixels;" after the wording "an optical sensor (112)".

Claim 1 of auxiliary request 2 adds to claim 1 of the main request, before the wording "a display portion control circuit (104)", the wording "a display portion (201) which is configured to display a first input key display region (213A) and a second input key display region (213B) with a character display region (214) interposed therebetween;".

Claim 1 of auxiliary request 3 reads as follows:

"A mobile phone comprising:
a pixel circuit portion (101) where a plurality of pixels and a plurality of transistors are arranged;
an optical sensor (112) provided in each of the plurality of pixels;
a display element (111);
an optical sensor control circuit (105) connected to an optical sensor driver circuit (103) which is configured

to drive the optical sensor (112) and read a signal from the optical sensor (112);
a display portion control circuit (104) connected to a display element driver circuit (102) which is configured to drive the display element (111);
a gradient detection portion (106) which is configured to detect whether a gradient of the mobile phone from a viewpoint is in a first state, a second state, or a third state, and to output a signal in accordance with the gradient, wherein the pixel circuit portion (101) displays images of television broadcasts in the first state, and displays character input keys in the second state and the third state, and wherein the second state and the third state have a larger gradient than the first state from the viewpoint; and
an arithmetic circuit (107) which is configured to perform switching of functions in accordance with a function used by a user related to display and input on a display surface in accordance with the gradient."

Claim 1 of auxiliary request 4 adds to claim 1 of auxiliary request 2, after the wording "with a character display region (214) interposed therebetween", the wording ", wherein each of the first input key display region (213A) and the second input key display region (213B) includes a plurality of character input keys".

Reasons for the Decision

1. The appeal is admissible.
2. Main request - Admissibility
The claims of the main request are identical to the claims filed in examination on 29 March 2010. These

claims were replaced by claims of an amended main request at the beginning of oral proceedings before the examining division. No decision was taken by the examining division with respect to this request. The question therefore arises whether this request should be admitted into the proceedings under Article 12(4) RPBA, which stipulates that the board has the power to hold inadmissible requests which could have been presented in the first instance proceedings.

As to the question why the main request was reintroduced in the appeal proceedings although it had been replaced in the oral proceedings before the examining division, the appellant argued that, although it considered the amendment not to be necessary, it had wanted to follow the respective indications of the examining division in order to have a better chance to get the patent granted. The board is however of the opinion that the appellant should have maintained the main request and should have filed an auxiliary request in order to receive an appealable decision from the examining division on the points in question. The appellant further argued that the rather strict approach of Article 12(4) RPBA recently followed by the boards was not usual at the time when examination oral proceedings took place, in 2011. The board however notes in that respect that Article 12(4) RPBA in its present formulation was issued in 2007 (see OJ EPO 2007, 536ff.).

For these reasons, the board decided not to admit the main request in the appeal proceedings, under Article 12(4) RPBA.

3. Auxiliary request 1

It was common ground during the oral proceedings that the differences between the subject-matter of claim 1 and the disclosure of D1 were the provision of an optical sensor provided in each of the plurality of pixels and of an optical control circuit connected to an optical sensor driver circuit which is configured to drive the optical sensors and read signals from the optical sensors.

The technical effect of these features is that the mobile phone is able to detect and read optical signals at the level of each pixel. The objective technical problem can thus be formulated as how to provide the mobile phone with optical signal detection capabilities at the level of the pixels to improve operability.

By consulting the prior art in order to solve this problem, the skilled person would come across document D3. D3 discloses (see [0023] and [0024]) a mobile phone provided with a touch screen display, including a plurality of optical sensors and associated control and driver circuits. D3 further teaches that an individual light sensor is provided near an individual pixel (see [0010] and [0011]), that any pattern or placement of the light sensors is possible (see [0028]), in particular with respect to **a** pixel (see [0030]). In the board's view, this amounts to an implicit disclosure of the provision of one sensor per pixel.

The skilled person would thus apply the teaching of D3 in respect of the display to the mobile phone of D1 and arrive at the subject-matter of claim 1 without the exercise of inventive step.

The appellant argued that paragraph [0028] of D3 was related to Figure 1 which clearly showed that sensors 42 were not placed in each pixel as required by claim 1, but rather in the middle of a pixel group. As a consequence the wording "any pattern" in paragraph [0028] should not be read as including the pattern "one sensor per pixel". Further, Figure 5 in relation with paragraph [0029] also showed an embodiment with a sensor placed in the middle of a pixel group. Moreover, Figure 6 in relation with paragraph [0030] showed a further embodiment wherein the sensor was placed in the corner of a pixel.

The board is not convinced by these arguments, in particular since paragraphs [0028] and [0030] of D3 do not exclusively relate to Figures 1 and 6, respectively, but also disclose, alternatively, a wide range of possibilities for the position of the sensors.

For these reasons the board judges that claim 1 does not meet the requirements of Article 56 EPC, having regard to the combination of D1 and D3.

4. Auxiliary request 2

It was common ground during the oral proceedings that D2 can be considered as starting prior art and that the subject-matter of claim 1 differs from D2 in that:

a) an optical sensor is provided in each of the plurality of pixels and an optical control circuit is connected to an optical sensor driver circuit which is configured to drive the optical sensors and read signals from the optical sensors, and

b) a display portion is configured to display a first input key display region and a second input key display region with a character display region interposed therebetween, this feature being illustrated by Figures 7A and 7B of the application.

Feature a) alone is already known from D3 (see section 3 above).

As to feature b), the board agrees with the appellant that its technical effect is that the input keys can be operated while the housing is held in both hands, which provides the advantage that the time taken to input characters can be shortened. The objective technical problem can thus be formulated as how to shorten the character input time.

A display arrangement according to feature b) is however already disclosed in Figure 7 of D2. According to paragraph [0071] where Figure 7 is referenced, the display arrangement is particularly well suited for game playing. The skilled person is aware that the input time is a crucial issue for many games on portable game devices and he would realise that the display of Figure 7 provides a solution to this problem. The skilled person is thus incited to apply the same solution to a portable telephone device when trying to solve the above-identified objective technical problem, thereby arriving at a mobile phone comprising feature b) without the exercise of inventive skills.

Moreover, feature b) defining the display is merely juxtaposed in claim 1 to feature a) defining the optical sensor, the optical sensor control circuit and

the optical sensor driver circuit, so that no surprising combination effect is provided.

The appellant argued that the arrangement disclosed in Figure 7 of D2 was related exclusively to a PDA or a game device, and not to a mobile phone, and that paragraph [0053] taught away to use a display operated by two hands for a mobile phone. Therefore, according to the appellant, the skilled person would not be incited to combine two very distant embodiments of D2, one directed to a mobile phone having the gradient functions and being used with one hand exclusively, and one directed to a game device having the display of Figure 7 and being used with two hands. The board however holds that paragraph [0071], although it teaches that the arrangement is particularly well-suited for game playing, does not explicitly exclude mobile phones. Similarly, paragraph [0053], although it teaches that mobile phones are generally intended to be used with one hand, does not explicitly exclude that they may be used with two hands. Therefore, the board holds that the skilled person would not be prevented by the content of paragraphs [0053] and [0071] from solving the input time problem on a mobile phone by using a display applied to solve the same problem in a game device.

For these reasons, the board judges that the subject-matter of claim 1 does not involve an inventive step (Article 56 EPC), having regard to the combination of D2 and D3.

5. Auxiliary request 3

Claim 1 adds substantially to claim 1 of auxiliary request 1 the feature that first, second and third

states of the gradient can be detected and that the display functions associated with these states are a TV function for the first state and a character input keys function for the second and third states.

D2 discloses a device having alternative functionalities such as a PDA function, a cell phone function, or a video player function, switched by changing the gradient of the device (see [0085] and [0088]). It is obvious that a PDA or a cell function involves the display of character input keys. Moreover, although a mere display of television broadcast images is not disclosed per se in D2, the skilled person would readily contemplate to implement it since full screen display and video image display capabilities are already provided in the device.

The appellant argued that D2 did not disclose receiving television broadcast images and, as a consequence, was not adapted to display such images. The board is not convinced by this argument since a television broadcast receiving function is not explicitly defined in claim 1. Moreover, even if such a function were considered as being implicitly defined in claim 1, it would be already derivable from paragraph [0168] of D2 (see the wording: "...the device may sense signals, which are being broadcast...").

For these reasons, the board judges that the subject-matter of claim 1 does not involve an inventive step (Article 56 EPC), having regard to the combination of D2 and D3.

6. Auxiliary request 4

Claim 1 adds substantially to claim 1 of auxiliary request 2 the feature that the first and second input key display regions include character input keys.

D2 teaches in paragraph [0070] that the key display regions 154 in Figure 7 virtually represent the physical controls that would normally be placed on the particular device that the multifunctional device is emulating. In the case of a cell phone, the physical controls include the keypad, as clearly mentioned in the last sentence of paragraph [0069]. Therefore, D2 does disclose the provision of character input keys in the first and second input key display regions.

The appellant argued that paragraph [0053] of D2 would lead the skilled person away from using the display of Figure 7 for a mobile phone and that the display regions 154 in Figure 7 represent virtual controls and not character input keys. The board is however not convinced by this argument since paragraph [0053] does not explicitly exclude that a mobile phone may be operated with two hands and paragraph [0069] clearly discloses that the physical controls used on a mobile phone include the keypad, i.e character input keys.

For these reasons, the board judges that the subject-matter of claim 1 does not involve an inventive step (Article 56 EPC), having regard to the combination of D2 and D3.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:



K. Götz-Wein

A. Ritzka

Decision electronically authenticated