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Datasheet for the decision of 19 September 2019

Case Number: T 1359/13 - 3.5.01

Application Number: 02731698.3

Publication Number: 1402392

IPC: G06F15/173

Language of the proceedings: EN

Title of invention:
SYSTEM AND METHOD FOR WEB SERVER WITH A RECONFIGURABLE PROCESSOR OPERATING UNDER SINGLE OPERATION SYSTEM IMAGE

Applicant:
SRC Labs, LLC

Headword:
Parallel processing at an Internet site/SRC LABS

Relevant legal provisions:
EPC Art. 56, 84, 123(2)
RPBA Art. 12(4)

Keyword:

Admissibility of requests filed with grounds of appeal (yes)
Inventive step - main request (no) - first auxiliary request (no) - second auxiliary request (yes)
Amendments - added subject-matter (no)
Claims - clarity (yes)

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Case Number: T 1359/13 - 3.5.01

D E C I S I O N
of Technical Board of Appeal 3.5.01
of 19 September 2019

Appellant: (Applicant)	SRC Labs, LLC 102 North Jonathan Boulevard Chaska, MN 55318 (US)
Representative:	Driver, Virginia Rozanne Page White & Farrer Bedford House John Street London WC1N 2BF (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 29 January 2013 refusing European patent application No. 02731698.3 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	W. Chandler
Members:	A. Wahrenberg
	Y. Podbielski

Summary of Facts and Submissions

I. This decision concerns the appeal filed by the applicant against the decision of the examining division to refuse the European patent application No. 02731698.3 (published as WO 03/001396 A1).

II. The examining division refused the application on the grounds of added subject-matter (Article 123(2) EPC), lack of clarity and support by the description (Article 84 EPC), and lack of inventive step (Article 56 EPC) in view of D1 (US 5715453 A) and D4 (Jean, Jack S.N.: "Dynamic Reconfiguration to Support Concurrent Applications", IEEE TRANSACTIONS ON COMPUTERS VOL. 48 NO. 6, JUNE 1999).

III. In the statement of grounds of appeal, the appellant requested that the decision of the examining division be set aside and that a patent be granted on the basis of the main request, the first auxiliary request, or the second auxiliary request, filed therewith.

IV. In the communication accompanying the summons to oral proceedings, the Board raised the issue of whether the requests filed with the grounds of appeal should be admitted into appeal proceedings (Article 12(4) RPBA). The Board also made preliminary observations on clarity (Article 84 EPC) and added subject-matter (Article 123(2) EPC).

V. In a letter of reply, the appellant submitted arguments on the questions of admittance, clarity, and added subject-matter.

VI. In the oral proceedings it was discussed whether the subject-matter of claim 1 of the main request, the first auxiliary request, and the second auxiliary request involved an inventive step in view of documents D1 and D4.

The appellant's final requests were as follows: that the decision under appeal be set aside and a patent be granted on the basis of the main request or the first auxiliary request, both filed with the grounds of appeal, or on the basis of the second auxiliary request filed during the oral proceedings before the Board.

VII. Claim 1 of the main request reads:

A method for processing data at an internet site comprising:

providing a reconfigurable server (308) at said site incorporating at least one microprocessor and a number of reconfigurable processing elements;

controlling said at least one microprocessor and the reconfigurable processing elements by a single system image of an operating system

receiving N data elements at said site relative to a remote computer coupled to said site;

instantiating N of said reconfigurable processing elements at said reconfigurable server; and

processing in parallel said N data elements with corresponding ones of said N reconfigurable processing elements.

VIII. The first auxiliary request differs from the main request by the replacement of "instantiating" in claim 1 with "the at least one microprocessor issuing a command to".

IX. Claim 1 of the second auxiliary request reads:

A method for processing data at an internet site comprising:

providing a reconfigurable server (308) at said site incorporating at least one microprocessor and a number of reconfigurable processing elements;

receiving N data elements at said site relative to a remote computer coupled to said site, wherein said N data elements comprise demographic data pertaining to said remote computer;

instantiating N of said reconfigurable processing elements at said reconfigurable server;

processing in parallel said N data elements with corresponding ones of said N reconfigurable processing elements;

selecting a content of said site in response to said processed N data elements, and

transmitting said content to said remote computer.

X. Claim 3 of the second auxiliary request reads:

A reconfigurable server (308) configured to accelerate access time of a remote computer to an internet site, the server comprising:

at least one microprocessor and a number of reconfigurable processing elements, and configured to:

receive N data elements from said remote computer, wherein said N data elements comprise demographic data pertaining to said remote computer;

instantiate N of said reconfigurable processing elements at said reconfigurable server;

process in parallel said N data elements with corresponding ones of said N reconfigurable processing elements;

select a content of said site in response to said processed N data elements; and

transmit said content to said remote computer.

Reasons for the Decision

1. *The invention*

1.1 The invention concerns the accelerated processing of data for generating dynamic content at an Internet site.

1.2 Many websites provide dynamic content that is generated based on user data. For example, an e-commerce website may generate its content based on demographic data pertaining to the user (page 1, lines 9 to 14, of the published application). In this scenario, the web server must process the demographic data elements, which leads to a delay. The aim of the invention is to

reduce the delay by speeding up the processing of data (page 1, line 15, to page 2, line 1; page 2, lines 15-19).

1.3 The solution of the invention is to provide a reconfigurable server (308) that processes N data elements in parallel using corresponding ones of N reconfigurable processing elements (Figure 14; page 37, lines 1 to 20).

The reconfigurable processing elements in claim 1 (all requests), and in Figure 14, correspond to the multi-adaptive processing elements (MAPs) described throughout the description (see page 37, lines 7 to 12). The MAPs are configured, or, differently expressed, "instantiated" to perform a particular processing task (*ibid*). Furthermore, the MAPs may be controlled by a single system image of the server's operating system (page 37, lines 12 to 15).

2. *The decision under appeal*

2.1 The examining division refused the application on the grounds of added subject-matter (Article 123(2) EPC), lack of clarity and support by the description (Article 84 EPC), and lack of inventive step in view of the combination of D1 and D4 (Article 56 EPC). The decision was based on claims that are not maintained on appeal. In the requests filed with the grounds of appeal, the features objected to under Article 123(2) and 84 EPC are no longer present. Furthermore, the claims in the requests filed with the grounds of appeal contain the new feature of processing N data elements *in parallel* with corresponding ones of N reconfigurable processing elements. The decision of the examining division did

not deal with this aspect.

3. *Admittance of the main and first auxiliary request filed with the grounds of appeal (Article 12(4) RPBA)*

3.1 During the appeal proceedings, it was discussed whether the amendment adding the words *"in parallel"* to the claims of the main and first auxiliary request constituted an inadmissible shift towards subject-matter that had not been examined. Having considered the appellant's arguments, the Board admits the appellant's requests into the appeal proceedings. Although not explicitly claimed or presented as an inventive concept during the examination proceedings, parallel data processing was implicit within the claims and arguments presented to the examining division. Therefore, the amendment is a clarification, made in response to the examining division's objection of lack of inventive step that helps to understand the difference between the claimed subject-matter and the prior art.

4. *Main request*

4.1 Claim 1 of the main request is directed to a method for processing data at an Internet site comprising receiving the N data elements at the Internet site relative to a remote computer coupled to the site, and processing those N data elements in parallel with the corresponding ones of the N reconfigurable processing elements (see paragraph 1.3 above).

In claim 1 of the main request, there is no real connection between the Internet site and the parallel data processing. The claim defines neither the data elements, nor the processing of those data elements,

and the claim is silent as to what the server does with the processed data. Thus, claim 1 merely defines parallel data processing by a reconfigurable server that is connected to the Internet and that receives the data to be processed from a remote computer via the Internet.

4.2 Document D4 discloses parallel processing of N data elements with corresponding ones of N reconfigurable processing elements (see Figure 2 and section 2.1). The hardware platform in Figure 2 of D4 includes a microprocessor (host computer) and a plurality of reconfigurable processing elements (XMODs) that can each be configured to perform a certain data processing task, for example MPEG encoding of image frames (section 4.1.3).

4.3 The appellant argued that the computing platform in Figure 2 of D4 included neither a microprocessor, nor a plurality of reconfigurable processing elements for processing data elements in parallel. The XMODs were there to allow the reuse of hardware to allow more applications to be accommodated and to speed up application execution by permitting concurrent applications to be supported.

The Board does not find the appellant's arguments to be convincing, for the reasons set out in paragraph 4.2 above.

4.4 The subject-matter of claim 1 of the main request differs from D4 in that the reconfigurable computing platform is a server that is connected to the Internet, and the data to be processed is received from a remote computer via the Internet.

4.5 The problem solved by this is simply to allow data to be received from a remote computer and to provide a service (the general functionality of a server).

4.6 In the Board's view, it would have been obvious for the skilled person seeking to solve the above problem to turn the computing platform in D4 into an Internet server. It would also have been obvious to receive the data to be processed from a remote computer via the Internet. Consequently, the skilled person would have arrived at the subject-matter of claim 1 of the main request without inventive skill.

4.7 For these reasons, the Board judges that the invention as defined in claim 1 of the main request lacks an inventive step (Article 56 EPC).

5. *First auxiliary request*

5.1 The first auxiliary request differs from the main request in that, instead of the step of "instantiating" N of the reconfigurable processing elements, the method of claim 1 comprises the "microprocessor issuing a command" to N of the reconfigurable processing elements.

5.2 In the Board's view, this feature is disclosed in D4 (the application program running on the host computer calls functions to initialize, load, and execute the user FPGA designs in the XMODs, see point 3 in the penultimate paragraph of section 2.2).

Therefore, the subject-matter of claim 1 of the first auxiliary request is no more inventive than that of claim 1 of the main request.

Consequently, the first auxiliary request is unallowable for lack of inventive step (Article 56 EPC).

6. *Second auxiliary request*

6.1 In the method of claim 1 of the second auxiliary request, the N data elements comprise demographic data pertaining to the remote computer and the method includes the step of selecting the content of the Internet site in response to the processed N data elements, and transmitting the selected content to the remote computer. Claim 3 defines the corresponding apparatus.

Thus, in the second auxiliary request, there is a link between the data, the data processing, and the service provided by the server: The server provides Internet-site content that is selected in response to the processed N demographic data elements.

6.2 A basis in the application as filed for the independent claims of the second auxiliary request can be found in Figure 14 and on page 37, lines 1 to 20. Thus, the second auxiliary request complies with Article 123(2) EPC.

6.3 In the Board's view, document D4 is not a suitable starting point for assessing the inventive step of the subject-matter of claim 1 of the second auxiliary request. The reason for this is that D4 does not deal with Internet services involving the generation of content in response to the processed data. Thus, it is not possible to get from D4 to the invention without hindsight.

D1 is a more promising starting point for inventive step. It discloses a web server that generates dynamic content in response to data (for example demographic data, see column 1, lines 36 to 46) received from a remote computer. The received data at some stage gives rise to a database query. The web server in D1 has N language processors for processing N types of queries, for example queries in different languages (Figures 1 and 7; column 4, lines 12 to 36). The language processors in D1 are hard-coded to service queries for a particular data source and in a particular data processing language (column 7, lines 47 to 56).

6.4 Claim 1 of the second auxiliary request differs from D1 by:

(a) the processing elements (corresponding to the language processors in D1) being reconfigurable;

(b) the instantiation of N of the reconfigurable processing elements;

(b) the processing in parallel of the N data elements by corresponding ones of the N reconfigurable processing elements.

6.5 In the oral proceedings, the appellant defined the technical problem solved by the invention as how to provide targeted dynamic content in a faster manner. The Board accepts the appellant's formulation of the problem.

6.6 In the decision under appeal, the examining division identified similar differences between the subject-matter claimed in the main request and D1. The examining division argued that those differences would

have been obvious, because they were disclosed in D4. However, the Board takes the view that the skilled person would not have considered the teachings of D4 when looking to solve the problem of speeding up the generation of dynamic content at an Internet site. The aim of D4 is to reduce application execution time by having multiple applications running concurrently. D4 mentions web browsers as an example of such an application. However, it does not deal with web servers, let alone the processing of data for generating dynamic content.

6.7 For these reasons, the Board judges that the subject-matter of claim 1 of the second auxiliary request involves an inventive step (Article 56 EPC). The same applies for claim 3.

6.8 The Board furthermore considers that claims 1 and 3 are clear (Article 84 EPC).

The skilled reader would understand the term "instantiating", in the light of the whole context of the claim, and of the description (page 37, lines 7 to 12), as referring to the configuring of the reconfigurable processing elements.

Furthermore, it is clear that, in order to perform parallel processing, N has to be understood as a number greater than 1.

Order

For these reasons it is decided that:

The decision under appeal is set aside.

The case is remitted to the examining division with the order to grant a patent on the basis of the second auxiliary request filed during the oral proceedings before the Board and a description to be adapted thereto.

The Registrar: The Chairman:

T. Buschek W. Chandler

Decision electronically authenticated