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**Datasheet for the decision  
of 28 November 2022**

**Case Number:** T 1621/20 - 3.5.05

**Application Number:** 10151426.3

**Publication Number:** 2211263

**IPC:** G06F3/06, G06F17/30

**Language of the proceedings:** EN

**Title of invention:**

Method for performing storage virtualization in a storage system architecture

**Applicant:**

Infotrend Technology, Inc.

**Headword:**

Physical-section-versus-virtual-section cross-referencing mechanism/INFOTREND

**Relevant legal provisions:**

RPBA 2020 Art. 13(1), 13(2), 11  
EPC Art. 84

**Keyword:**

Amendment to appeal case - amendment overcomes issues raised  
(no)

Remittal - special reasons for remittal - (no)

Claims - clarity (no)



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Case Number: T 1621/20 - 3.5.05

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.05**  
**of 28 November 2022**

**Appellant:** Infortrend Technology, Inc.  
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**Representative:** Becker Kurig & Partner  
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**Decision under appeal:** **Decision of the Examining Division of the European Patent Office posted on 26 February 2020 refusing European patent application No. 10151426.3 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chair** A. Ritzka  
**Members:** E. Konak  
K. Kerber-Zubrzycka

## **Summary of Facts and Submissions**

- I. The appeal is against the examining division's decision to refuse the application. The examining division decided that the main request did not meet the requirements of Articles 84 and 56 EPC and that auxiliary requests 1 and 2 did not meet the requirements of Article 123(2) and 56 EPC.
- II. With the statement setting out the grounds of appeal, the appellant re-filed the requests on which the contested decision is based and filed auxiliary requests 3 and 4. The appellant requested that the decision be set aside and that a patent be granted on the basis of one of these requests. It further requested oral proceedings as an auxiliary measure.
- III. The board summoned the appellant to oral proceedings. In a communication pursuant to Article 15(1) RPBA 2020, it gave its preliminary opinion that the main request and auxiliary requests 1 and 2 did not meet the requirements of Articles 123(2), 84 and 56 EPC and that auxiliary requests 3 and 4 were not admissible.
- IV. With its letter of reply dated 26 October 2022, the appellant filed a new main request and new auxiliary requests 1 and 2. It withdrew auxiliary requests 3 and 4 filed with the statement setting out the grounds of appeal and requested that the case be remitted to the examining division for further prosecution.
- V. Oral proceedings were held before the board. The appellant's final request was that the decision under appeal be set aside and that a patent be granted based on the main request or auxiliary request 1 or 2 filed

with the letter of 26 October 2022; the case be remitted to the examining division for further prosecution; or, alternatively, a patent be granted based on the main request or auxiliary request 1 or 2 filed with the statement setting out the grounds of appeal.

VI. Claim 1 of the main request filed with the letter of 26 October 2022 reads as follows:

"A data accessing method, for accessing data in a storage system architecture (30), the storage system architecture (30) comprising at least one disk array subsystem (20), and the method is characterized by comprising the steps of:

providing a section allocation system (211) for managing a plurality of media extents comprising a first media extent and a second media extent of the at least one disk array subsystem (20);

obtaining a location index corresponding to a host logical block address via a block association table (2137);

obtaining, via a physical-section-versus-virtual-section cross-referencing mechanism, a first location information of a first physical section located in the first media extent, in which the location index corresponds to the first location information;

copying or moving data in the first physical section of the first media extent to a second physical section of the second media extent;

updating a cross-reference of the physical-section-versus-virtual-section cross-referencing mechanism such that the location index in the block association table (2137) corresponds to a second location information of the second physical section of the second media extent managed by the section allocation system (211); and

performing a host input/output request addressing the host logical block address through using the second location information of the second physical section to access the data in the second physical section."

Claim 1 of auxiliary requests 1 and 2 filed with the letter of 26 October 2022 reads as follows:

"A data accessing method, for accessing data in a storage system architecture (30), the storage system architecture (30) comprising a master disk array subsystem (20A) of a plurality of disk array subsystems (20A, 20B, 20C), and the method is characterized by comprising the steps of:

providing a virtualization module (202) in the master disk array subsystem (20A) for generating at least one virtual pool from a plurality of media extents;

providing a section allocation system (211) for each of the at least one virtual pool in order to manage the plurality of media extents;

obtaining, via a block association table (2137), a location index corresponding to a host logical block address;

obtaining, via a physical-section-versus-virtual-section cross-referencing mechanism, a first location information about a first physical section located in a first media extent, in which the location index corresponds to the first location information;

removing one media extent of the plurality of media extents from one of the at least one virtual pool, or adding a new media extent to the one virtual pool;

moving data in the first physical section of the first media extent, to a second physical section of a second media extent, wherein the first media extent is the to-be-removed media extent in case of removing and

wherein the second media extent is the newly-added media extent or other media extent of the at least one virtual pool in case of adding;

updating a cross-reference of the physical-section-versus-virtual-section cross-referencing mechanism such that the location index in the block association table (2137) corresponds to a second location information about the second physical section of the second media extent managed by the section allocation system (211 ); and

performing, through using the second location information about the second physical section, a host input/output request addressing the host logical block address to access the data in the second physical section."

Claim 1 of the main request filed with the statement setting out the grounds of appeal reads as follows:

"A data accessing method, for accessing data in a storage system architecture (30), the storage system architecture (30) comprising at least one disk array subsystem (20), and the method is characterized by comprising the steps of:

providing a section allocation system (211) for managing a plurality of media extents comprising a first media extent and a second media extent of the at least one disk array subsystem (20);

obtaining a location index corresponding to a host logical block address via a block association table (2137);

obtaining, via a physical-section-versus-virtual-section cross-referencing mechanism, a first location information of a first physical section located in the first media extent, in which the location index corresponds to the first location information;

copying or moving data in the first physical section to a second physical section of the second media extent;

updating a cross-reference of the physical-section-versus-virtual-section cross-referencing mechanism such that the location index corresponds to a second location information of the second physical section but not corresponds to the first location information; and

performing a host input/output request addressing the host logical block address through using the second location information of the second physical section to access data in the second physical section."

Claim 1 of auxiliary request 1 filed with the statement setting out the grounds of appeal reads as follows:

"A data accessing method, for accessing data in a storage system architecture (30), the storage system architecture (30) comprising a master disk array subsystem (20) of at least one disk array subsystem (20), and the method is characterized by comprising the steps of:

providing a virtualization module (202) in the master disk array subsystem (20) for generating at least one virtual pool from a plurality of media extents;

providing a section allocation system (211) for each of the at least one virtual pool in order to manage the plurality of media extents;

obtaining, via a block association table (2137), a location index corresponding to a host logical block address;

obtaining, via a physical-section-versus-virtual-section cross-referencing mechanism, a first location information about a first physical section located in a



first media extent, in which the location index corresponds to the first location information;

removing one media extent of the plurality of media extents from one of the at least one virtual pool, or adding a new media extent to the one virtual pool, wherein the one virtual pool comprises the first media extent and a second media extent;

moving data in the first physical section of the first media extent, to a second physical section of the second media extent;

updating a cross-reference of the physical-section-versus-virtual-section cross-referencing mechanism such that the location index corresponds to a second location information about the second physical section but not corresponds to the first location information; and

performing, through using the second location information about the second physical section, a host input/output request addressing the host logical block address to access the data in the second physical section."

Claim 1 of auxiliary request 2 filed with the statement setting out the grounds of appeal differs from claim 1 of auxiliary request 1 filed with the statement setting out the grounds of appeal as follows:

"A data accessing method, for accessing data in a storage system architecture (30), the storage system architecture (30) comprising a master disk array subsystem (20) of at least two disk array subsystems (20), and the method is characterized by comprising the steps of:

[...]"

## **Reasons for the Decision**

1. Admission of the main request and auxiliary requests 1 and 2 filed with the letter of 26 October 2022
  - 1.1 The main request and auxiliary requests 1 and 2 filed with the letter of 26 October 2022 were filed after the notification of the summons to oral proceedings before the board. In line with Article 13(2) RPBA 2020, requests filed after the notification of the summons to oral proceedings must, as a rule, not be taken into account unless there are exceptional circumstances justified with cogent reasons by the appellant. In the case at hand, the appellant argued that these new requests were to address the new objections under Articles 123(2) and 84 EPC that the board had raised in its preliminary opinion. Nevertheless, any amendment to an appellant's appeal case after it has filed its grounds of appeal may be admitted only at the discretion of the board (Article 13(1) RPBA 2020). In exercising this discretion, the board considers whether the amendments overcome, prima facie, the issues raised by the board.
  - 1.2 In the case at hand, the amendments do not prima facie overcome two objections under Article 84 EPC that the board had raised in its preliminary opinion.
    - 1.2.1 First, the board had objected that it was unclear, in claim 1 of the main request and auxiliary requests 1 and 2 filed with the statement setting out the grounds of appeal, how "section allocation system (211)", "block association table (2137)" and "physical-section-versus-virtual-section cross-referencing mechanism" were related. Furthermore, the first two of these terms appeared once in the claim and were not mentioned

later, rendering their relevance for the claimed method obscure. To address this objection, the appellant amended the penultimate step of claim 1 of all three requests as "updating a cross-reference of the physical-section-versus-virtual-section cross-referencing mechanism such that the location index in the block association table (2137) corresponds to a second location information of the second physical section of the second media extent managed by the section allocation system (211)" (with the additions underlined). This amendment does not overcome the objection that the role of the "section allocation system (211)" in the claimed method is obscure. It merely repeats the wording of an already existent step in which a section allocation system is provided for "managing" (which is a broad and vague term) the plurality of media extents.

The appellant argued that the updating of the location index in the block association table was carried out by the section allocation system as part of the aforementioned "managing". However, this is not derivable from the wording of the claim.

- 1.2.2 Second, the board had objected that it was unclear, in claim 1 of auxiliary requests 1 and 2 filed with the statement setting out the grounds of appeal, how the step of removing/adding a media extent and the next step of moving data from the first media extent to the second media extent were related. The board had raised the issue of whether data from an already removed media extent could be moved to another media extent. The amendments made to claim 1 of auxiliary requests 1 and 2 do not overcome this objection. The objected steps read after amendment: "removing one media extent of the plurality of media extents from one of the at least one

virtual pool [...]; moving data in the first physical section of the first media extent, to a second physical section of a second media extent, wherein the first media extent is the to-be-removed media extent in case of removing [...]. The amendment even gives rise to new clarity objections since a media extent which was removed in the previous step is referred to as "the to-be-removed media extent", implying that the media extent was not yet removed.

The appellant argued that the steps of the claimed method were not necessarily in chronological order. If the board were to accept this argument, it would follow that the entire chronological order of the claimed method would be unclear. The appellant further argued that Article 84 EPC did not require that all features of a claim be clear. It was sufficient that the scope of the overall claim is clear. However, the board cannot follow how the overall claim can be clear if its individual features lack clarity.

- 1.3 For these reasons, the board did not admit the main request and auxiliary requests 1 and 2 filed with the letter of 26 October 2022 .
2. Request for remittal to the examining division
  - 2.1 The appellant requested remittal of the case to the examining division for further prosecution. It reasoned this request with the need for substantial reworking of the claims to address the clarity objections raised by the board.
  - 2.2 The board considers that, regarding the appellant's request for remittal, it has to judge whether remittal under Article 111(1) EPC is appropriate in view of the

requirements of Article 11 RPBA 2020. In accordance with Article 11 RPBA 2020, the board must not remit a case to the department whose decision was appealed for further prosecution unless special reasons present themselves for doing so. As a rule, fundamental deficiencies apparent in the proceedings before that department constitute such special reasons. In the current case, the board is not aware of any fundamental procedural deficiencies. Furthermore, whether "special reasons" present themselves is to be decided on a case-by-case basis. If all issues can be decided without an undue burden, a board should normally not remit the case (see the explanatory remarks on Article 11 RPBA 2020, Supplementary publication 2, OJ 2020).

- 2.3 In the case at hand, the clarity objections that the appellant wishes to address after remittal were raised by the board. Since the objections were raised by the board, it follows as a matter of logic that the board can decide on them itself without undue burden. The board deems the clarity objections to be a precondition which has to be examined before the examining division's decision refusing the application for lack of inventive step can be reviewed. Therefore, there are no special reasons for a remittal within the meaning of Article 11 RPBA 2020, and the request for remittal cannot be allowed (see also decision T1538/17, Reasons 7).

3. Main request and auxiliary requests 1 and 2 filed with the statement setting out the grounds of appeal

Due to the objections raised in the board's preliminary opinion, discussed above under points 1.2.1 and 1.2.2, the main request and auxiliary requests 1 and 2 filed with the statement setting out the grounds of appeal do

not meet the requirements of Article 84 EPC. The appellant stated in its letter of 26 October 2022 that these objections had been overcome in the amended main request and auxiliary requests 1 and 2 filed with that letter. However, it did not defend, either in that letter or at the oral proceedings, the clarity of the main request and auxiliary requests 1 and 2 filed with the statement setting out the grounds of appeal. Under these circumstances, the board maintained its preliminary opinion.

4. There being no allowable requests, the appeal has to be dismissed.

## Order

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

The appeal is dismissed.

The Registrar:

The Chair:



K. Götz-Wein

A. Ritzka

Decision electronically authenticated