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Datasheet for the decision of 25 April 2019

Case Number: T 1242/13 - 3.5.05

Application Number: 02258807.3

Publication Number: 1324174

IPC: G06F1/00, G06F3/06

Language of the proceedings: EN

Title of invention:
Method for using partitioning to provide capacity on demand in data libraries

Applicant:
Hewlett Packard Enterprise Development LP

Headword:
Partitioned data library IV/HEWLETT PACKARD

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - both requests (no)

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Case Number: T 1242/13 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 25 April 2019

Appellant: (Applicant)	Hewlett Packard Enterprise Development LP 11445 Compaq Center Drive West Houston, TX 77070 (US)
Representative:	EIP EIP Europe LLP Fairfax House 15 Fulwood Place London WC1V 6HU (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 13 December 2012 refusing European patent application No. 02258807.3 pursuant to Article 97(2) EPC**

Composition of the Board:

Chair	A. Ritzka
Members:	R. de Man
	F. Blumer

Summary of Facts and Submissions

I. The applicant (appellant) appealed against the decision of the examining division refusing European patent application No. 02258807.3.

II. The examining division decided that the subject-matter of independent claim 1 extended beyond the content of the application as filed, that independent claim 6 was not clear and that the subject-matter of all claims 1 to 9 lacked inventive step in view of the following document:

D1: US 6 328 766 B1, 11 December 2001.

The subject-matter claimed in the first auxiliary request lacked inventive step for the same reasons as given for the main request.

III. In its statement of grounds of appeal, the appellant amended claim 6 of the main request and maintained the first auxiliary request.

IV. In a communication accompanying the summons to oral proceedings, the board expressed, *inter alia*, the preliminary opinion that the subject-matter of claim 1 of both the main request and the first auxiliary request lacked inventive step over document D1.

V. In a letter dated 28 January 2019, the appellant informed the board that it would not attend the oral proceedings.

VI. Oral proceedings were held on 25 April 2019 in the appellant's absence. At the end of the oral proceedings, the chair announced the board's decision.

VII. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the main request or, in the alternative, of the first auxiliary request.

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

"A method (200, 300) for providing data storage capacity on demand comprising:
disabling (203, 302) a set of data media storage slot elements (408-411, 416, 417; 512-517) and data transfer elements (420, 421; 522, 523) of a data library disallowing access to said disabled set by all end users of said data library;
partitioning (202, 203) at least a portion of a set of active data media storage slot elements (404-407, 412-415; 504-509) and active data transfer elements (418, 419, 422, 423; 518-521) of said data library, exclusive of said disabled set of data media storage slot elements and data transfer elements, into partitions for use by said end users; and
redefining (204, 307) said disabled and active sets of data media storage slot elements and data transfer elements in response to changes in storage capacity rights of a said end user by:
i) enabling at least one data media storage slot element and/or data transfer element of said set of disabled data media storage slot elements and data transfer elements and assigning said at least one enabled data media storage slot element and/or data transfer element to said set of active data media storage slot elements and data transfer elements, or
ii) disabling at least one data media storage slot element and/or data transfer element of said set of active data media storage slot elements and data

transfer elements and assigning said at least one disabled data media storage slot element and/or data transfer element to said set of disabled data media storage slot elements and data transfer elements."

IX. Claim 1 of the first auxiliary request differs from claim 1 of the main request in that "disallowing access to said disabled set by all end users of said data library" has been deleted from the "disabling" step and in that "into partitions for use by said end users;" has been replaced with the following text:

"into a plurality of partitions for use by said end users;
configuring a library controller (113) to present respective virtual controllers (LUN0, LUN1, LUN2) assigned to control said partitions and not accept a data media move command to move data media to a data transfer element or data media storage slot element in said set of disabled data transfer elements and data media storage slot elements so as to disallow access to said set of disabled data transfer elements and data media storage slot elements by all end users of the data library;"

X. The appellant's arguments, where relevant to the decision, are discussed in detail below.

Reasons for the Decision

1. The appeal complies with the provisions referred to in Rule 101 EPC and is therefore admissible.

2. *The application*

The application relates to providing data storage capacity on demand to end users. The background section of the application explains that the management overhead associated with administering a large number of small storage devices for allocation to end users is cost-prohibitive. To reduce this overhead, the application proposes employing a small number of large data libraries and securely allocating portions of their storage capacity to end users in accordance with (dynamically changing) storage capacity rights.

Main request

3. *The invention as defined by claim 1*

3.1 Claim 1 is directed to a method for providing data library storage capacity on demand to end users. The data library includes a set of data media storage slot elements and a set of data transfer elements.

3.2 Each of the elements of the data library is either "disabled" or "active". Access to disabled elements by end users is "disallowed". The active elements are partitioned into "partitions" for use by the end users.

3.3 If the storage capacity rights of an end user change, at least one data media storage slot or data transfer element is changed from being "disabled" to being "active" or vice versa.

3.4 It follows from the description that an element being "disabled" means that it is not assigned to any of the end-user partitions but kept in reserve for later use

(page 5, line 32, to page 6, line 11; page 6, line 24, to page 7, line 15).

4. *Inventive step*

4.1 Document D1 discloses a magnetic tape library system 10, which comprises a plurality of data transfer elements in the form of tape drives 12 and 13 and a plurality of data media storage slot elements housed in a tape storage magazine 14 (Figure 1; column 3, lines 6 to 43).

4.2 In the embodiment of Figure 3, the media storage slot elements 46a to 46j are partitioned into three partitions 31, 33 and 35. This creates three "virtual libraries" which are independently used by each of the three host computers 37 (column 5, lines 3 to 27). The allocation of storage slot elements 46a-j to partitions is configurable by a system administrator and can be dynamically altered depending on the requirements of the host computers 37 (column 5, lines 28 to 41).

4.3 To reduce the risk of conflict between host computers, the data transfer elements can likewise be assigned to partitions (column 5, lines 46 to 55; column 11, lines 10 to 14; column 12, lines 9 to 12). This assignment is also dynamically configurable by the system administrator (column 9, lines 50 to 54).

4.4 Document D1 does not disclose that storage slot elements or data transfer elements may be "disabled".

The "disabled" elements of claim 1 effectively form reserve capacity, which can be increased or decreased by the storage provider as end users demand less or more storage capacity (see point 3.4 above).

In document D1, there is no need for such reserve capacity since the capacities of the partitions assigned to the host computers are not determined by commercial contracts between the users of the host computers and the system administrator. The capacity of partitions are changed by reallocating resources between partitions.

4.5 Hence, the method of claim 1 differs from what is disclosed in document D1 in that it supports the possibility of "disabling" storage slot elements and data transfer elements to form unused reserve capacity. This supports the "data storage capacity on demand" business scheme underlying the present invention, whereby each end user is assigned exactly the data storage capacity it currently wishes to pay for, and the remaining storage resources are kept in reserve.

4.6 Since the business scheme underlying the invention is not technical, it does not contribute to inventive step and may be included in the problem to be solved. Thus, the objective technical problem solved by these differences may be formulated as how to adapt the method of document D1 to allow a data storage provider to manage reserve capacity.

The board judges that the skilled person, faced with this problem, would have effortlessly adapted the method of document D1 to allow active elements to become "reserved" (i.e. "disabled") by dynamically assigning them to none of the end users' partitions - thereby preventing all end users from accessing these elements - and to allow reserved/disabled elements to be made "active" by dynamically assigning them to an end user's partition. He would thereby have arrived at

the subject-matter of claim 1 without the exercise of inventive skill.

4.7 It follows that the subject-matter of claim 1 lacks inventive step (Article 56 EPC).

First auxiliary request

5. *Inventive step*

5.1 Claim 1 of the first auxiliary request adds features specifying that a library controller is configured:

- to "present" respective "virtual controllers" for controlling the partitions; and

- to "not accept" data media move commands moving data media to a "disabled" data transfer element or data media storage element.

5.2 In the embodiment of Figure 3 of document D1, library controller 16 is configured to "present" respective "virtual controllers" for controlling the partitions in the sense that each partition is presented to the corresponding host computer as an independent "virtual library" (column 5, lines 3 to 27; see also column 6, lines 29 to 35; column 9, lines 30 to 62).

5.3 In addition, in document D1 host computers "may store and retrieve data to and from separate portions of the media element library without interfering with one another" (column 2, lines 23 to 26), which means that host computers are not supposed to access data that does not belong to their partition. It is therefore at least an obvious possibility that the library controller accepts a data media move command from a

host computer only if the command moves a data medium between elements of the host computer's partition (see also column 9, lines 58 to 62, stating that the controller maps source and destination addresses in a media move command received from a host computer to "the appropriate physical resources allocated to that host"). This means that data media move commands for moving data media to "disabled" elements that are not assigned to any partition are not accepted.

5.4 The subject-matter of claim 1 therefore lacks inventive step (Article 56 EPC).

Conclusion

6. Since neither of the requests on file is allowable, the appeal is 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