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**Datasheet for the decision  
of 21 November 2013**

**Case Number:** T 2253/09 - 3.5.04

**Application Number:** 06019787.8

**Publication Number:** 1770692

**IPC:** G11B7/007, G11B7/24

**Language of the proceedings:** EN

**Title of invention:**

Optical recording medium, recording/reproduction apparatus,  
and recording/reproduction method

**Applicant:**

Sony Corporation

**Headword:**

**Relevant legal provisions:**

EPC 1973 Art. 56

**Keyword:**

Inventive step - (no)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern  
Boards of Appeal  
Chambres de recours**

European Patent Office  
D-80298 MUNICH  
GERMANY  
Tel. +49 (0) 89 2399-0  
Fax +49 (0) 89 2399-4465

Case Number: T 2253/09 - 3.5.04

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.04**  
**of 21 November 2013**

**Appellant:** Sony Corporation  
(Applicant) 7-35, Kitashinagawa 6-chome,  
Shinagawa-ku  
Tokyo (JP)

**Representative:** Melzer, Wolfgang  
Mitscherlich & Partner  
Patent- und Rechtsanwälte  
Postfach 33 06 09  
80066 München (DE)

**Decision under appeal:** **Decision of the Examining Division of the  
European Patent Office posted on 9 July 2009  
refusing European patent application No.  
06019787.8 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chairman:** F. Edlinger  
**Members:** M. Paci  
T. Karamanli

## **Summary of Facts and Submissions**

- I. The appeal is against the decision of the examining division refusing European patent application No. 06019787.8 published as EP 1770692 A2.
  
- II. In the decision under appeal the following prior-art documents were cited:  
  
D1: US 6,240,055 B1 and  
D2: EP 1205923 A2.
  
- III. The application was refused on the grounds that the subject-matter of claims 1 to 9 did not involve an inventive step (Article 56 EPC) in view of D1 and the skilled person's common general knowledge.
  
- IV. With the statement of grounds of appeal the appellant filed amended claims according to a main, first and second auxiliary requests, replacing all claims previously on file.
  
- V. In a communication under Article 15(1) RPBA annexed to the summons to oral proceedings the board expressed the preliminary opinion that the subject-matter of claim 1 according to each request did not involve an inventive step when starting from either D1 or D2. The board further stated that D2 might be regarded as the closest prior art for the subject-matter of claim 1 according to the first and second auxiliary requests because D2 disclosed more features of claim 1 than D1, i.e. several recording layers and an adjustment recording area at a predetermined position on each of the recording layers.

- VI. In a letter of reply dated 21 October 2013, the appellant filed amended claims according to a main request and first to third auxiliary requests, replacing all claims previously on file. The claims of the new main request were identical to those of the previous first auxiliary request.
- VII. Oral proceedings were held before the board on 21 November 2013.
- VIII. The appellant's final requests are that the decision under appeal be set aside and that a patent be granted on the basis of the claims according to the main request or one of the first, second or third auxiliary requests filed with the letter of 21 October 2013.
- IX. Claim 1 according to the appellant's **main request** reads as follows:

"An optical recording medium (1) provided with two or more recording layers (20, 21, ...), the optical recording medium comprising:

an adjustment data recording area for recording therein adjustment data used for adjusting focus or spherical aberration of laser light used for recording/reproduction, the adjustment data recording area being a pre-write area disposed at a predetermined position on each of the two or more recording layers; and

a pre-write area flag recording area in each of the two or more recording layers for recording therein a pre-write area flag only indicating whether or not the adjustment data has been recorded in the adjustment data recording area in each of the two or more recording layers, said pre-write area flag enabling a reproducing apparatus to immediately perform adjustment

of focus or spherical aberration by reproducing the adjustment data recording area."

- X. Claim 1 according to the appellant's **first auxiliary request** adds the following feature at the end of claim 1 of the main request:

" , wherein the pre-write area flag to be recorded in the pre-write area flag recording area comprises one bit for each recording layer so that a value of the one bit indicates whether or not the adjustment data has been recorded."

- XI. Claim 1 according to the appellant's **second auxiliary request** has the same wording as claim 1 of the first auxiliary request except for its last feature (the differences with claim 1 according to the **first auxiliary request** are either underlined (additions) or struck-out (deletions)):

"wherein the pre-write area flag to be recorded in the pre-write area flag recording area comprises only one bit for each recording layer so that a value of the one bit indicates whether or not the adjustment data has been recorded for the respective recording layer."

- XII. Claim 1 according to the appellant's **third auxiliary request** has the same wording as claim 1 of the first auxiliary request except for its last feature (the differences with claim 1 according to the **first auxiliary request** are either underlined (additions) or struck-out (deletions)):

"wherein the pre-write area flag to be recorded in the pre-write area flag recording area comprises only one bit for each recording layer so that a value of "1"

of the one bit indicates ~~whether or not~~ that the adjustment data has been recorded for the respective recording layer and a value of "0" of the one bit indicates that no adjustment data has been recorded in the respective recording layer."

XIII. The examining division's reasoning in the decision under appeal can be summarised as follows:

D1 discloses an optical recording medium with a single recording layer comprising an adjustment data recording area for recording adjustment data used for adjusting the focus of the laser beam. The adjustment data recording area is located at a random position.

Flags are commonly used in optical recording media to indicate whether a certain type of data is recorded. This enables a faster determination of whether adjustment data is recorded or not. It is a constant aim to optimize the efficiency of all the steps involved in recording/reproduction of optical media. The skilled person would thus naturally consider using a flag to indicate whether or not data has been recorded in the adjustment data recording area. Hence, the medium of claim 1 does not involve an inventive step (Article 56 EPC) in view of D1 and the skilled person's common general knowledge.

XIV. The appellant's arguments insofar as they are relevant to the present decision can be summarised as follows:

(A) Main request

D2, which the board regards as the closest prior art for the subject-matter of claim 1 of the present main request, discloses an optical recording medium having

multiple recording layers and a spherical aberration adjustment data recording area located at a predetermined location on each recording layer.

D2, however, does not disclose any flag for indicating whether adjustment data has been recorded in an adjustment data recording area.

Moreover, D2 neither mentions nor solves the problem of the present invention, i.e. to enable a faster and more error-resilient determination of whether adjustment data has been recorded on the medium.

The skilled person would have no hint from D2 of using flags to solve this problem. Furthermore, even assuming that the skilled person nevertheless thought of using flags, he/she would still not have arrived at the particular arrangement of the flags on multiple layers set out in claim 1. According to this arrangement, each recording layer comprises a dedicated area for recording a flag indicating for each of the recording layers whether adjustment data has been recorded therein. Moreover, this flag is repeated on each of the recording layers. This particular arrangement has several advantages: it enables faster access to the information whether adjustment data has been recorded on all layers, and it provides redundancy of information in case the flag cannot be read on one recording layer.

For these reasons, the subject-matter of claim 1 involves an inventive step in view of D2 and the skilled person's common general knowledge.

(B) First to third auxiliary requests

Claim 1 according to the first to third auxiliary requests further specifies the structure of the flags, in particular by making explicit that each flag comprises one bit for each recording layer in order to indicate whether adjustment data has been recorded.

These additional features thus move the claimed subject-matter further away from the disclosure of D2.

### **Reasons for the Decision**

1. The appeal is admissible.

*Main request - inventive step (Article 56 EPC 1973)*

2. Closest prior art

In the Reasons for the decision under appeal, prior-art document D1 was held to be the closest prior art for the subject-matter of claim 1 then on file. Prior-art document D2 was also cited in the decision, but not discussed further.

In its communication under Article 15(1) RPBA, the board informed the appellant that D2, rather than D1, might be regarded as the closest prior art for the subject-matter of claim 1 according to the first auxiliary request filed with the statement of grounds of appeal because D2 disclosed more features of claim 1 than D1 (see point V *supra*).

Claim 1 of the present main request is identical to claim 1 of the first auxiliary request filed with the



statement of grounds of appeal. Therefore the discussion of inventive step during the oral proceedings before the board mainly focused on D2.

The appellant did not dispute that D2 could be regarded as the closest prior art for the subject-matter of claim 1 according to the present main request and that it disclosed the following features of claim 1:

An optical recording medium (see figures 1A and 1B) provided with two or more recording layers (see column 10, lines 11 and 12), the optical recording medium comprising an adjustment data recording area (see "particular region (2)" in figures 1A, 6 and 7) for recording therein adjustment data (see "particular pattern" shown in figures 2 and 8) used for adjusting focus or spherical aberration of laser light used for recording/reproduction (see column 10, lines 18 to 24), the adjustment data recording area being a pre-write area placed at a predetermined position (see column 12, lines 27 to 45) on each of the two or more recording layers (see column 13, lines 15 to 19).

3. Distinguishing features

The medium of claim 1 thus differs from that of D2 by the following features:

A pre-write area flag recording area in each of the two or more recording layers for recording therein a pre-write area flag only indicating whether or not the adjustment data has been recorded in the adjustment data recording area in each of the two or more recording layers, said pre-write area flag enabling a reproducing apparatus to immediately perform adjustment

of focus or spherical aberration by reproducing the adjustment data recording area.

4. Objective technical problem

The appellant submitted that in view of the technical effect achieved by these distinguishing features, the objective technical problem solved should be defined as being to enable a faster and more error-resilient determination of whether adjustment data has been recorded on the medium.

The board has no objection to this formulation of the objective technical problem.

5. Obviousness

The board concurs with the examining division that it is a constant aim of the skilled person in the technical field of optical recording media to optimise the efficiency of all the steps involved in recording to or reproducing from an optical recording medium, in particular to reduce the time required for recording or reproducing data.

Hence the appellant's argument that the skilled person would not have been aware that a faster determination of whether adjustment data has been recorded on the medium was desirable, because it was not mentioned in D2, and thus that he/she would not have tried to solve it, did not convince the board.

Before the priority date of the present application, flags were already commonly used on optical recording media to indicate whether a certain type of data is recorded, or to indicate whether a certain area has

been recorded on the medium. Such flags had (1) the known advantage of enabling a faster determination of whether said data has been recorded and (2) the known disadvantage of requiring extra space and that the updating of flags costs time and resources. The appellant did not dispute these facts regarding flags.

The board thus considers that, in view of the skilled person's common general knowledge, it would have been a common design choice to consider the use of flags in the medium of D2 to indicate whether adjustment data has been recorded in the adjustment data recording areas on the recording layers, in order to achieve the known advantage associated with the use of flags, i.e. a faster determination of whether said data has been recorded.

However, the presence or absence of inventive step does not hinge on the mere use of flags (which the board regards as obvious), but on whether the skilled person would have arrived at the particular arrangement of flags set out in claim 1.

According to this arrangement, a flag on any recording layer comprises information regarding the presence/absence of adjustment data on each of the recording layers. Moreover, this flag is repeated on each of the recording layers.

The appellant argued that the skilled person would not have arrived without inventive step at this particular arrangement which has the advantages of enabling faster access to the information whether adjustment data has been recorded on **all** layers by reading a single flag on a single recording layer, and of providing redundancy

of information in case the flag cannot be read on one recording layer.

The board is not convinced by the appellant's above arguments for the following reasons.

In D2, each of the several recording layers comprises an adjustment data recording area for recording therein adjustment data. A skilled person would be aware that one bit is sufficient for indicating whether adjustment data is present or absent in one recording layer. Thus, in case of an optical recording medium having N recording layers, it would require N bits to provide this information for all N layers. The skilled person would then inevitably face the question of where these N bits should be recorded. Since the purpose of these bits is that they can be read quickly as soon as the optical recording medium is inserted into a recording/reproducing apparatus, it would make sense to record them together as one N-bit flag (the "pre-write area flag" of claim 1) in a predetermined area (the "pre-write area flag recording area" of claim 1) on the first recording layer of the medium to be accessed upon insertion of the medium into the apparatus. For multilayer optical discs, it is typically the lowest recording layer L0.

As to the remaining feature that this (N-bit) flag is recorded in each recording layer, the application does not state which purpose this feature serves. The appellant submitted that it adds redundancy in case a flag has not been recorded properly by allowing the flag to be read from any recording layer.

The board considers that recording the same data several times at different locations on an optical

recording medium is a well-known technique for mitigating the risk that surface defects might render data unreadable in an area of the medium. Hence the repetition of the flag on each of the recording layers would be an obvious measure for this purpose.

6. Conclusion on the main request

For the above reasons, the board considers that the optical recording medium of claim 1 according to the main request does not involve an inventive step in view of D2 and the skilled person's common general knowledge.

Since the subject-matter of claim 1 does not involve an inventive step (Article 56 EPC 1973), the appellant's main request is not allowable.

*First to third auxiliary requests - inventive step (Article 56 EPC 1973)*

7. Claim 1 according to the first to third auxiliary requests differs from claim 1 according to the main request essentially by the following additional features:

- the pre-write area flag comprises one bit for each recording layer (first auxiliary request);
- the pre-write area flag comprises **only** one bit for each recording layer (second auxiliary request);
- the bit of the pre-write area flag for each recording layer has a value of "1" if adjustment data has been recorded and "0" if no adjustment data has been recorded (third auxiliary request).

As explained *supra* regarding claim 1 of the main request, it would be obvious when starting from the

optical recording medium of D2, to use a flag comprising one bit for each recording layer in order to indicate whether adjustment data has been recorded in the respective recording layer. The additional features of claim 1 according to the first to third auxiliary requests are merely a straightforward implementation of such a flag.

8. Conclusion on the first to third auxiliary requests

For the above reasons, the board considers that the optical recording medium of claim 1 according to each of the first to third auxiliary requests does not involve an inventive step in view of D2 and the skilled person's common general knowledge.

Since the subject-matter of claim 1 does not involve an inventive step (Article 56 EPC 1973), the appellant's first to third auxiliary requests are not allowable.

*Conclusion*

9. Since none of the appellant's requests is allowable, the appeal must be dismissed.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:



L. Fernández Gómez

F. Edlinger

Decision electronically authenticated