BL O/252/06

6th September 2006

PATENTS ACT 1977

APPLICANT Sun Microsystems, Inc.

ISSUES Whether patent application GB 2 392 279 A
i) has clearly defined claims
ii) relates to a patentable invention
iii) conflicts with another GB application

HEARING OFFICER Stephen Probert

DECISION

Introduction

1 This decision concerns a patent application (GB 0324568.5) that had (principally) three different objections outstanding against it when the period for putting the application in order expired in September 2005.

2 As summarised in the examiner's most recent official letter, the objections were that:

a) the invention is excluded from patentability because it is a program for a computer as such, and
b) the claims are not clear, and
c) this is one of two applications for a patent for the same invention having the same priority date (and filed by the same applicant).

3 Following on from the clarity objection, the examiner reports that he has been unable to rule out the possibility that the claims lack novelty or an inventive step. These are issues that will have to be considered further (ie. by the examiner) if this application survives the three attacks outlined above; I will not be considering novelty or inventive step in this decision.

4 A hearing was originally appointed in November 2005, and later rearranged for June 2006, but the applicant decided on each occasion that it was not necessary to attend a formal hearing. Instead, the applicant's Patent Attorney filed some written submissions, and asked me to consider his previous arguments as expressed in the earlier correspondence on the official file. In order to assist the applicant with the preparation of submissions, the hearings clerk advised the applicant on my behalf that I would only require submissions in relation to the second and third of the examiner's objections. Having read

the application beforehand, I had come to the preliminary view that this application should not be regarded as relating to a program for a computer as such. Consequently I did not specifically invite the applicant to make submissions on the issue (ie. the examiner's first objection).

The Invention

5 The invention concerns what might be described as a rationalised (or reduced) set of Java® Bytecode instructions. I have already described the invention in some detail in an earlier decision, BL O/057/06, concerning a related application. To recap briefly, the invention provides a reduced set of virtual instructions that can nevertheless represent the complete set of operations performed by the conventional Java Bytecode instruction set.

The Claims

6 There are three independent claims in the application. Claim 1 is directed to an apparatus, and claim 35 to a corresponding method. Claim 18 defines a computer readable medium carrying a set of virtual machine instructions. Claims 1 and 35 are sufficiently similar that I need only refer to one of them. Claim 18 is worth reciting here because its scope may be subtly different to the apparatus and method claims. Claims 1 and 18 are worded as follows:

> 1. A computer apparatus configured to run a virtual machine, the apparatus comprising:
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> means for running a virtual machine configured to execute instructions of a first set of virtual machine instructions, and instructions of a second set of virtual machine instructions; and
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> a computer readable medium storing instructions of said second set of virtual machine instructions for execution in said virtual machine;
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> wherein said first set of virtual machine instructions consists of Java (RTM) bytecode instructions;
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> said second set of virtual machine instructions represents a first number of instructions of said first set of virtual machine instructions;
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> said second set of the virtual machine instructions consists of a second number of virtual machine instructions, said second number being smaller than said first number; and
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> every one of the corresponding instructions of the first set of virtual machine instructions can be represented by at least one of the instructions in said second set of virtual machine instructions.
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> 18. A computer readable medium carrying a second set of virtual machine instructions suitable for execution in a virtual machine, the second set of virtual machine instructions representing a first number of corresponding instructions of a first set of virtual machine instructions that are also suitable for execution in said virtual machine,

wherein said first set of virtual machine instructions consists of Java (RTM) bytecode instructions;

said second set of virtual machine instructions consists of a second number of virtual machine instructions, said second number being smaller than first number, and

wherein every one of the corresponding Java(RTM) Bytecode executable instructions can be represented by at least one of the virtual machine instructions in said second set of virtual machine instructions.

Clarity

7 The examiner has reported that the claims of the application are unclear. This objection is based on section 14(5), the relevant parts of which are highlighted in bold below:

> **14(5) The claim or claims shall -**
> (a) define the matter for which the applicant seeks protection;
> (b) **be clear and concise;**
> (c) be supported by the description; and
> (d) relate to one invention or to a group of inventions which are so linked as to form a single inventive concept.

8 More specifically, the examiner indicated that the clarity objection arises because of an ambiguity in the last paragraph of each of the independent claims. As a result of this ambiguity, the examiner reports that there are two ways of construing the claims. The paragraph in question reads:

> "every one of the corresponding instructions of the first set of virtual machine instructions can be represented by at least one of the instructions in said second set of virtual machine instructions."

9 As I understand the examiner's point, this paragraph can be interpreted in two ways:

> i) every instruction in JAVA Bytecode can be represented by at least one ***individual*** instruction in the proposed instruction set, or
> ii) every instruction in JAVA Bytecode can be represented by one instruction ***or a combination*** of instructions from the proposed instruction set.

10 In other words, because of the expression "at least one", it is not clear how a plurality of instructions in the proposed instruction set (the "second set of virtual machine instructions") represents one instruction in JAVA Bytecode. Where there is a plurality of instructions from the proposed instruction set, does each 'new' instruction ***individually*** represent the JAVA Bytecode instruction, or do the plurality of 'new' instructions need to be executed as a ***combination*** in order to achieve the same result as the one JAVA Bytecode instruction?

11 I agree with the examiner that the claims, when considered in isolation, are unclear in this respect because the final paragraph is clearly capable of bearing either of two (materially different) constructions. However, when the claims are interpreted in the light of the description, in accordance with section 125(1), the position is much clearer. I have read the whole specification, as filed, and I could not find any support for the first of the two possible constructions outlined above, but there is at least one specific example given on page 17 of the specification (lines 5 to 16) where (in the words of the application) "two or more of the inventive virtual machine instructions can be combined to perform relatively more complicated operations in accordance with one embodiment of the invention". An example is then given of a conditional flow control operation conventionally executable by a single JAVA Bytecode instruction, that can be performed by executing two of the new instructions one after the other.

12 Thus, in my view, when the claims are read in connection with the description, the reader should have little or no difficulty determining how the claims should be construed. Therefore, in the particular circumstances of this case, I do not think the objection based on section 14(5) succeeds.

Double Grant

13 However, the examiner has reported that this is one of two applications for a patent for the same invention having the same priority date (and filed by the same applicant). This objection is based on section 18(5), which reads as follows:

> 18(5) Where two or more applications for a patent for the same invention having the same priority date are filed by the same applicant or his successor in title, the comptroller may on that ground refuse to grant a patent in pursuance of more than one of the applications.

14 The other application is GB 2391980 which was the subject of the earlier decision mentioned above[1]. It is not in dispute that these two applications have the same priority date (27 March 2001), nor that they were filed by the same applicant (Sun Microsystems, Inc.). It is also clear from a comparison of the two applications that the two descriptions are, for all practical purposes, identical. However, the claims of the two applications are, and always have been, different from each other. In an earlier set of written submissions (dated 12 April 2006), the applicant has argued that:

> "... considering claim 1 of the present application it can be seen that the characterising features of the independent claims of GB2391980 are absent. Indeed, claim 1 is silent as to the nature of the instructions. Thus, the claims of GB2391980 relate to a plurality of interrelated inventions, each invention being characterised by the type of instruction. In contrast, claim 1 [*of this application*] is directed to the broad concept of a virtual machine configured to execute instructions specified in two different instruction sets, the instruction sets having a predetermined relationship between one another.

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[1]BL O/057/06

> On this basis, it is respectfully submitted that the claims of the two applications do not relate to the same invention. Indeed, it is clear that the invention within a patent application is defined by its claims. Given that the claims of GB2391980 include features that are not included within the claims of the present application it is submitted that the two applications do not relate to the same invention."

15 I have looked again at the claims in GB2391980, and I agree that it is fair to say that they relate to a "plurality of interrelated inventions, each invention being characterised by the type of instruction". In the minds of some, this might raise the question: why then did the Office not object to plurality of invention? The answer (I presume) is that no such objection arises if (in the words of section 14(5)(d) - see paragraph 7 above) the claims relate to "a group of inventions which are so linked as to form a single inventive concept".

16 On this occasion, the single inventive concept that links the group of inventions in GB2391980 (the 'other' application) is not claimed on its own in that application. Instead, in that application, the single inventive concept is claimed several times, but with each claim characterised by a particular (and different) type of instruction. However, having compared the claims of these two applications, it is clear to me that the single inventive concept that links the group of inventions in the other application is nothing more or less than "the broad concept of a virtual machine configured to execute instructions specified in two different instruction sets, the instruction sets having a predetermined relationship between one another" — which (as the applicant agrees) is the subject of claim 1 of the present application. (For those who want to follow this comparison for themselves, I have included a selection of independent claims from the other application in an Annex at the end of this decision.)

17 It follows from what I have just said, that if the claims of these two applications had been filed in the same application, there could be no objection to lack of unity of invention. Bearing in mind again that the description of the invention contained in both applications is the same, it seems to me that claim 1 of the present application defines the crux of the invention, whereas each of the several independent claims of the other application defines the same invention but in the specific context of (ie. characterised by) a particular type of instruction.

18 Several of the dependent claims of the present application lend further support to this finding. For example, claim 10 reads:

> 10. An apparatus as recited in claim 1, wherein said second set of virtual machine instructions is suitable for execution in the virtual machine to load constant values on an execution stack, and the corresponding instructions of the first set of virtual machines instructions are also suitable for execution in the virtual machine to load constant values on an execution stack.

19 This construction of claim, which takes what the applicant has described as the "broad concept" of claim 1 but then narrows it by including (as a characterising feature) a type of instruction, is very similar to the independent

claims of the other application and would not have looked out of place if it had been filed in the other application. This is a significant, though not in itself conclusive, factor that I should bear in mind when deciding whether these two applications relate to the same invention.

20 Paragraph 18.95 of the Manual of Patent Practice helpfully sets out the current legal position in relation to section 18(5), and the approach I should adopt. Rather than attempt a paraphrase, it is convenient to quote the first part of this paragraph. It says:

> "18.95 The tests for determining whether two UK applications relate to the same invention are the same as for deciding under s.73(2) whether a 1977 Act patent conflicts with a European patent (UK). The phrase "for the same invention" under both s.18(5) and s.73(2) is regarded as embodying the long-standing principle that the same monopoly should not be granted twice over. Thus it covers not only the situation where respective applications contain claims of the same scope (including the case where these are claims dependent on quite distinct main claims) but also where the claims differ in the scope of their monopoly but not in substance. The degree of overlap which is allowable must be decided on the facts of the case, having regard to the state of the art, and the applicant may be able to show that there is a significant distinction between apparently conflicting claims."

21 In this case, I have no doubt that while the claims differ in the scope of their monopoly, they do not differ in substance. Indeed, I can see no reason why they were filed as separate applications in the first place. In both applications, the substance of the invention defined in the claims is an environment for a virtual machine configured to execute instructions specified in two different instruction sets, one of which is the conventional Java Bytecode instruction set and the other is a reduced set of instructions that can nevertheless represent the complete set of operations than can be performed by the JAVA Bytecode instruction set.

22 I can see no reason to regard these two applications as being for anything other than the same invention. The invention is claimed slightly differently in each application, but the substance is the same and the applicant has not been able to establish that there is a significant distinction between the two sets of claims.

23 In both cases, the date for putting the application in order has expired. Moreover, the result of my decision in relation to the other application was that it could go forward to grant. That being so, as matters stand, this application cannot be granted because of section 18(5). However, that is not the end of the matter, because the applicant has requested that the rule 34 period be extended under rule 100(2). Before determining this request, I need to deal with the examiner's remaining objection.

Excluded Matter - Program for a computer

24 As indicated above, the examiner has also reported that this application relates to a program for a computer as such. This objection is based on section 1(2) of the Act, and if it had succeeded, it would have meant that the invention described and claimed in this application was not an invention for

the purposes of the Act. This is the issue upon which I had formed a preliminary view in the applicant's favour, and nothing that I have read in the official file or the authorities brought to my attention has caused me to change that view.

25 Having found that, in substance, this application is for the same invention as GB2391980, it is perhaps not surprising that my confirmed view of this application, ie. whether it relates to a program for a computer as such, corresponds to the decision that I made in relation to GB2391980. I gave my reasons in relation to GB2391980 in an earlier decision (BL O/057/06), and there is nothing to be gained by reproducing them here. It is enough to say that for the reasons given in that earlier decision, I am satisfied that the invention claimed in this application is not excluded from patentability by section 1(2)(c).

Extending the Rule 34 Period - An irregularity under Rule 100(2)

26 In the most recent letter from their agent, the applicant requests that the Comptroller exercises his discretion under rule 100(2) to extend the period for putting the application in order, ie. the period prescribed by rule 34.

27 Rule 100(2) is couched in the following terms:

> (2) In the case of an irregularity or prospective irregularity-
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> (a) which consists of a failure to comply with any limitation as to times or periods specified in the Act or the 1949 Act or prescribed in these Rules or the Patents Rules 1968 as they continue to apply which has occurred, or appears to the comptroller is likely to occur in the absence of a direction under this rule;
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> (b) which is attributable wholly or in part to an error, default or omission on the part of the Patent Office; and
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> (c) which it appears to the comptroller should be rectified,
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> the comptroller may direct that the time or period in question shall be altered but not otherwise.

28 The applicant's request for discretion under rule 100(2) relies on the fact, which is not in dispute, that the Office did not make it clear to the applicant that the objection under section 18(5) ("conflict" or "double grant") still applied. This objection was initially raised in the first examination report dated 2 September 2004. The applicant responded on 2 March 2005, indicating that they intended to delete certain claims from the other application and noting that the conflict between these two applications would "therefore no longer apply".

29 In subsequent examination reports, the examiner concentrated on what appeared to him at the time to be the more significant and potentially fatal objection relating to excluded matter. Unfortunately, the conflict between the two applications was not mentioned again until after the rule 34 period had elapsed, and the applicant was no longer in a position to overcome the objection by amending one or other of the applications.

30 Therefore, the applicant submits that this failure to make it clear that the objection under section 18(5) still remained, represents an error, default or omission on the part of the Office; because it is usual for examiners to only drop objections (or stop maintaining them) when they are content that the objection has been overcome. According to the Manual of Patent Practice (paragraph 123.10), requests such as this should be referred to a Divisional Director. I have considered this 'guidance' from the Manual, but as far as I can see, there is no sound legal basis for it. What follows is therefore entirely my own decision.

31 I note that a very similar issue arose in the *Howmet* case[2], where Pumfrey J said (at paragraph 13):

> "It seems to me that a straightforward approach to the exercise of a discretion in a case of this description, once it is accepted that there has been a relevant error, default or omission on the part of the Office, is to ask whether, had the Office done what it should have done, the applicant would have taken the step closed to him in the events that have happened."

32 As I have already stated, it is a matter of plain and simple fact that the objection under section 18(5), first raised in September 2004, was not mentioned again until after the rule 34 period expired — six months after, in March 2006 to be precise. The applicant says that if they had known that the objection was still outstanding, they would have taken steps to overcome the objection. I accept this. Moreover, if it had not been possible to overcome the objection (for whatever reason) within the rule 34 period, I have no doubt that the applicant would have done everything possible to extend the period in order to "keep the ball in play" so to speak. However, now that the rule 34 period has expired, both of these steps are closed to him.

33 At paragraph 15 of *Howmet*, Pumfrey J went on to say:

> " Once it has been shown that the applicant would not have failed to take the step in question if the Office had not been guilty of an error, default etc., there can, in my judgment, be few reasons why the Comptroller's discretion should be exercised against him."

34 This is a very clear and unambiguous statement from the Court regarding the exercise of the Comptroller's discretion under rule 100(2). So far as I am aware, there is no reason to exercise the Comptroller's discretion against the applicant in this case, and since the conditions indicated by Pumfrey J in *Howmet* have been clearly established in this case, I agree to extend the rule 34 period in this application so that it will now expire two months from the date of this decision. Since this is a period specified in relation to proceedings before the Comptroller, by virtue of section 117B(5) of the Act this period cannot be extended as of right under section 117B(2).

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[2] *Howmet Research Corp's Application* [2006] RPC 27 at page 657.

Conclusion

35 I have decided that the claims of this application (as interpreted by the description) are clear, and that they do not relate to excluded matter as such. However, I have also decided that this application relates to the same invention as GB 2391980 and that (as it stands) it cannot therefore be granted with that application. Lastly, I have exercised the Comptroller's discretion under rule 100(2) and extended the period for putting this application in order.

36 Although the other application (GB 2391980) has been found to be in order for grant, it has not yet been sent to grant at the applicant's request pending a decision in this case. For example, if that application is withdrawn prior to grant before the period for putting this application in order expires, then section 18(5) will no longer be an obstacle to the grant of this application. Nevertheless, there remains the possibility (see paragraph 3 above) that the examiner may raise a novelty or inventive step objection against this application. Consequently, if the conflict under section 18(5) is removed, this application shall be remitted to the examiner for the examination process to be completed. If the conflict is not removed, then this application shall be refused under section 18(5).

Appeal

37 Under the Practice Direction to Part 52 of the Civil Procedure Rules, any appeal must be lodged within 28 days of the receipt of this decision.

S J PROBERT
Deputy Director acting for the Comptroller

Annex

(Selected claims from the related application GB 2391980)

1. A computer apparatus configured to run a virtual machine, the apparatus comprising:

means for running a virtual machine; and

a computer readable medium storing a virtual machine instruction for execution in said virtual machine;

wherein the virtual machine instruction is configured to cause said virtual machine to load values from arrays on an execution stack, the virtual machine instruction representing two or more Java(RTM) Bytecode executable instructions the two or more Java Bytecode executable instructions being executable in said virtual machine to load values from arrays on the execution stack.

4. A computer apparatus configured to run a virtual machine, the apparatus comprising:

means for running a virtual machine; and

a computer readable medium storing a virtual machine instruction for execution in said virtual machine;

wherein the virtual machine instruction is configured to cause said virtual machine to store values located on an execution stack into arrays,the virtual machine instruction representing two or more Java(RTM) Bytecode executable instructions, the two or more Java Bytecode executable instructions being executable in said virtual machine to store values located on an execution stack into an array.

7. A computer apparatus configured to run a virtual machine, the apparatus comprising:

means for running a virtual machine; and

a computer readable medium storing a virtual machine instruction for execution in said virtual machine;

wherein the virtual machine instruction is configured to cause said virtual machine to duplicate values stored in an execution stack on top of the execution stack, the virtual machine instruction representing two or more Java(RTM) Bytecode executable instructions, the two or more Java Bytecode executable instructions being executable in the virtual machine to duplicate values stored in the execution stack on top of the execution stack.

10. A computer apparatus configured to run a virtual machine, the apparatus comprising:

means for running a virtual machine; and

a computer readable medium storing a virtual machine instruction for execution in said virtual machine;

wherein the virtual machine instruction is configured to cause said virtual machine to return values by placing them on top of an execution stack, the virtual machine instruction representing two or more Java(RTM) Bytecode executable instructions, the two or more Java Bytecode executable instructions being executable in said virtual machine to return values by placing them on top of the execution stack.