Internal distribution code:
(A) [-] Publication in OJ
(B) [-] To Chairmen and Members
(C) [-] To Chairmen
(D) [X] No distribution

**Datasheet for the decision
of 2 May 2017**

Case Number: T 2097/11 - 3.5.06

Application Number: 06801158.4

Publication Number: 1917585

IPC: G06F9/46, G06F11/14

Language of the proceedings: EN

Title of invention:
APPLICATION SERVER DISTRIBUTING THE JOBS TO VIRTUAL
ENVIRONMENTS RUNNING ON DIFFERENT COMPUTERS

Applicant:
Hewlett Packard Enterprise Development LP

Headword:
Application server/HEWLETT PACKARD

Relevant legal provisions:
EPC 1973 Art. 56

Keyword:
Inventive step - (no)

Decisions cited:

Catchword:

D E C I S I O N
of Technical Board of Appeal 3.5.06
of 2 May 2017

Appellant: (Applicant)	Hewlett Packard Enterprise Development LP 11445 Compaq Center Drive West Houston, TX 77070 (US)
Representative:	Rees, Simon John Lewis Haseltine Lake LLP Redcliff Quay 120 Redcliff Street Bristol BS1 6HU (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 10 May 2011 refusing European patent application No. 06801158.4 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	W. Sekretaruk
Members:	M. Müller
	G. Zucka

Summary of Facts and Submissions

I.   The appeal lies against the decision of the examining
        division, with reasons dispatched on 10 May 2011, to
        refuse European patent application No. 06 801 158.4 for
        lack of compliance with Articles 123(2) and 84 EPC. The
        decision also mentioned *inter alia* document

        D1: US 2005/081097 A1,

        but did not rely upon it in its reasons. However, with
        its summons to oral proceedings, dated 26 October 2010,
        the examining division had argued why it considered
        then claim 1 to lack inventive step over D1.

II.   Notice of appeal was filed and the appeal fee was paid
        on 27 June 2011. A statement of grounds of appeal was
        received on 8 September 2011. The board understands the
        appellant's requests to be that the decision under
        appeal be set aside and that a patent be granted on the
        basis of claims according to a main or one of two
        auxiliary requests (claims 1-21, 1-18 and 1-21,
        respectively) as filed with the grounds of appeal.

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

        "An application server system (10), comprising:
           one or more clients (40) operable to execute one or
        more applications, each client executing one or more
        virtual client environments (50); and
           a main server (20) operable to control the one or
        more clients (40) and to manage the distribution of
        virtual client environments over various client
        computers (40); and
           each virtual client environment comprising:

one or more application objects (56), each application object associated with an application being executed at the client and operable to store operating information related to the associated application, each application has one or more associated processes (58; 60; 62), each process having an associated process companion (64; 66; 68); and

a lightweight server (54) operable to:

instantiate the application objects (56) in response to receiving configuration information from the main server (20);

receive operating information from the application objects (56) relating to the operation of the associated applications and communicate the received information to the main server (20); and

control the applications based on at least one of: (i) the configuration information received from the main server and (ii) further instructions received from the main server (20) after instantiation of an application object (56) to control each process (58; 60; 62) by actions applied to the associated process companion (64; 66; 68)."

Claim 1 of the first auxiliary request differs from claim 1 of the main request by adding that the virtual client environment further comprises

"... the applications, process companion and jobs may contain and handle meta-information, the meta-information comprising information about the applications, processes and groups of applications running together as jobs,; [sic] ..."

and by claiming a "virtual client environment server (54)" instead of a "lightweight server (54)".

Claim 1 of the second auxiliary request reads as
follows:

"An application server system (10), comprising:
   a main server (20); and
   one or more clients (40) controlled by the main
server and operable to execute one or more
applications, each client executing one or more virtual
client environments (50), each virtual client
environment comprising:
      one or more application objects (56), each
application object associated with an application being
executed at the client and operable to store operating
information related to the associated application; and
      a lightweight server (54) operable to:
         instantiate the application objects (56) in
response to receiving configuration information from
the main server (20);
         receive operating information from the
application objects (56) relating to the way the
associated application object is to be deployed via
invocation of a define application macro and its
corresponding passed arguments in the application code
and communicate the received information to the main
server (20); and
         control the applications based on at least one
of: (i) the configuration information received from the
main server and (ii) further instructions received from
the main server (20) after instantiation of an
application object (56)."

All three requests also comprise a corresponding
independent method claim 11 or 12.

IV.   In an annex to a summons to oral proceedings, the board
       informed the appellant of its preliminary opinion that

claim 1 of all three requests lacked inventive step over D1. Objections under Articles 84 EPC 1973 and 123(2) EPC were also raised.

V.   In response to the summons, the appellant did not file any amendments or arguments. Instead, with letter of 27 April 2017, the appellant informed the board that neither the applicant nor its representative would be attending the scheduled hearing.

VI.   The oral proceedings took place as scheduled and, as announced, in the appellant's absence. At the end of the oral proceedings, the chairman announced the board's decision.

Reasons for the Decision

Decision in the appellant's absence

1.   According to Article 15(3) RPBA the board is not obliged to delay any step in the proceedings, including its decision, by reason only of the absence at the oral proceedings of any party duly summoned. Therefore, and also in accordance with Article 15(3) RPBA, the board is treating the appellant as relying only on its written case. The following reasons correspond substantially to those given in the board's preliminary opinion and to which the appellant had chosen not to respond.

The invention

2.   The invention relates to an "enterprise application server" (EAS) "and method" (see page 1, lines 4-5; all references being to the application as originally

filed). The EAS is composed of several computers, specifically a "main server" and a number of client computers to which the main server delegates its tasks (see figure 1).

2.1   The "main server" transmits "virtual client environments" (VCEs), preferably Lisp "worlds", to the client computers (see page 4, lines 11-12 and 27-29; page 6, lines 7-16; page 10, lines 17-18), and then starts, monitors and controls applications on the VCEs (see page 7, lines 12-18). There may be more than one VCE per client, several applications per VCE and several processes per application (see figures 3 and 4; page 4, lines 29-31; page 5, lines 1-14).

2.2   Each VCE provides a component referred to as a "lightweight server" which acts as an interface between the main server and the applications within the VCE (page 5, lines 4-7; page 10, line 33, to page 12, line 8; page 12, lines 18-20; figure 3, no. 54). In other words, the lightweight server (effectively on behalf of the main server) deploys and controls the applications (via associated application objects) and returns runtime information about user, applications and processes to the main server.

2.3   Each process has an associated "process companion" (see figure 4 and page 13, paragraph 2). The description states that process companions are "data elements" (page 5, lines 9-11) but does not define them any further, except to say that the "activity [of each process] may be controlled and monitored by actions applied to the process companion" (*loc. cit.*).

2.4   The application states that the EAS architecture uses "a level of abstraction (meta-information)" to separate

an application's business functionality and its
deployment. This "meta-information" is said to be about
the applications, processes and jobs, and to be handled
by "application objects, process companions and jobs".
"These objects" are also said to be controlled by the
EAS system and to respond to this control "in a
specific way" (see page 3, line 29, to page 4, line 5).

The prior art

3.   D1 discloses a distributed computing architecture with
          a "distributed (computing) management server" and
          several worker clients (see e.g. figures 1 and 2A). The
          server sends the applications and job parameters to the
          clients and receives "job results" from them (see
          paragraph 40). The software structure of a worker
          client is depicted in figure 3B. Each client provides
          an "environment" (see esp. the grid infrastructure
          (33), the worker client infrastructure (35) and the
          runtime environment (32) possibly comprising a Java
          virtual machine; see paragraphs 75-78). Moreover, each
          client comprises a "work unit transfer component" (40)
          for receiving applications and job parameters and for
          sending results (see paragraph 87), and a "work engine
          task processing component" for accepting and executing
          jobs (paragraph 88).

Article 123(2) EPC

4.   The contested decision found a lack of compliance with
          Article 123(2) EPC because the application (esp. on
          pages 3 and 4) did not disclose "meta-information
          objects", which the examining division interpreted as
          objects containing only such meta-information (see the
          decision, reasons 1.1.2, F3b). The term deleted or
          replaced in the claims on file, this objection has

become moot. The further objection under Article 123(2)
EPC which the board raised of its own volition in the
summons to oral proceedings is a minor one and will
therefore not be considered in this decision.

Claim construction

5.   The claims contain several terms which must be
        construed broadly. For the purposes of this decision,
        the board leaves open whether they are clear.

5.1   Claims 1 and 11 of the main request mention a
        "lightweight server". The board agrees with the
        decision (see reasons 3.1) that the limitations
        implied by referring to a server as "lightweight" are
        undefined. However, the board accepts the appellant's
        position that the term "lightweight" is merely used to
        assist the reader and that the relevant features of the
        main server and the lightweight server are those
        defined in the remainder of the claim (see the grounds
        of appeal, point 7.3).

5.2   The term "process companion" is mentioned in claims 1
        and 11 of the main and the first auxiliary request but
        not defined. The main request merely specifies that
        each process is controlled "by actions applied to the
        associated process companion". In the board's view,
        this makes the claimed process companion
        indistinguishable from a process identifier which is
        referred to whenever an operation is to be performed on
        a particular process. The first auxiliary request
        further states that the process companion may "contain
        and handle meta-information". This suggests that the
        process companion is an "object" which contains
        information other than the process identifier. The role
        of that information is, however, undefined.

5.3   In fact, claims 1 and 11 of the first auxiliary request
        state merely that the "meta-information" is "about the
        applications, processes and groups of applications",
        but fail to define the role of this meta-information in
        the context of the claimed system and method.

5.4   The term "configuration information" is used but not
        specifically defined in the claims. This information is
        stated to be "received from the main server" and used
        at the client side for the instantiation of application
        objects and to "control the applications" (see e.g.
        claim 1 of the main request, first and third paragraphs
        defining the lightweight server). In the board's view,
        however, the claimed use of the "configuration
        information" does not imply more than that the server
        instructs the clients which application objects to
        create (i.e. "instantiate").

5.5   Also the broad term "operating information" subsumes
        virtually any kind of information relating to the
        application objects being executed. For instance, it
        can refer to the computation results or to data needed
        for performance monitoring (see also page 7,
        lines 15-16). The claims do not specify what the main
        server uses the operating information for, or how.

6.   In view of the foregoing, the board considers that the
        claimed subject-matter comes down to a system (and
        related method) comprising

        -   a main server,
        -   several clients,
        -   each client running one or more virtual client
            environments (VCEs) each being distributed from
            (i.e. on "instruction" by) the main server,

- each VCE running several applications and
  associated processes, each created on "instruction"
  by the main server and controlled ultimately by the
  main server, and each returning "operating
  information" to the main server, and
- each VCE having a (component called a) "lightweight
  server" or "virtual client environment server"
  which acts as an interface between the server and
  the applications, objects and processes.

Inventive step

7.   The board is of the opinion that D1 is a suitable
        starting point for the assessment of inventive step.

8.   The board agrees with the following central assumptions
        of the examining division, namely that

- D1 discloses that each client comprises a "client
  environment" (see the components of the archi-
  tecture depicted in figure 3B and, in particular,
  the runtime environment) which can be identified
  with the claimed "virtual client environment" (see
  D1, paragraphs 75-78, and the summons of
  26 October 2010, page 5, feature F2), except that
  D1 does not disclose that their "distribution" is
  managed by the server; and also that
- the "work unit transfer component" 40 and the "work
  engine task processing component" 41 of D1
  correspond, in combination, to the lightweight
  server in that the former component receives
  instructions from the main server and returns
  information to it and the latter component executes
  the jobs (see D1, paragraphs 40, 87 and 88, and the
  summons of 26 October 2010, page 6, feature F3b).

Main request

9.   Accordingly, the board considers that claim 1 of the
        main request differs from the subject-matter of D1 in
        that

        (a) the main server manages the distribution of the
            client environments (VCEs) to the clients,
        (b) more than one client environment (VCE) is available
            on each client, and
        (c) an application has several processes and each has a
            process companion enabling control of the process.

9.1   The board takes the view that these differences solve
        different, essentially unrelated problems. Feature (a)
        may be seen as making sure that the client environments
        are up-to-date. Feature (b) may be advantageous for
        security reasons because it helps keep applications
        separate from each other, but it may also simply
        reflect the fact that different applications might
        require different environments. Feature (c) serves to
        structure an application, for instance in view of
        parallelisation.

9.2   As regards feature (a), the board takes the view that
        it would be obvious to provide some sort of automated
        service for "distributing" updates of the client
        environments, and that locating this service at the
        claimed main server is one obvious choice.

9.3   As regards feature (b), the board takes the view that
        the skilled person is well aware of the potential
        advantages of having several separate environments on
        one physical client device, including the two
        mentioned, and would therefore resort to this measure

without the need to exercise inventive skill if circumstances so required.

9.4   And as regards feature (c), the board takes the view that the use of processes, process control and process identifiers is well-known in the art of programming.

9.5   In summary, the board concludes that features (a)-(c) do not establish that the subject-matter of claim 1 involves an inventive step over D1, Article 56 EPC 1973.

10.   Under these circumstances the question can be left open whether any of the above differences solves a technical problem at all. The board would merely note that in the annex to its summons it expressed doubts about that and also as to whether the claimed invention achieved the effects alleged by the appellant, namely "increased flexibility whilst maintaining reliability of a software operational environment" (grounds of appeal, point 7.5.4.1) because "applications" could be "more easily deployed" in the claimed architecture, as well as "hardware independence" and "scalability" (point 7.5.4.2). In not responding to the board's preliminary opinion, the appellant did nothing to dispel these doubts.

First auxiliary request

11.   As mentioned above, claim 1 does not define the role played by the added meta-information in the context of the claimed server system. Therefore, the additional feature is insufficient to overcome the inventive-step objection presented above, so that also claim 1 of the

first auxiliary request lacks inventive step over D1,
Article 56 EPC 1973.

Second auxiliary request

12.   The features added to claim 1 of the second auxiliary
         request specify that the lightweight server "receive[s]
         operating information from the application objects
         [...] relating to the way the associated application
         object is to be deployed" and that a "define
         application macro" is invoked for this purpose.

12.1   D1 discloses that the work unit transfer component
         "provides the mechanism to receive the application
         itself, job parameter and input files" (paragraph 87).
         In general terms, this implies - or at least suggests -
         the provision of "operating information" relating to
         the deployment of the application to the worker client.
         Using a "define application macro" for this purpose
         appears to be a straightforward option for the person
         skilled in the art of programming.

12.2   Claim 1 of the second auxiliary request thus likewise
         lacks inventive step over D1, Article 56 EPC 1973.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

S. Sánchez Chiquero   W. Sekretaruk

Decision electronically authenticated