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**Datasheet for the decision
of 26 March 2019**

Case Number: T 2620/16 - 3.5.05

Application Number: 10075676.6

Publication Number: 2385459

IPC: G06F3/06, G06F11/14

Language of the proceedings: EN

Title of invention:

Virtual disk drive system and method

Applicant:

Dell International L.L.C.

Headword:

Data instant fusion/DELL

Relevant legal provisions:

EPC Art. 76(1), 84, 123(2)

Keyword:

Added subject-matter - (no, after amendments)

Clarity - (yes)

Remittal to the first instance for further prosecution - (yes)



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Case Number: T 2620/16 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 26 March 2019

Appellant: Dell International L.L.C.
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 14 July 2016
refusing European patent application
No 10075676.6 pursuant to Article 97(2) EPC**

Composition of the Board:

Chair A. Ritzka
Members: K. Bengi-Akyuerek
F. Blumer

Summary of Facts and Submissions

- I. The appeal is against the decision of the examining division to refuse the present European patent application, divided from the parent application EP 04781220.1, on the grounds of added subject-matter (Article 76(1) EPC), lack of clarity (Article 84 EPC) and non-compliance with Rule 49(11) EPC with respect to the claims of a main request and an auxiliary request.
- II. With the statement setting out the grounds of appeal, the appellant filed amended sets of claims according to a main request and two auxiliary requests. It requested that the examining division's decision be set aside and that a patent be granted on the basis of one of those claim requests.
- III. In a communication under Rule 100(2) EPC, the board gave its preliminary opinion on the appeal. In particular, it raised objections under Articles 76(1) and 123(2) EPC. The board also informed the appellant that the case could be remitted to the examining division if those objections were overcome.
- IV. With a letter of reply, the appellant submitted amended claims according to a new main request replacing all the claim requests on file, and requested that the case be remitted to the examining division for further prosecution on the basis of the new main request.
- V. Claim 1 of the new **main request** reads as follows:

"A method of data instant fusion comprising:
presenting at least one volume comprising a storage
abstraction of a plurality of RAID devices;
allocating free pages of storage space to the at

least one volume;

writing data to the allocated storage space; and

by a disk manager having at least one disk storage system controller:

automatically generating a point-in-time-copy, PITC, for each of the at least one volumes at predetermined time intervals, each PITC comprising a table of pointers and data pages for the pages written to a volume while the PITC was active and further comprising the changes to the data in an associated volume that have taken place since a previous PITC taken at a previous time interval, and using the PITC to map the contents of the volume as of the point in time the PITC was generated; and

storing an address index of each PITC, and instantly locating each PITC of the at least one volume via the stored address index."

The further independent claim 11 of the main request is directed to a corresponding "disk drive system".

Reasons for the Decision

1. *The present invention*

The present application is concerned with dynamic data allocation and data recovery in virtual disk drive systems made up of a disk manager, virtual volumes and several RAID storage devices. Data recovery following, for example, a system failure or virus attacks is based on the generation of periodic snapshots or so-called point-in-time-copies (PITCs) of each virtual volume reflecting the data writes.

2. NEW MAIN REQUEST

The new main request was filed in response to the board's communication under Rule 100(2) EPC with the aim of overcoming the objections raised under Articles 76(1) EPC and 123(2) EPC.

2.1 Present **claim 1** comprises the following limiting features (amendments compared with claim 1 of the main request underlying the appealed decision highlighted by the board):

A method of data instant fusion comprising:

- A) presenting at least one volume comprising a storage abstraction of a plurality of ~~data storage~~ RAID devices;
- B) allocating free pages of storage space to the at least one volume and writing data to the allocated storage space;
- C) by a disk manager having at least one disk storage system controller:
- D) automatically generating a point-in-time-copy (PITC) for each of the at least one volumes at predetermined time intervals,
- E) wherein each PITC comprises a table of pointers ~~to data pages~~ and data pages for the pages written to a volume while the PITC was active and further comprises ~~only~~ the changes to the data in an associated volume that have taken place since a previous PITC taken at a previous time interval;
- F) using the ~~pointers~~ PITC to map the contents of the ~~corresponding~~ volume as of the point in time the PITC was generated;
- G) storing an address index of each PITC;

H) instantly locating each PITC of the at least one volume via the stored address index.

2.2 *Added subject-matter (Articles 76(1) and 123(2) EPC)*

2.2.1 As regards feature A), the examining division found that it infringed Article 76(1) EPC on the grounds that the parent application as filed consistently taught that a virtual volume provided a storage abstraction only of RAID devices, rather than general data storage devices as then claimed (see appealed decision, Reasons 14.1.1).

Following the amendments made, the board is satisfied that feature A) now complies with Articles 76(1) and 123(2) EPC (see e.g. page 15, lines 12-13 of the parent application as filed and page 8, lines 5-7 of the present application as filed, in conjunction with Figs. 2 and 6).

2.2.2 As to features C), G) and H), the board is satisfied that they are supported by the present and parent applications as filed according to which it is exclusively the "disk storage system controller" of the "disk manager" that automatically generates the respective PITCs, stores the respective address index and instantly locates each PITC (see e.g. claim 22 of the parent application as filed and claim 12 of the present application as filed).

2.2.3 As to feature E), the board is satisfied that it is supported by the present and parent applications as filed (see e.g. page 30, lines 12-13 of the parent application as filed and page 21, lines 7-8 of the present application as filed).

2.2.4 The above observations also apply to independent apparatus **claim 11**.

2.2.5 In view of the above, the independent claims of the new main request are considered to be allowable under Articles 76(1) and 123(2) EPC.

2.3 *Clarity (Article 84 EPC)*

2.3.1 The examining division held that features A), E) and H) of claim 1 then on file amounted to a "result to be achieved" and therefore contravened Article 84 EPC on the grounds that it was unclear from the wording of the independent claims on file what was meant by "storage abstraction", by "changes to data" and by "instantly locating each PITC" (see appealed decision, Reasons 14.2.1).

2.3.2 As to features A) and E), the board holds that the term "storage abstraction" is evidently referring to a model for storage allocation, that the expression "changes to the data" obviously refers to the difference between two successive copies of stored data, while the phrase "instantly locating each PITC" in feature H) is to be understood to mean detecting the location of copies of stored data via a specific address. Hence, the board takes the view that the above terms appear to be broad but not unclear.

2.3.3 In conclusion, the above objections raised under Article 84 EPC are considered to be unfounded.

2.4 *Consistent terminology (Rule 49(11) EPC)*

2.4.1 The examining division held that feature B) did not comply with Rule 49(11) EPC, since the used

terminology, i.e. the terms "storage space" and "volume", did not match that of the parent application (see appealed decision, Reasons 14.1.3 and 14.2.1).

2.4.2 However, the board holds that the terms "storage space" and "volume" are consistently used in the description (see e.g. paragraph [0002] of the present application as filed) and the claims. Also, "free pages" relating to a "volume" is referred to in the description (see e.g. paragraphs [0073] and [0075] as filed). Hence, the above objections raised under Rule 49(11) EPC are considered to be unfounded.

2.5 It follows from the above that the independent claims of the new main request comply with Articles 76(1), 84, 123(2) and Rule 49(11) EPC.

3. *Remittal of the case for further prosecution*

3.1 Given that the grounds for refusal no longer apply, the decision under appeal has to be set aside.

3.2 However, the compliance of the present application with the requirements of Article 52 EPC, in particular novelty and inventive step, was neither analysed nor decided in the decision under appeal. The impugned decision included merely a cursory and speculative statement in that regard (see Reasons 14.3):

"The objections raised above ar [sic] such that further assessment of ... patentability is not pertinent at present.

The examining division however remains of the opinion that the subject-matter of the independent claims is at least suggested by document D2, figures 18A to 18C and 20A, and paragraph 192."

But at no stage in the examination proceedings was a complete and final assessment of novelty and inventive step carried out for the claimed subject-matter.

- 3.3 In view of the foregoing, the board decided, in the exercise of its discretion under Article 111(1) EPC and in accordance with the appellant's request (see point IV above), to remit the case to the examination division for further prosecution, on the basis of the claims of the new main request.

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.

The Registrar:

The Chair:



K. Götz-Wein

A. Ritzka

Decision electronically authenticated