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**Datasheet for the decision
of 12 March 2026**

Case Number: T 1384/24 - 3.5.07

Application Number: 18926409.6

Publication Number: 3805911

IPC: G06F11/14

Language of the proceedings: EN

Title of invention:

Method, device and system for acquiring link negotiation information of optical module

Applicant:

HUAWEI TECHNOLOGIES CO., LTD.

Headword:

Link negotiation information/HUAWEI TECHNOLOGIES CO., LTD.

Relevant legal provisions:

EPC Art. 84

Keyword:

Claims - clarity - main request (no) - clarity - auxiliary request (no)
Amendment after notification of Art. 15(1) RPBA communication (yes)



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

Case Number: T 1384/24 - 3.5.07

D E C I S I O N
of Technical Board of Appeal 3.5.07
of 12 March 2026

Appellant:
(Applicant)

HUAWEI TECHNOLOGIES CO., LTD.
Huawei Administration Building
Bantian, Longgang District
Shenzhen, Guangdong 518129 (CN)

Representative:

Goddar, Heinz J.
Boehmert & Boehmert
Anwaltspartnerschaft mbB
Pettenkoferstrasse 22
80336 München (DE)

Decision under appeal:

**Decision of the Examining Division of the
European Patent Office posted on 24 June 2024
refusing European patent application
No. 18926409.6 pursuant to Article 97(2) EPC**

Composition of the Board:

Chair M. Jaedicke
Members: P. San-Bento Furtado
E. Mille

Summary of Facts and Submissions

- I. The appeal lies from the decision of the examining division to refuse European patent application No. 18926409.6, which was filed as the international application No. PCT/CN2018/095831 and published in accordance with Article 153(4) EPC as EP 3805911.
- II. The decision under appeal was given in writing by means of a decision "according to the state of the file", using EPO Form 2061, referring to the communication of 15 May 2024.
- III. The application was refused for lack of clarity of claim 1 of each of the main request and auxiliary requests I to IV.
- IV. In the statement of grounds of appeal, the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request or the first or second auxiliary request filed with the statement of grounds of appeal. The first auxiliary request corresponded to refused auxiliary request III with a minor amendment to claim 9.
- V. In a communication accompanying the summons to oral proceedings, the board expressed its preliminary opinion that claim 1 of neither the main request nor the first auxiliary request fulfilled the requirements of Article 84 EPC. The second auxiliary request was *prima facie* not allowable and should not be admitted under Article 12(4) and (6) RPBA.
- VI. With a letter of reply, the appellant replaced the main request with the first auxiliary request, and filed a

new first auxiliary request based on the new main request. The appellant's final request was that the decision under appeal be set aside and that a patent be granted on the basis of the new main request or, in the alternative, the new first auxiliary request.

VII. In response to the appellant's written submission withdrawing its request for oral proceedings and requesting a decision based on the state of the file, the board cancelled the oral proceedings.

VIII. Claim 1 of the new main request reads as follows:

"An optical module (102, 202, 204, 302, 9012, 9022) link negotiation information obtaining method, wherein the method comprises:

obtaining information of an optical module readable partition;

when the partition corresponding to the obtained information of the optical module (102, 202, 204, 302, 9012, 9022) readable partition is different from a partition that stores link negotiation information and that is in the optical module (102, 202, 204, 302, 9012, 9022), and a recorded quantity of optical module link negotiation information obtaining times does not reach a preset threshold, modifying the information of the optical module readable partition into information of the partition that stores the link negotiation information and that is in the optical module; and

re-obtaining the information of the optical module readable partition, and when the partition corresponding to the obtained information of the optical module readable partition is the same as the partition that stores the link negotiation information and that is in the optical module (102, 202, 204, 302, 9012, 9022), obtaining optical module link negotiation information;

wherein the optical module (102, 202, 204, 302, 9012, 9022) is a mini serial attached small computer system interface, SAS, optical module storing partition information of a plurality of partitions, wherein information used for link negotiation is stored in a first partition of the plurality of partitions, and wherein the method is performed by a micro controller unit, MCU, adapted to configure a page select byte field of the optical module by using an inter-integrated circuit, I2C, protocol, to select a page partition and to read information of the partition."

- IX. Claim 1 of the new auxiliary request differs from claim 1 of the new main request in that the text "wherein information used for link negotiation is stored in a first partition of the plurality of partitions" has been replaced with
- "wherein the link negotiation information is stored in a first partition of the plurality of partitions"
- and in that the following text has been added at the end of the claim:
- ", and
- wherein the obtaining information of the optical module readable partition comprises obtaining content corresponding to a page select byte control byte of the optical module (102, 202, 204, 302, 9012, 9022), wherein the page select byte control byte records information about a selected partition".

Reasons for the Decision

Application

1. A small computer system interface (SCSI) is an independent-processor standard for a system-level interface used between a computer and an intelligent device (e.g. a hard disk, a floppy drive, an optical drive, a printer or a scanner). A serial attached SCSI (SAS) interface is a new type of interface that was developed after the parallel SCSI interface. It uses a serial technology to achieve a higher transmission speed (paragraphs [0002] and [0003]).

- 1.1 The invention concerns the problem of obtaining "link negotiation information" in an "optical module" (paragraph [0001]). An optical module connects a device (for example a control device or a storage device) to an SAS cable. As depicted in Figure 1A reproduced below, two devices, for example a control device and a storage device, are connected by a micro control unit (MCU) and an optical module at each end of an SAS cable. These implement communication between the respective devices connected by the SAS cable (paragraph [0066], Figure 1A).

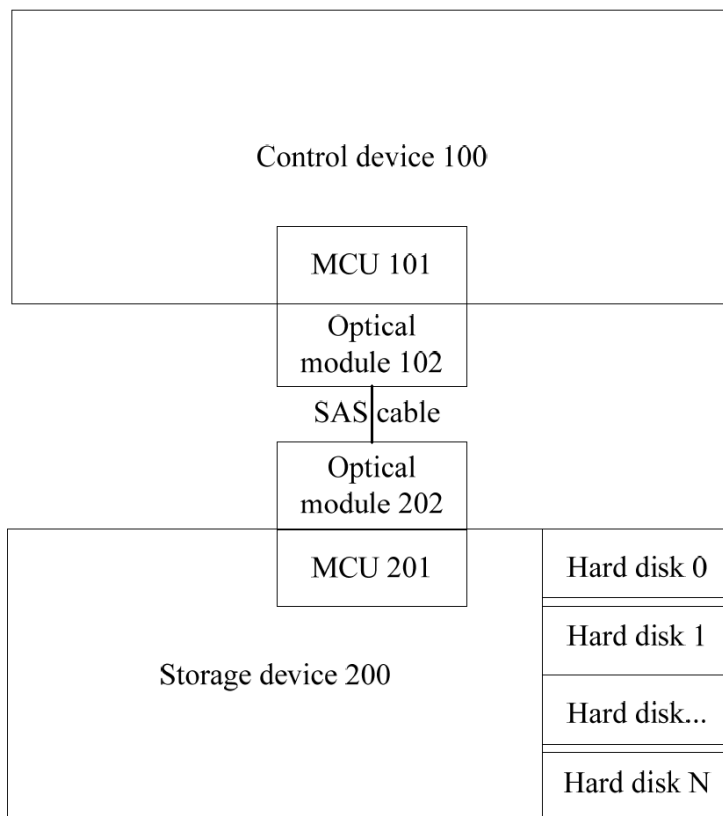


Figure 1A

- 1.2 With reference to Figure 1A, the application explains that after the optical module 102 accesses the control device 100, the MCU 101 in the control device 100 can detect access of the optical module and start a driving and management process to establish a connection to the optical module 102 (paragraph [0067]). In the driving and management process of the optical module, the MCU obtains the optical module link negotiation information to perform link negotiation (paragraph [0075]). The link negotiation information may comprise a connector type, a photoelectric parameter, multi-mode or single-mode, a voltage, and a transmit offset (paragraphs [0013] and [0080]).
- 1.3 Optionally, the optical module is a mini SAS optical module. The optical module stores partition information of four partitions (page 0 to page 3). Information used

for link negotiation is stored in a page 0 partition. The page 1 partition to the page 3 partition are mainly information spreading parts, and store an application code, a user-defined interval, and the like. In specific implementations, the MCU can read/write and configure a page select byte field by using an inter-integrated circuit, I2C, protocol, and select a page partition and read information of the partition (paragraphs [0017] and [0076]).

New main request

2. Claim 1 specifies an optical module link negotiation information obtaining method, wherein the method comprises (same itemisation as in the board's communication):
 - f1 obtaining information of an optical module readable partition;
 - f2 when the partition corresponding to the obtained information of the optical module readable partition is different from a partition that stores link negotiation information and that is in the optical module, and
 - f2.1 a recorded quantity of optical module link negotiation information obtaining times does not reach a preset threshold,
 - f2.2 modifying the information of the optical module readable partition into information of the partition that stores the link negotiation information and that is in the optical module; and
 - f3 re-obtaining the information of the optical module readable partition, and
 - f3.1 when the partition corresponding to the obtained information of the optical module readable partition is the same as the partition that

stores the link negotiation information and that is in the optical module,

f3.2 obtaining optical module link negotiation information;

f5 wherein the optical module is a mini serial attached small computer system interface, SAS, optical module storing partition information of a plurality of partitions, wherein information used for link negotiation is stored in a first partition of the plurality of partitions, and wherein

f6 the method is performed by a micro controller unit, MCU, adapted to configure a page select byte field of the optical module by using an inter-integrated circuit, I2C, protocol, to select a page partition and to read information of the partition.

3. *Clarity*

3.1 Claim 1 specifies an "optical module link negotiation information obtaining method" which is "performed by a micro controller unit, MCU, adapted to configure a page select byte field of the optical module by using an inter-integrated circuit, I2C, protocol, to select a page partition and to read information of the partition" (feature f6).

The claimed method comprises the steps of obtaining "information of an optical module readable partition" (step f1), modifying the "information of the optical module readable partition" (step f2.2), which is performed only if two conditions are met (features f2 and f2.1), and re-obtaining the "information of the optical module readable partition" (step f3).

However, it is unclear why, in step f3, the MCU re-obtains the "information of the optical module readable partition" after modifying it to a specific value in step f2.2.

3.2 The appellant argued that these steps were clear in the claimed context of a method performed by an MCU configured to use the I2C protocol. The claim explicitly specified both the technical means and the functional operation by which the "information of an optical module readable partition" was obtained. For the skilled person, features f5 and f6 unambiguously indicated the standard mechanisms by which partition information could be obtained from SAS optical modules via I2C page selection and data readout. Since the method used the I2C protocol to set the page select byte field of the optical module, select a page partition, and read information from that partition, it was clear that the initial "obtaining" step corresponded to reading the currently selected page's partition information via I2C, and the later "re-obtaining" step corresponded to performing the same I2C read after the page select field had been modified. The claim did not need to further detail the low-level I2C read operation.

3.3 The appellant also argued that step f2.2, "modifying the information of the optical module readable partition", directly corresponded to re-configuring the page select byte field to point to a different partition, namely the partition storing the link negotiation information. Thus, the claim clearly disclosed that the configuration of the page select byte field was the technical means by which the method performed partition selection for obtaining and re-obtaining the information. The skilled person would

understand that this configuration step was inherently executed within the claimed obtaining and modifying steps.

- 3.4 The board is not persuaded by these arguments. The claim does not specify in detail how the I2C protocol is used in the method and the skilled person reading claim 1 cannot understand which features of the I2C protocol are used and how.

Claim 1 specifies in feature f5 that "information used for link negotiation is stored in a first partition". Feature f6 specifies that the MCU is adapted to configure a "page select byte field" by using I2C to "select a page partition" and "read information of the partition".

However, features f1 to f3 do not mention a "page partition" and do not refer to the use of a page select byte field. It is not clear from claim 1 that the obtained and re-obtained "information of an optical module readable partition" in features f1 and f3 corresponds to a "page partition" selected using the "page select byte field" of feature f6.

Claim 1 does not specify that the "information of an optical module readable partition" is obtained, in features f1 and f3, from or using the page select byte field, and does not specify how the MCU obtains the "information of an optical module readable partition" and modifies it. It is thus unclear why the MCU obtains the "information of an optical module readable partition" in feature f1, modifies it to a specific value in feature f2.2 and then re-obtains it in feature f3. Without the missing information, it is not

understandable why the MCU re-obtains the information after itself modifying it.

- 3.5 In view of the above, the board concludes that claim 1 of the new main request does not fulfil the requirements of Article 84 EPC.

New first auxiliary request

4. Claim 1 of the new first auxiliary request differs from claim 1 of the new main request in that the text "information used for link negotiation" in feature f5 has been replaced with the text "the link negotiation information", and in that the following feature has been added at the end of the claim (feature has been itemised by the board):

f7 wherein the obtaining information of the optical module readable partition comprises obtaining content corresponding to a page select byte control byte of the optical module, wherein the page select byte control byte records information about a selected partition.

5. *Admittance of the request*

The new first auxiliary request attempts to address the clarity objections raised for the first time in the board's preliminary opinion. This constitutes an exceptional circumstance within the meaning of Article 13(2) RPBA justifying admittance of the new first auxiliary request.

6. *Clarity*

- 6.1 The appellant argued that the expression "information used for link negotiation" had been amended to "the

link negotiation information" in feature f5 in order to ensure consistent terminology for the same concept. Furthermore, claim 1 had been amended to explicitly specify that the obtaining step in feature f1 comprised obtaining content corresponding to a page select byte control byte of the optical module which records information about a selected partition. This amendment overcame the clarity objections pertaining to different interpretations of the step of obtaining information of the optical module readable partition.

6.2 The board agrees that the amendment to feature f5 helps to clarify that feature f5 refers to the "link negotiation information" of features f2 and f3.1.

6.3 However, in feature f7, claim 1 of the new first auxiliary request introduces a new term, "page select byte control byte", which is similar to the term "page select byte field" used in feature f6 to describe a similar function. In particular, claim 1 specifies in feature f6 that "a page select byte field of the optical module" is configured to select a page partition. Feature f7 specifies that obtaining "information of the optical module readable partition" comprises "obtaining content corresponding to a page select byte control byte of the optical module".

In view of this, it is unclear from claim 1 how the "page select byte control byte" of feature f7 relates to the "page select byte field" of feature f6.

6.4 Feature f7 specifies that the "page select byte control byte records information about a selected partition". The term "selected partition" is not used in the other features of the claim and is unclear. The term implies that the partition is selected but it is unclear which component selects it and how. Even if, as argued by the

appellant, the skilled person understood from claim 1 that in step f2.2 the MCU modified the page select byte field to point to a different partition, it would still be unclear how the page select byte field was modified in step f2.2 to point to a different partition, and how all this related to the "page select byte control byte".

6.5 Therefore, claim 1 of the new first auxiliary request does not satisfy the requirements of Article 84 EPC.

Conclusion

7. Since neither of the requests is allowable, the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:



S. Lichtenvort

M. Jaedicke

Decision electronically authenticated