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**Datasheet for the decision
of 4 June 2021**

Case Number: T 1867/15 - 3.5.06

Application Number: 11187816.1

Publication Number: 2590047

IPC: G06F1/16, G06F3/01

Language of the proceedings: EN

Title of invention:

Portable device

Applicant:

Tobii AB

Headword:

Portable device/TOBII

Relevant legal provisions:

EPC Art. 56

RPBA 2020 Art. 13(2)

Keyword:

Inventive step - (no)

Late-filed request - admitted (no)

Decisions cited:

T 1294/16

Catchword:



Beschwerdekammern
Boards of Appeal
Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 1867/15 - 3.5.06

D E C I S I O N
of Technical Board of Appeal 3.5.06
of 4 June 2021

Appellant: Tobii AB
(Applicant) Box 743
182 17 Danderyd (SE)

Representative: Bradbury, Calum James
Tobii AB
Box 743
182 17 Danderyd (SE)

Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 9 March 2015
refusing European patent application No.
11187816.1 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman M. Müller
Members: A. Teale
A. Jimenez

Summary of Facts and Submissions

- I. The appeal lies from the decision, dispatched with reasons dated 9 March 2015, refusing European patent application No. 11 187 816.1 for lack of inventive step over the documents

D3: US 2009/0244820 A1 and

D4: US 2008/0284980 A1.

- II. Notice of appeal was filed on 5 May 2015, the appeal fee being paid on the same day. A statement of grounds of appeal was received on 7 July 2015.

It was requested that the decision under appeal be set aside and that a patent be granted on the basis of the "requests previously submitted to the Examining Division". On the face of it, this referred to claims 1-10 according to the main request as filed on 28 May 2014 (and re-filed with the grounds of appeal) and claims 1-8 resp. 1-7 according to auxiliary requests 1 to 3 as filed on 18 December 2014. However, none of auxiliary requests 1-3 was specifically mentioned in the grounds of appeal, nor did the grounds of appeal contain arguments relating to any of these auxiliary requests.

Also with the grounds of appeal, the appellant filed claims 1-10 according to a "Modified Main Request" on which basis a patent should be granted if the "Main Request" could not be allowed (see grounds of appeal, page 1, paragraph 3).

- III. In an annex to the summons to oral proceedings, the board expressed its preliminary opinion. Firstly, it

noted that the appellant had not, in its grounds of appeal, specifically addressed any of the auxiliary requests 1-3, concluded that the appellant appeared not to maintain these auxiliary requests on appeal and invited the appellant to clarify its requests. Secondly, it expressed the view that claim 1 of the main request and the "modified main request" lacked an inventive step over D3 in view of common general knowledge or D4, Article 56 EPC. The board also made reference to a new document,

D5: US 2009/0244012 A1,

in order to illustrate that the hinge portion, which any laptop computer necessarily provides, had been designed and produced in a variety of different forms.

- IV. In response to the summons, with a letter dated 7 January 2021, the appellant filed arguments. The appellant did not expressly request grant of a patent on the basis of the claims according to any of auxiliary request 1-3, but stated that it "reserve[d] the right to have these auxiliary requests considered in the oral proceedings, if they [were] still considered necessary after consideration of the present submissions."
- V. In the oral proceedings, therefore, the board gave the following summary, according to which the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claims 1-10 according to a main request or to a "modified main request", both filed with the statement of grounds of appeal. Alternatively, the appellant requested that the case be remitted to the examining division for further prosecution. The appellant

confirmed these as being its requests. Towards the end of the oral proceedings, the appellant also filed new claims 1-12 according to a further, auxiliary request.

VI. Claim 1 according to the main request reads as follows:

"1. A portable device comprising:

a first part (110), and

a second part (120) including an optical remote sensing system (300), the second part (120) being pivotably attached to the first part (110) via a hinge means (115) such that the portable device may be arranged in an open and a closed position respectively, the first and second parts (110; 120) having a respective essentially flat inner surface (111; 121) which when the portable device is arranged in the closed position are parallel and face one another,

the first part (110) comprising a recess (112a; 112b) which is arranged relative to a position of the optical remote sensing system (300) such that, in the closed position, the optical remote sensing system (300) is at least partly contained in the recess (112a; 112b),

the second essentially flat surface (121) of the second part (120) including a display unit (122) configured to present information to the user,

the first essentially flat surface (111) of the first part (110) including a keyboard configured to receive input commands from the user, and

the optical remote sensing system (300) being arranged such that a view angle (α) thereof has a fixed spatial relation to the display unit (122) irrespective of an orientation of the second part (120) relative to the first part (110), **characterized in that**

the optical remote sensing system (300) is configured to track a gaze of a user of the portable device when arranged in the open position, and

the recess (112a) is co-located with a first piece of the hinge means (115), and the optical remote sensing system (300) is disposed in a projection (125a) of the second part (120) where a second piece of the hinge means (115) is located, the first and second pieces representing a pivot axis of the hinge means (115) via which the first and second parts (110; 120) of the portable device are interconnected."

Claim 1 of the "modified main request" is identical to that of the main request except that "the projection (125a) of the second part (120)" in its last paragraph is now instead specified as a "projection (125a) integrated into the second part (120)".

Claim 1 of the auxiliary request is identical to claim 1 of the main request with the following paragraph added at its end:

"... wherein the optical remote sensing system is further arranged such that a view angle (α) of the optical remote sensing system (300) is between 50 degrees and 65 degrees relative to the display unit (122)."

VII. At the end of the oral proceedings, the chairman announced the decision of the board.

Reasons for the Decision

The invention

1. The invention relates to a mobile computer such as a laptop with an integrated tracker or recognizer for users' facial features (see the description, page 1, lines 3-6, and 8, and page 2, lines 5-9 and 21-24). The devices in question comprise "first" and "second" parts, typically a keyboard and a screen, respectively, connected by a hinge (see figures 1a, 1b, 3a and 3b). The hinge is composed of a first and a second "piece" which are located in the first and second parts of the mobile computer, respectively. In the embodiment now claimed, a camera (claimed as an "optical remote sensing system") is integrated in the "hinge means" (see the paragraph bridging pages 2 and 3) - or, more specifically, "disposed in a projection of"/ "integrated into the second part" of the mobile computer (see claim 1 of the main and modified main requests) -, so that the view angle of the camera and the screen ("display unit") form a fixed angle (α), and the "first part" provides a recess for receiving the camera in a closed position (see figures 1a, 1b and 5).

The prior art

2. D3 discloses a laptop in which the screen component provides a protruding camera which, in the closed position, is received by a recess in the keyboard component (see figures 1 and 3, nos. 22 and 41). In the preferred embodiment, the camera is placed above the screen, and the recess also accommodates a fingerprint sensor at the frontal edge of the keyboard part (see paragraphs 34 to 36). D3 however also discloses that

other "functional components" may be placed in the recess, such as a speaker or an LED (see paragraph 77). Moreover, D3 discloses an alternative embodiment in which the "functional component", the recess and the camera may be provided at the rear or lower ends of the keyboard and screen parts, i.e. towards the hinge (see paragraph 82).

3. D4 discloses an eye tracking system usable in many applications. Eye tracking *per se* is disclosed as being well-known in the art (see paragraphs 1, 2 and 20).

The issue to be decided

4. In the decision under appeal, the inventive step assessment is based on document D3. The appellant has not challenged this choice, and the board also agrees.
 - 4.1 In the decision, it was found that D3 discloses all features of claim 1 of the then main request except for the feature that the camera of D3 does not provide gaze tracking (see points 9 and 9.1 of the reasons), which, however, the examining division considered to be obvious in view of the fact that eye tracking of computer users was "very well known in the art", D4 being cited as an example (*loc. cit.*).
 - 4.2 The appellant argued that D3 - or any other available piece of prior art - did not disclose or suggest "integrating" the camera into the hinge (as regards D3, reference was made to the hinge sections 20a and 20b). Moreover, while it appreciated that D3 disclosed the placement of the camera below the screen (paragraph 82), it stressed that D3 did not disclose any particular advantage of that placement (see the grounds of appeal, page 2, paragraph 4, and page 4,

paragraph 1). From the perspective of D3, this placement appeared at best arbitrary. In fact, it was even undesirable, because the recess on the rear-end portion of the keyboard part of the laptop would become inaccessible to the user, which was particularly disadvantageous if the recess were to hold a fingerprint sensor (page 3, paragraph 3), but also suboptimal for other functional components such as a speaker or an LED, as the sound or light quality would suffer. In contrast, integration into the hinge was not arbitrary for the eye tracking according to the invention and had a specific advantage (page 3, paragraphs 3 to 6). As the appellant explained in writing (*loc. cit.*) and during oral proceedings, amongst these advantages were that the upward orientation of the camera reduced the possibility that the tracked eyes were occluded by the eye lids, that the placement of the gaze tracking camera - typically larger than a conventional webcam - in the hinge portion impinged as little as possible on the construction of the laptop, and that this placement meant shorter wires and thus faster response times, and also better cooling over other locations.

The board's opinion

5. The board shares the appellant's view that there is no significant difference between the feature of claim 1 of the main request according to which the camera "is disposed in a projection of the second part" or "is disposed in a projection integrated into the second part" (modified main request), at least not as regards inventive step. The following analysis therefore applies to these two requests alike.

6. Firstly, the appellant questioned whether D3 discloses a camera "disposed in a projection of the second part", suggesting that the projection as claimed would have to be construed as extending across the entire width of the laptop.

6.1 It must, however, be noted that the claims do not imply the lateral extent of that projection, and the board disagrees with this extent being implicit in the claim language.

6.2 Accordingly, the board finds that D3 does disclose a projection of the second part as claimed (see figures 3, 9 and 10, no. 17).

7. Secondly, the board agrees with the appellant that D3 does not give any specific reason why the camera should be placed "on the lower end of the second housing", i.e. below the screen (see D3, paragraph 82). The board also agrees that this placement may be less advantageous for certain "functional components" in the recess than for others. The board disagrees, however, that these disadvantages would make the functional components entirely inaccessible or unusable. A fingerprint sensor in the rear section of the keyboard may be less convenient to reach, but it remains reachable. An LED or a speaker will, depending on the size and shape of the recess, serve their purpose, even if the audio or light quality might suffer. Claim 1 of all requests does not specify any recess parameters that would make it incompatible with its use for any of these functional components. Therefore, the alternative disclosed in D3, paragraph 82, is a perfectly viable one.

8. The board has no occasion to doubt the appellant's arguments according to which this placement would be particularly advantageous for eye tracking cameras, even though it must be noted that the claims do not specify any pertinent property of the camera, the gaze tracking software or the recess; neither the size of the camera or the recess, nor the requirements regarding response times or heat dissipation are implied by the claim language. As far as the claims are concerned, the "optical remote sensing system" could be a conventional webcam such as that of D3 in combination with some standard gaze tracking software running on the laptop. Hence, as the placement is, in itself, disclosed in D3, such advantages must be considered to be mere bonus effects which do not weigh in favour of inventive step.

9. It must be noted, however, that D3 only discloses placing the camera "on the lower end portion of the second housing", but not specifically in the "second part (120) where a second piece of the hinge means (115) is located".
 - 9.1 It is therefore necessary to determine the scope of the claimed feature and, to that effect, the meaning of the "hinge means" as claimed. This was discussed with the appellant during the oral proceedings. The board came to the following conclusion.

 - 9.2 Although D3 discloses specific "hinge means" 20a and 20b, the hinge itself is not limited to these means.

 - 9.3 However, also the "hinge means (115)" as claimed and disclosed in the present application (see figures 2 and 4, no. 115) is composed of two pieces connecting the two parts of the laptop with each other. These

correspond closely to the hinge means 20a and 20b of D3. At the same time, however, claim 1 specifies a "recess (112a) co-located with the first piece of the hinge means" and a "projection [...] where a second piece of the hinge means is located". The recess being depicted in the centre of the laptop (see figure 2, no. 112a), however, - where also the skilled person would tend to place a camera - the skilled person would understand the claimed hinge to extend across the entire width of the laptop.

- 9.4 In view of this, the board takes the view that the skilled person would understand the hinge to be, fundamentally, the axis around which the two parts of the laptop rotate with respect to each other, irrespective of whether this axis is structurally supported across its entire length or only by short pins or other "means". This axis merely being a mathematical object, the "hinge" would in reality have to be considered as extending around it. The board notes, however, that there is no indication in the application of how the "pieces of the hinge" means would be distinguished from the rest of the screen or keyboard parts of the laptop.
- 9.5 In view of this, the board concludes that it is impossible to distinguish the placement of the camera "on the lower end portion of the second housing", as disclosed in D3, from its placement in a "second piece of the hinge means".
10. Accordingly, the board considers that D3 discloses all the features of claim 1 except that the "optical remote sensing system" provides for gaze tracking.

- 10.1 There being only one difference left, the issue of partial problems discussed in the board's summons and the appellant's disagreement with it, has become moot.
- 10.2 This difference was found in the decision under appeal to be a well-known - see e.g. D4 - and thus obvious application of the camera of D3 (see point 9.1 of the reasons). The appellant has not challenged this finding, and the board agrees.
- 10.3 The skilled person would, thus, arrive at the invention without inventive skill, Article 56 EPC.

Admittance of the auxiliary request

11. The auxiliary request is one which, according to Rule 13(2) RPBA 2020, shall, in principle, not be taken into account unless there are exceptional circumstances, which have been justified with cogent reasons by the party concerned.
- 11.1 The amendment specifies the specific angular orientation of the camera with respect to the part of the laptop in which it is integrated. The claimed angle would, so the appellant, make explicit that the camera placement was made in view of - and of particular advantage for - the claimed gaze tracking application and was not disclosed in any of the available prior art documents.
- 11.2 The board does not consider these reasons to be "cogent" or to establish exceptional circumstances within the meaning of Article 13(2) RPBA 2020.
- 11.3 The decision under appeal had found lack of inventive step over D3 in view of common general knowledge in the art; see D4. The appellant cannot wait and see whether

the board agrees or not with the decision under appeal before it decides whether to file an auxiliary request. This is, *inter alia*, behaviour by the appellant which Article 13(2) RPBA 2020 seeks to sanction.

11.4 The board also notes that it was clear from the board's preliminary opinion that it was minded to confirm the decision. Still, the appellant waited until the end of the discussion during the oral proceedings of the pending requests before deciding to file an amended set of claims.

11.5 Finally, the board notes that specific values of the angle α had not been originally claimed and, therefore, probably not been the subject of the European search. Thus, if the board were to admit this request, it would be necessary to remit this case at least for the examining division to ensure that its subject matter was exhaustively searched. This evidently is detrimental to procedural economy (see also T 1296/14, reasons 18.4).

11.6 Accordingly, the board decides not to admit the auxiliary request under Article 13(2) RPBA 2020.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



L. Stridde

M. Müller

Decision electronically authenticated