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**Datasheet for the decision
of 12 May 2022**

Case Number: T 0228/18 - 3.4.01

Application Number: 07716200.6

Publication Number: 1972183

IPC: H05B33/08

Language of the proceedings: EN

Title of invention:

POWER ALLOCATION METHODS FOR LIGHTING DEVICES HAVING MULTIPLE
SOURCE SPECTRUMS, AND APPARATUS EMPLOYING SAME

Patent Proprietor:

Signify North America Corporation

Opponent:

Helvar Oy Ab

Headword:

Power allocation methods / Signify North America

Relevant legal provisions:

EPC Art. 54

RPBA Art. 12(4)

RPBA 2020 Art. 13(2), 23

Keyword:

Novelty - (no)

Late-filed request - admitted (no)

Amendment after expiry of period in R. 100(2) EPC
communication - exceptional circumstances (no)



Beschwerdekammern

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Case Number: T 0228/18 - 3.4.01

D E C I S I O N
of Technical Board of Appeal 3.4.01
of 12 May 2022

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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 23 November
2017 revoking European patent No. 1972183
pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman P. Scriven
Members: P. Fontenay
C. Almberg

Summary of Facts and Submissions

- I. The patentee's appeal is against the Opposition Division's decision to revoke the European patent.

- II. The opposition relied on the grounds of lack of novelty and an inventive step (Article 100(a) EPC), and added subject-matter (Article 100(c) EPC).

- III. In their decision, the Opposition Division noted that the reapportionment feature in claim 1 of the main request (i.e. the patent as granted) had been isolated from the feature of the ratio of the prescribed powers remaining the same, contrary to Article 100(c) EPC. In other words, the Opposition Division found a non-allowable intermediate generalisation.

- IV. A similar objection (Article 123(2) EPC) applied to independent claim 6 of the first auxiliary request. The non-linear transformation in that claim referred to another aspect of the invention. It did not justify the generalisation resulting from the omission of the feature of the ratio of the prescribed powers remaining the same. Claim 1 of the first auxiliary request was also considered to be unclear (Article 84 EPC).

- V. The subject-matter of claim 1 according to the second auxiliary request was considered to lack novelty (Article 54 EPC) in view of document

D4: GB-A-2346004.

- VI. The subject-matter of claim 1 of the third auxiliary request was also considered to be obvious (Article 56 EPC) in view of document D4.
- VII. The Opposition Division relied on an embodiment of D4 in which means are provided to strengthen or weaken a displayed colour. Concretely, the embodiment illustrated in Figure 5 of D4 incorporated a D/D converter which, in combination with the DC power source, allowed the power supplied to the various branches of the lighting system to be modified according to a command signal. Since, in D4, only one branch of the circuit was activated at any one time, and since the intended change of brightness was to be performed without changing the colour, a change in the output of the D/D converter affected all branches of the circuits and respective LEDs in the same way. It followed that the operating powers were such that their ratios remained the same as those corresponding to the prescribed powers, i.e. those corresponding to the RGB signals defining the selected colour.
- VIII. On appeal, the patentee initially requested that the Opposition Division's decision be set aside and that the opposition be rejected (main request) or that the patent be maintained as amended on the basis of one of a first or second auxiliary request, filed for the first time with the statement of grounds of appeal. Claim 1 of the first auxiliary request differed from claim 1 as granted in that it incorporated the feature considered by the Opposition Division to be missing

from the latter. Claim 1 of the second auxiliary request did not include this feature but another additional feature regarding the presence of at least one communication port for receiving a lighting command specifying a prescribed operating power for each light source.

- IX. In response, the opponent requested that the appeal be dismissed, and voiced objections as to added subject-matter, and to lack of novelty and inventive step. Objections regarding lack of clarity of the second auxiliary request were also raised.
- X. In a communication setting out its preliminary opinion under Articles 15(1) and 17(2) RPBA 2020, the Board indicated that it was not persuaded by the patentee's submissions with regard to added subject-matter in relation to the main request. The feature of the reapportionment of the operating powers being such that the ratios of said powers are the same as those of the prescribed powers was consistently presented as a requirement of the invention (paragraphs [0011], [0014], [0120], [0124], [0125]). The envisaged possibility of a non-linear transformation of the prescribed powers prior to the actual operation of reapportionment served a different purpose, namely to correct for aberrations resulting from non-linear perception of brightness by the human visual system. This was to be distinguished from the reapportionment itself which followed the preliminary step, and could not justify leaving out the constancy of the ratios.

Moreover, the subject-matter of claim 1 of the main request appeared to be anticipated by the embodiment disclosed on page 21, lines 2-22 in document D4.

Claim 1 of the first auxiliary request was considered not to contravene the prohibition in Article 123(2) EPC. The added feature regarding the ratio of the actual operating powers remaining the same as the ratio of the prescribed operating powers was, however, not sufficient to distinguish the claimed subject-matter from the embodiment discussed on page 21, lines 2-22 with regard to Figure 5 in document D4.

With regard to the second auxiliary request, it was observed that it did not meet the criterion of convergence when compared with the independent claims of the main and first auxiliary requests. Its admissibility was thus questionable.

XI. In response to the Board's preliminary opinion, a new main and a new auxiliary request were filed, replacing the previous requests. The new main request corresponded to the first auxiliary request filed with the statement of grounds. The auxiliary request was an amended version of the second auxiliary request filed with the statement of grounds.

XII. The patentee submitted that the amendments to the new auxiliary request met all the criteria deriving from "Article 12(4) RPBA", and were thus admissible. The amendments introduced in claim 1 were not complex and, by the feature introduced about the ratio of the operating powers, addressed both the added subject-matter objection in the impugned decision and the non-

convergence objection in the preliminary opinion. The amended requests met the need for procedural economy by limiting the number of requests. The further limitation of claim 1 to an ambient illumination apparatus implied that document D4, which referred to a backlight display device in a portable electronic device, was no longer relevant for inventive step.

XIII. Claim 1 of the main request reads:

*An apparatus, comprising:
a lighting unit (100) comprising at least one first light source (104A) to generate first radiation having a first spectrum and at least one second light source (104B) to generate second radiation having a second spectrum different from the first spectrum, wherein the lighting unit (110) has a maximum power handling capability; and at least one controller (102) configured to allocate a first operating power for the at least one first light source (104A) and a second operating power for the at least one second light source (104B) characterised in that the apparatus is configured such that a maximum available operating power for each of the at least one first light source (104A) and the at least one second light source (104B) is equal to the maximum power handling capability of the lighting unit (100), the at least one controller (102) being further configured to reappportion prescribed operating powers for the at least one first and second light sources (104A; 104B) in response to a given*

lighting command, such that the ratio of the actual operating powers remains the same as the ratio of prescribed operating powers but the sum of the operating powers does not exceed the maximum power handling capability of the lighting unit (100).

XIV. Claim 1 of the auxiliary request reads:

*An ambient illumination apparatus, comprising:
a lighting unit (100) comprising at least one first light source (104A) to generate first radiation having a first spectrum and at least one second light source (104B) to generate second radiation having a second spectrum different from the first spectrum, wherein the lighting unit (110) has at least one communication port (120) for receiving a lighting command specifying a prescribed operating power for each lighting source (104A, 104B, 104C); a maximum power handling capability; and at least one controller (102) configured to allocate a first operating power for the at least one first light source (104A) and a second operating power for the at least one second light source (104B), wherein the apparatus is configured such that a maximum available operating power for each of the at least one first light source (104A) and the at least one second light source (104B) is equal to the maximum power handling capability of the lighting unit (100),*

the at least one controller (102) being further configured to reappportion prescribed operating powers for the at least one first and second light sources (104A; 104B) in response to the lighting command, such that the ratio of the actual operating powers remains the same as the ratio of prescribed operating powers, but the sum of the operating powers does not exceed the maximum power handling capability of the lighting unit (100).

XV. In its reply to the filing of the new requests, the opponent challenged the admissibility of the new auxiliary request, emphasising the applicable conditions of Article 13(2) RPBA 2020, which call for exceptional circumstances justified with cogent reasons. The opponent further observed that the patentee had been aware of all pertinent facts, including the preliminary opinion of the Board, since the end of November 2021. The new auxiliary request was filed, however, on 5 May 2022, that was one week only before the date set for the oral proceedings. There was no reason why this request could not have been filed much earlier.

XVI. During the oral proceedings before the Board, the patentee reiterated the view that the subject-matter of claim 1 of the main request was new, and emphasized that the characterising features of the claim had to be construed in combination. The analysis developed by the Board, in its preliminary opinion, appeared to rely on a rather synthetic interpretation of the claim that did

not take account of all the consequences of the terms used and the interactions between the recited features of the characterising portion.

The reapportionment that was performed according to the claimed invention implied that the prescribed powers defined by the command signal had to change. This was fundamentally different from the process disclosed in D4 that did not envisage any change of the instructions to be generated by the controller as a result of the received lighting command. The claim's wording made it clear that the prescribed powers were those corresponding to the received commands and did not refer to previous settings of the lighting system, as assumed by the opponent. In contrast, the operating powers in D4 corresponded to the prescribed powers. They were defined once and for all when the colour and its brightness had been set. There was also no possibility, in D4, of defining a maximum available operating power for each of the light sources that would be equal to the maximum power handling capability of the lighting unit as a whole.

Moreover, the claimed invention had to be construed in view of its primary purpose. The invention was all about power management and addressed problems regarding the thermal capabilities of lighting units: an aspect that was not considered in D4.

Concerning the admissibility of the auxiliary request, the patentee warned against a formalistic approach, emphasising that Article 13(2) RPBA 2020 had to be construed in view of its primary purpose, i.e. to avoid any excessive burden on the boards of appeal resulting from parties repeatedly filing back and forth requests. The rules of procedure should not be construed in a way

that would exclude subject-matter which would reflect a valuable contribution to the prior art, just because a request is filed late. It was further stressed that, in the present case, the number of requests had been reduced to two, that the amendments were straightforward and addressed both the objections relied upon in the impugned decision and the concerns of the Board as put forward in its provisional opinion. The filing of the auxiliary request was thus fully in line with the objectives which led the legislator to introduce the new rules of procedure.

Reasons for the Decision

Main request - Admission (Article 12(4) RPBA 2007)

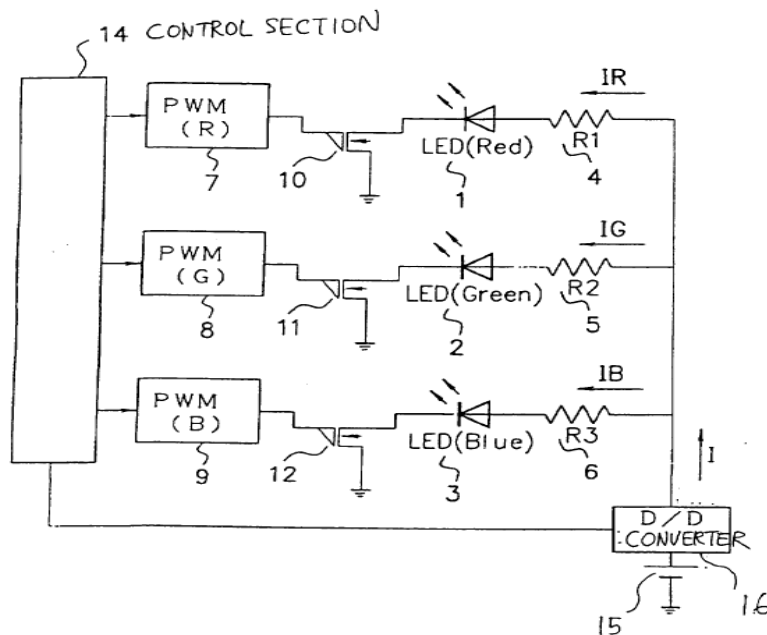
1. The main request corresponds to the first auxiliary request filed with the statement of grounds. It incorporates a feature specifying that the ratio of the actual operating powers remains the same as the ratio of prescribed operating powers. Claim 1 corresponds, in essence, to claim 1 of the second auxiliary request filed during the oral proceedings before the Opposition Division.

2. The main request was filed on appeal and addresses the objection under Article 123(2) EPC, relied upon by the Opposition Division, to reject the main request. It is a direct reaction to the decision. The fact that the previous main request, filed with the statement of grounds, was later withdrawn does not affect the admissibility of the new main request.

3. Since the main request relates to the case under appeal, and meets the requirements of Article 12(2) RPBA 2007, it is admitted into the appeal proceedings (Article 12(4) RPBA 2007 and Article 25(2) RPBA 2020).

Main request - Novelty (Article 54 EPC)

4. D4 discloses a backlight display device capable of developing a desired colour for display. It comprises a plurality of LEDs of different colours, a power source for supplying power to the various LEDs, and a plurality of pulse width modulator (PWM) circuits, each associated with one of the plurality of LEDs. A control unit is provided. It controls the average current flowing through each LED by appropriate control of the PWM circuits (page 8, lines 16-28), thus allowing the user to choose any colour according to his/her liking (page 9, lines 1-6). Concretely, the average currents are determined by the duration of the duty cycles of the signals generated by the PWM circuits.
5. While it is primarily intended, in D4, to change colours while keeping the same level of brightness, changes in intensity are also envisaged (figure 5; page 21, lines 2-22). This is achieved by means of a D/D converter in combination with the DC power source. The control section, which controls the duty cycles of each PWM circuit, also delivers a control signal to the D/D converter in order to raise or lower its output voltage, thus directly affecting the voltage across and current through the various branches and LEDs in the circuit.



D4, Figure 5

6. It was not disputed that the lighting device of D4 discloses all the features of the preamble of claim 1.
7. In the absence of any specific definition in the claim regarding the maximum power handling capability of the lighting unit, said terms should be given their normal meaning in the language, that is as referring to the maximum power that the DC power source, D/D converter and control unit can deliver in combination without damages to the unit. It corresponds to the physical limits of the circuit as defined by the DC power, the D/D converter, and the load present in the circuit or, alternatively, to a limit set by the control unit via the control signal it delivers to the D/D converter.
8. According to D4, the control unit (14) controls the various PWM circuits (7, 8, and 9) in such a way that only one LED is activated at a time (figures 4A, 4B and 4C). It follows that all the current (and power)

generated by the DC source in association with the D/D converter flows through said one LED only.

9. The apparatus according to figure 5 is thus configured such that a maximum available operating power for each of the three LEDs is equal to the maximum power handling capability of the lighting unit.
10. The controller of D4 is further configured to reapportion prescribed operating powers for the three LEDs in response to a given lighting command.
11. It is underlined that the initial state, the brightness of which is to be changed (raised or lowered) in the context of Figure 5 is defined by both its colour and a certain predetermined brightness. Both parameters are defined by the relative prescribed durations of the duty cycles of the various PWM signals generated on each branch of the circuit and the prescribed powers applied to each branch. Each of said prescribed powers depends on the voltage delivered by the D/D converter and the resistance present on the branch. The fact that, according to a preferred embodiment in D4, the resistances R1, R2, and R3 are the same, thus leading to prescribed powers being equal for the three LEDs, does not affect this.
12. In order to modify (raise or lower) the brightness of the light, a control signal generated by the control unit is delivered to the D/D converter to modify its output. The duty cycles of the signals delivered by the various PWM circuits are, however, kept the same (page 21, lines 2-5). This guarantees that the colour generated by the lighting device will, after the change in brightness, be the same as before.

13. Since only one LED is active at a time, the whole available power flows through one LED only. As a consequence of the configuration disclosed in figure 5, all branches of the circuit will be affected in the same way. As a further consequence, the ratio of the actual operating powers flowing through the three LEDs remains the same as the ratio of the prescribed powers before the change in brightness took place.
14. In the context of D4, the sum of the powers is always equal to the power through the sole activated LED. By definition of the maximum handling power capability of the lighting device, it cannot exceed this limit.
15. The patentee's view that the claim's wording implied that prescribed powers be first determined in view of a control signal being received before being modified and reapportioned while taking due account of a maximum power handling capability of the lighting apparatus is not persuasive. The Board stresses, in this respect, that the claim fails to define any relationship between the prescribed powers and the lighting command signal. The view that the apparatus according to claim 1 reinterprets the instructions resulting from the received lighting command is simply not supported by the claim's wording. Hence, it cannot define a distinction over the circuit disclosed in D4.
16. In the absence of any clearly identifiable effect regarding the thermal capability of the claimed lighting device, no difference between the claimed subject-matter and the disclosure in D4 can be identified. The subject-matter of claim 1 is thus not new in view of D4 (Article 54 EPC).

Auxiliary request - Admission (Article 13(2) RPBA 2020)

17. The Board acknowledges that the amendments in claim 1 of the auxiliary request tend to solve, at least on a *prima facie* basis, the issues raised in both the impugned decision and the provisional opinion.
18. The above findings are, however, not sufficient to decide favourably on the admissibility of the new auxiliary request.
19. The auxiliary request was filed in reaction to the preliminary opinion issued by the Board. Its admission depends on the conditions set out in Article 13(2) RPBA 2020 which reads:

Any amendment to a party's appeal case made [...] after notification of a summons to oral proceedings shall, in principle, not be taken into account unless there are exceptional circumstances, which have been justified with cogent reasons by the party concerned.
20. The circumstances referred to by the appellant do not constitute exceptional circumstances, but relate, on the contrary, to ordinary aspects of the appeal proceedings.
21. There is nothing exceptional in the Board endorsing, in its provisional opinion, the position of the Opposition Division with regard to added subject-matter and, to a large extent, their view regarding novelty. Similarly, there is nothing exceptional in a Board relying on the criterion of convergence to question the admissibility of an auxiliary request.

22. The rules of procedure are binding upon the boards of appeal (Article 23 RPBA 2020). Regardless of how formalistic their application might appear for the parties affected, a board of appeal has no discretion as to whether or not a rule is to be applied insofar as its application does not lead to a situation which would be incompatible with the spirit and purpose of the Convention. No such situation is at hand in the present case.
23. While a primary purpose of the Convention may be seen in rewarding applicants for technical contributions by the grant of a patent, or by maintaining patents after opposition proceedings if they meet the requirements of the EPC, this is to be achieved within a certain procedural framework that guarantees streamlined proceedings.
24. Under the circumstances, the patentee had ample opportunity to consider fallback positions at earlier stages of the opposition proceedings and also when filing the statement of grounds of appeal. The amendment in claim 1 of the auxiliary request pertaining to the designation of the subject-matter of the claimed invention, i.e. to an ambient illumination apparatus, is substantial. It affects the very nature of the claimed subject-matter and may require a complete reassessment of the issues to be settled including a possible re-consideration of the suitability of document D4 as the closest prior art. Admission of the auxiliary request at this late stage of the appeal proceedings would be tantamount to request that the Board remit the case to the Opposition Division, thus leading to further delays before a final decision be reached, or that it carry out a complete examination of the new issues itself. The decision not

to admit the auxiliary request is thus in line with the spirit and purpose of the Convention which entrusted opposition divisions with the examination of oppositions.

25. The auxiliary request is not admitted into the appeal proceedings (Article 13(2) RPBA 2020).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:



D. Meyfarth

P. Scriven

Decision electronically authenticated