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Datasheet for the decision
of 25 April 2019

Case Number: T 1180/13 - 3.5.05

Application Number: 02258808.1

Publication Number: 1324185

IPC: G06F3/06

Language of the proceedings: EN

Title of invention:
System and method for partitioning a storage area network
associated data library employing element addresses

Applicant:
Hewlett Packard Enterprise Development LP

Headword:
Partitioned data library III/HEWLETT PACKARD

Relevant legal provisions:
EPC Art. 56, 84, 123(2)

Keyword:
Amendments - added subject-matter - main request (yes)
Claims - clarity - main request (no)
Inventive step - first auxiliary request (no)

Case Number: T 1180/13 - 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 10 December 2012 refusing European patent application No. 02258808.1 pursuant to Article 97(2) EPC**

Composition of the Board:

Chairwoman	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. 02258808.1.

II.   The decision cited the following documents:

        D1: EP 0 859 308 A, 19 August 1998;
        D2: US 6 328 766 B1, 11 December 2001;
        D3: US 6 044 442 A, 28 March 2000; and
        D4: EP 1 156 408 A, 21 November 2001.

        The examining division decided that the main request
        did not comply with Article 123(2) EPC and that the
        subject-matter of all claims 1 to 10 of the main
        request lacked inventive step in view of document D4
        and the common general knowledge as exemplified by
        documents D2 and D3. The first auxiliary request did
        not comply with Articles 123(2) and 84 EPC, and the
        subject-matter of all its claims 1 to 8 lacked
        inventive step in view of the same documents.

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

IV.   In a communication accompanying the summons to oral
        proceedings, the board expressed, *inter alia*, the
        preliminary opinion that the main request did not
        comply with Articles 123(2) and 84 EPC and that the
        subject-matter of claim 1 of the first auxiliary
        request lacked inventive step.

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 data library (200) adapted to be attached to a
        storage area network (100), said library characterised
        by a plurality of secured partitions (215-217) that
        each comprises at least one data transfer element
        (201-204) and at least one data storage element slot
        (205), said data transfer elements and data storage
        element slots being assigned respective internally
        unique element addresses (221);
        at least one media transport element (220) shared by
        said partitions to move media between said slots and
        said data transfer elements, said at least one media
        transport element being assigned an internally unique
        element address (221); and
        a library controller (213) configured to secure said
        partitions by restricting movement of said media to and
        from said data storage element slots to data storage
        element slots assigned to a same of said partitions by
        1) assigning a different logical unit designation
        (LUN1, LUN2, LUN3) to each of said partitions and
        respective external element addresses (222) to said at
        least one media transport element, each said data

transfer element and each said data storage element slot and 2) mapping said internally unique element addresses (221) to said external element addresses (222),
wherein the respective external element addresses (222) assigned to the at least one data transport element (220), the at least one data transfer element and the at least one data storage element start from a same external element address for each partition."

IX.   Claim 1 of the first auxiliary request reads as follows:

"A data library (200) adapted to be attached to a storage area network (100), said library characterised by a plurality of partitions (215-217) that each comprises at least one data transfer element (201-204) and at least one data storage element slot (205), said data transfer elements and data storage element slots each being assigned an internally unique element address (221);
at least one media transport element (220) shared by said partitions to move media between said slots and said data transfer elements, said at least one media transport element being assigned an internally unique element address (221); and
a library controller (213) that assigns a different logical unit designation (LUN1, LUN2, LUN3) to each of said partitions and that assigns external element addresses (222) to said at least one transport, each said data transfer element and each said slot and that maps said internally unique element addresses to said external addresses, said controller restricting movement of media to and from said slots to slots assigned to a same of said partitions, and

wherein each of said partitions comprises at least one
of said data transfer elements and at least one of said
slots and the number of data transfer elements, the
number of slots and the said external element addresses
assigned thereto in a partition correspond to the
respective numbers of data transfer elements and slots
and element addresses of an existing data library model
of a plurality of existing library models whereby said
partitions present externally as a said existing
library model to permit external software configured to
recognise a said existing library model to recognise
the said library model a partition presents as."

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 a partitioned data library
        that is to be attached to a data storage area network.
        To allow existing software to access the partitions
        without first being reconfigured, the partitions are
        set up to emulate existing data libraries for which the
        software has already been configured (see paragraph
        [0011] of the application as filed).

Main request

3.   *Added subject-matter and clarity*

3.1   According to claim 1 of the main request, the library
        controller is configured to "secure" partitions "by
        restricting movement of said media to and from said
        data storage element slots to data storage element
        slots assigned to a same of said partitions".

        The only passages in the application as filed referring
        to "restricting movement" of media are original
        claims 1, 2, 8 and 9 and paragraph [0007] (which
        corresponds to original claim 1). None of these
        passages refers to "restricting movement" of media as a
        way of "securing" partitions.

        The only passages in the application as filed
        discussing how partitions are "secured" are paragraph
        [0005] (referring to the use of network switches to
        secure partitions in existing systems) and paragraph
        [0021]. The latter passage explains that, in an FC SAN
        environment, partitions can be secured without the use
        of external switches by allowing access to a partition
        only by specified hosts, keyed on "host world wide
        names (WWN)".

        Hence, there is no disclosure in the application as
        filed of securing partitions by restricting movement of
        media between slots assigned to the same partition
        (Article 123(2) EPC).

        Moreover, claim 1 uses the term "secured partition" in
        a different sense from how it is used in the
        description, which results in a lack of clarity
        (Article 84 and Rule 49(11) EPC).

3.2   According to claim 1, restricting movement of media
         between data storage element slots to slots of the same
         partition is achieved by "1) assigning a different
         logical unit designation to each of said partitions and
         respective external element addresses to said at least
         one media transport element, each said data transfer
         element and each said data storage element slot and 2)
         mapping said internally unique element addresses to
         said external element addresses".

         However, none of the passages in the application as
         filed referring to "restricting movement" of media
         (i.e. original claims 1, 2, 8, and 9 and paragraph
         [0007]; see point 3.1 above) discloses that this is
         linked to the internal and external element addresses
         in any way.

         These claim features therefore extend beyond the
         content of the application as filed (Article 123(2)
         EPC).

         Moreover, it is unclear how the claimed mapping of
         internally unique element addresses to external element
         addresses could result in the claimed restricting of
         movement of media between data storage element slots
         (Article 84 EPC).

First auxiliary request

4.   *The invention as defined by claim 1*

4.1   Claim 1 of the first auxiliary request is directed to a
         data library adapted to be attached to a storage area
         network. The library contains a number of partitions,
         each partition including at least one data transfer

element and at least one data storage element slot. The
partitions share at least one media transport element
for moving media between slots and data transfer
elements. The library includes a library controller
that restricts movement of media between slots to slots
assigned to the same partition.

4.2   Each of the data transfer elements, data storage
        element slots and media transport elements is assigned
        an "internally unique element address".

        The library controller assigns a different "logical
        unit designation" to each partition and an "external
        element address" to each of the data transfer elements,
        data storage element slots and media transport
        elements.

4.3   For each partition, the number of data transfer
        elements, the number of slots and the assigned external
        addresses correspond to the numbers of data transfer
        elements and slots and to the element addresses of an
        existing data library model from a plurality of
        existing library models. The claim adds that this
        allows external software configured to access a data
        library of the existing data library model to access
        the data library.

4.4   The board notes that SCSI-compliant data libraries
        accept the "move medium" command for moving media
        between data transfer and data storage elements of the
        library, which are specified by means of "element
        addresses". The "internal" element addresses of the
        claim refer to the actual addresses of the elements of
        the physical data library. The "external" element
        addresses refer to the element addresses of the data
        library being emulated. Emulation of the "move medium"

command is therefore achieved by mapping the external
addresses specified in a "move medium" command received
from external software to the corresponding internal
element addresses (see paragraph [0029] of the
application as filed).

5.   *Inventive step*

5.1   Document D4 discloses a data library system, which is
        schematically shown in Figures 1 to 3. The system
        comprises a server machine 12 communicating through a
        SCSI bus with data library 14. The data library
        includes a library unit 16 (paragraph [0009]), which
        has a recording medium storage section 30 and a
        recording medium reproduction section 32 (paragraph
        [0011]). The recording medium storage section 30
        contains 600 storage element slots ("pallets") 34 and
        is divided into three storage stations 30_0, 30_1 and
        30_2, respectively containing 300 slots for CD-ROMs, 150
        slots for DVD-RAMs and 150 slots for DVD-ROMs
        (paragraph [0012]). The recording medium section 32 is
        divided into three reproduction stations 32_0, 32_1 and
        32_2 corresponding to the three types of recording media
        (CD-ROMs, DVD-RAMs and DVD-ROMs), each station
        including one or more data transfer elements ("drives")
        (paragraph [0013]). The library unit further includes a
        media transport element ("recording medium transfer
        section") for the transfer of recording media between
        slots (paragraph [0010]).

5.2   The three reproduction stations 32_0, 32_1 and 32_2 with
        their respective storage stations 30_0, 30_1 and 30_2 form
        partitions or "virtual units" 36_0, 36_1 and 36_2
        (paragraph [0014]). The library unit 16 includes a
        library controller 40, which is logically divided into
        three controls 40_0, 40_1 and 40_2 with logical unit

numbers LUN0, LUN1 and LUN2 corresponding to the
partitions 36_0, 36_1 and 36_2 (paragraph [0016]).

5.3   The library controller restricts movement of CD-ROMs
        between slots to slots of storage station 30_0
        (paragraphs [0019] and [0020]). Likewise, movement of
        DVD-RAMs and DVD-ROMs between slots is restricted to
        slots of their respective storage stations 30_1 and 30_2
        (paragraph [0020]).

5.4   The library unit is presented to the server machine 12
        as three library units corresponding to the partitions
        36_0, 36_1 and 36_2 (paragraph [0018]).

5.5   Since the data library 14 can be accessed via the SCSI
        protocol, it is "adapted to be attached to a storage
        area network", for example via a SCSI/FC bridge.
        Paragraph [0024] in fact discloses that the data
        library 14 and the server machine 12 may be connected
        via a fibre-channel network.

5.6   The data library of claim 1 therefore differs from the
        data library disclosed in document D4 in that

        -    internally unique element addresses are assigned to
             the data transfer elements, the data storage
             element slots and the media transport elements;
        -    external element addresses are assigned to the data
             transfer elements and the data storage element
             slots;
        -    the library controller maps the internally unique
             element addresses to the external addresses; and
        -    for each partition, the number of data transfer
             elements, the number of data storage element slots
             and the external addresses correspond to the
             respective numbers and element addresses of an

existing data library model from a plurality of
existing library models.

5.7   These features have the effect that a computer
configured to access a data library of the existing
data library model need not be reconfigured to access
the claimed data library.

The problem to be solved may therefore be formulated as
how to modify the data library of document D4 so as to
allow a computer to access the data library without
reconfiguration.

5.8   The skilled person, starting from document D4 and faced
with this problem, would consult document D2, which
discloses a data library that has a virtual
configuration different from its physical configuration
and is presented to host computer systems as a
conventional data library with a physical configuration
identical to the virtual configuration (see abstract).
Document D2 explains that this avoids "complicating the
set-up, maintenance, or creation of application
software utilizing the library" (column 9, lines 30
to 40).

To achieve this goal, the library's response to host
commands must be altered (column 9, lines 44 to 49). In
particular, to correctly deal with a SCSI move medium
command as shown in Figure 10, the library's controller
has to "remap source and destination addresses from the
virtual configuration seen by the host to the
appropriate physical resources allocated to that
host" (column 9, lines 58 to 62; column 7, lines 10
to 25).

In other words, the library controller maps external
element addresses corresponding to the configuration of
the "conventional data library" to the internally
unique addresses corresponding to the actual physical
configuration of the data library (and vice versa). And
it is self-evident that for the virtual configuration
to correspond to the physical configuration of a
conventional data library, the virtual configuration
needs to define the same number of data transfer
elements and data storage element slots.

Hence, document D2 discloses a SCSI-based solution to
the problem posed which is applicable to the SCSI-based
data library of document D4 and corresponds to the
solution proposed in claim 1. The skilled person would
therefore apply the teaching of document D2 to the data
library of document D4 and thereby arrive at the
subject-matter of claim 1 without the exercise of
inventive skill.

5.9   Hence, the subject-matter of claim 1 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 Chairwoman:

K. Götz-Wein   A. Ritzka

Decision electronically authenticated