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Datasheet for the decision of 23 June 2015

Case Number: T 1924/13 - 3.4.03

Application Number: 08852459.0

Publication Number: 2212880

IPC: G09G3/34

Language of the proceedings: EN

Title of invention:
POWER SAVING TRANSMISSIVE DISPLAY

Applicant:
Koninklijke Philips N.V.

Headword:

Relevant legal provisions:
EPC Art. 84, 111(1), 123(2)

Keyword:
Amendments - added subject-matter (no)
Claims - clarity after amendment (yes)
Remittal to the department of first instance - (yes)

Decisions cited:

Catchword:

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Case Number: T 1924/13 - 3.4.03

D E C I S I O N
of Technical Board of Appeal 3.4.03
of 23 June 2015

Appellant: (Applicant)	Koninklijke Philips N.V. High Tech Campus 5 5656 AE Eindhoven (NL)
Representative:	Coops, Peter Philips Intellectual Property & Standards P.O. Box 220 5600 AE Eindhoven (NL)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 24 May 2013 refusing European patent application No. 08852459.0 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	G. Eliasson
Members:	S. Ward
	C. Heath

Summary of Facts and Submissions

I. The appeal is against the decision of the Examining Division refusing European patent application No. 08 852 459 on the ground that the claimed subject-matter did not meet the requirements of Article 123(2) EPC.

II. At the end of the oral proceedings the appellant requested that the decision under appeal be set aside and that a patent be granted based on the main request filed in oral proceedings (all other requests having been withdrawn).

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

"A system comprising
- a transmissive display (100), comprising a backlight (106) and a valve (110) for modulating light from the backlight to create an image, and comprising
- a viewer behaviour detection means, the viewer behaviour detection means comprising a detector (150, 152, 165, 160) for measuring physical parameters reflecting behaviour of a viewer and an analysis processor for analysing the data from the detector to provide a viewer behaviour measuring signal (I_usr) wherein the transmissive display comprises:
- a connector (198) for connection with the viewer behaviour detection means ((150, 152, 165), 160), and
- a power optimizer (120), having:
- a first input connection (C_i) to the viewer behaviour detection means for receiving from the viewer behaviour detection means the viewer behaviour measuring signal (I_usr), and

- a second input connection for receiving an input image signal (im) comprising input image drive values (I_in) for the valve, and
- a visibility estimator (133) for providing an estimated visibility (V), wherein
the power optimizer is arranged for
- analyzing the content of the input image (im), said analyzing comprising histogram analysis of the input image drive values, which histogram analysis comprises calculating a distance between at least two histogram lobes,
the power optimizer (120) further having:
- a first output (O_BL) for sending an optimal drive value (D_Lb) to the backlight (106) depending on the behaviour measuring signal (I_usr), the optimal drive value (D_Lb) for at least some values of the behaviour measuring signal (I_usr) providing a visible picture at reduced power,
wherein the power optimizer comprises:
- a drive value calculation unit (134) arranged by means of runable software and/or hardware circuitry to calculate a function (f) giving as a result the optimal drive value (D_Lb), dependent on a power (P) used by the display when the backlight is driven by a drive value and the estimated visibility (V) and to calculate, using the histogram analysis, a transformation (T) of the input image drive values (I_in) of the input image (im) into output image drive values (I_out) for driving pixels (111, 112) of the valve (11), said transformation (T) comprising a modification of the histogram for the image drive values, which transformation generates optimized valve drive signals for improved visibility,
the power optimizer further comprising:

- a second output connection (O_v) between the power optimizer (120) and the valve (110) for sending the output drive values (I_out) to the valve (110)."

Reasons for the Decision

1. The appeal is admissible.

2. Amendments: (Article 123(2) EPC)

2.1 The application was refused as the subject-matter of claim 1 on which the decision was based was found not to meet the requirements of Article 123(2) EPC.

The Board is not called upon to decide whether this finding was correct, as claim 1 of the present request has been substantially amended during the appeal procedure. In relation to Article 123(2) EPC, the question at issue is whether claim 1 of the current request, which is based on claims 1-3 as originally filed plus features taken from the description and drawings, contains subject-matter which extends beyond the content of the application as filed.

2.2 The feature that the viewer behaviour detection means comprises a detector and an analysis processor, as claimed, is set out, for example, on page 2, lines 17-30, and clearly shown in Fig. 1. No objection therefore arises under Article 123(2) EPC in relation to this feature.

2.3 Claim 2 as originally filed discloses a "visibility measure (V)", without defining how this measure is generated. Elsewhere (page 8, lines 1-2) the quantity V is referred to as the "estimated visibility", and Fig. 1 depicts the power optimizer 120 comprising a unit 133 which, according to the description (page 8, line 34), is a "visibility estimation unit 133". The skilled person would therefore be left in no doubt that, according to the disclosed invention, the estimated visibility (V) is provided by a visibility estimation unit (or "estimator") forming part of the power optimizer.

Although a particular manner of measuring visibility is disclosed in relation to Fig. 3, this is described as being "exemplary" (page 4, lines 26-27), and said to be based on one model of visibility among others (page 9, lines 24-30), and the skilled person would therefore understand that the disclosed invention is not limited to this specific example.

Hence, the Board is satisfied that "a visibility estimator (133) for providing an estimated visibility (V)" is disclosed in the application as filed.

2.4 Claim 1 also defines that the power optimizer performs "histogram analysis of the input image drive values, which histogram analysis comprises calculating a distance between at least two histogram lobes" and that the drive value calculation unit is arranged to calculate "using the histogram analysis" a transformation (T), "said transformation (T) comprising a modification of the histogram for the image drive values, which transformation generates optimized valve drive signals for improved visibility".

The general disclosure of a transformation (T) is found in claim 3 as originally filed, and the specific transformations disclosed in Fig. 2 involve identifying histogram lobes and the distances between them, and manipulating the lobes, for example by optimal repositioning or modifying the shape (page 8, lines 2-9; page 9, lines 21-23), to improve visibility (page 7, line 33 to page 8, line 4).

The particular disclosed transformations are explicitly referred to as "exemplary" (page 4, lines 23-24), and the Board considers that the application as filed would convey to the skilled person the use of a visibility improving transformation based on histogram modification following an analysis of the histogram lobes, without this transformation being limited to any specific modification discussed by way of example. The feature in question is therefore considered to have an adequate basis in the application as filed.

2.5 Claim 1 also includes the feature: "the optimal drive value (D_Lb) for at least some values of the behaviour measuring signal (I_usr) providing a visible picture at reduced power". This is essentially the underlying aim of the invention, as is apparent throughout the entire description, and most particularly on page 3, lines 4-8.

2.6 The paragraph defining the functions of the drive value calculation unit essentially recites (apart from the histogram aspects, which have been dealt with above) features drawn from claims 2 and 3 as originally filed. That these calculations take place not just in the power optimizer 120, but specifically in the drive value calculation unit 134 can be derived from Fig. 1 and page 9, lines 2-3.

2.7 In the light of the above, the Board considers that claim 1 meets the requirements of Article 123(2) EPC.

3. Article 84 EPC

3.1 The Board has also considered whether the subject-matter of claim 1 meets the requirements of Article 84 EPC, taking into account *inter alia* the "additional remarks" made in the contested decision (albeit in relation to subject-matter differing from present claim 1).

In relation to the term "estimated visibility", numerous measures of image visibility would be well-known to the skilled person (some relatively simple, others more complex taking into account e.g. ambient light conditions). Claim 1 requires that the visibility estimator be capable of providing one such measure, and the Board sees no reason why this feature should be considered unclear.

Moreover, the Board sees no valid reason to conclude that the claimed subject-matter represents merely a "result to be achieved". The aim of the invention is essentially to provide a display which, depending on the behaviour of the viewer, can reduce power while maintaining good visibility, and the features required for achieving this according to the invention are clearly set out in claim 1.

3.2 Claim 1 is therefore considered to satisfy the requirements of Article 84 EPC.

4. Further Procedure

4.1 Requirements for the grant of a patent other than those mentioned above, including *inter alia* novelty and inventive step, are not considered in the contested decision. Hence, in the present case, the Board considers it appropriate to exercise its discretionary power under Article 111(1) EPC to remit the case to the department of first instance for further prosecution on the basis of the main request filed in oral proceedings before the Board, thereby allowing the appellant to have these matters considered before two instances.

4.2 For the avoidance of any doubt, the Board has decided only that the subject-matter of claim 1 of the main request filed in oral proceedings before the Board satisfies the requirements of Articles 84 and 123(2) EPC. All other matters remain to be decided by the Examining Division.

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 for further prosecution based on the main request as filed during oral proceedings.

The Registrar: The Chairman:

S. Sánchez Chiquero G. Eliasson

Decision electronically authenticated