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Dear Sirs

RE: Case No. G3/08
Referral Under Article 112(1)(b) EPC by the President of the EPO
Patentability of Programs for Computers

We refer to the communication from the Enlarged board of Appeal concerning the above case ([2009] EPOOJ 32), and enclose a written statement made by Marks & Clerk LLP pursuant to Article 10 of the Rules of Procedure of the Enlarged Board of Appeal.

Yours faithfully,

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TO: **THE ENLARGED BOARD OF APPEAL**
OF THE EUROPEAN PATENT OFFICE

Referral under Art 112(1)(b) EPC by the President of the EPO
(Patentability of programs for computers)

Case No. G3/08

SUBMISSIONS OF MARKS & CLERK LLP[1]
as *Amicus Curiae*

Overview: The Law and its evolution

Introduction

The questions referred by the President to the Enlarged Board of Appeal relate solely to inventions implemented using computers and computer programs: inventions that have become generally known as computer-implemented inventions. This relates to one specific technological field in the gamut of technology to which the patent system relates. Thus the potential impact of the answers to the questions on the patentability of other technological fields must be considered.

The Law

Under the European Patent Convention the patentability of inventions is governed substantively by Articles 52 to 57. Article 52(1) states that "*European patents shall be granted for any inventions, in all fields of technology, provided that they are new, involve an inventive step and are susceptible of industrial application*." The qualification "*in all fields of technology*" was added in EPC 2000 to comply with the TRIPs Agreement.

In the field of computer-implemented inventions that execute computer programs as part of the inventive concept, it will be apparent that most inventions are capable of industrial application (Article 57). Further, the requirement for the invention to be novel needs no further discussion (Articles 54 and 55). This only leaves the requirement that the invention involve an inventive step (Article 56). This is a critical

[1] Background information on Marks & Clerk LLP is presented at the end of this document.

component in the assessment of the patentability of computer–implemented inventions under Article 52(1) as will be discussed in more detail below.

Article 52(2) and (3) defines a list of things that shall not be regarded as inventions "*within the meaning of paragraph 1*" only to the extent a European patent application or patent relates to such subject matter or activities as such. Article 52(2) includes programs for computers amongst the list of excluded subject matter. It is important for the law to be equally applied to all exclusions listed in Article 52(2) to ensure consistent patent law and to avoid different law for different technologies. Therefore great care must be taken in answering the questions referred by the President to avoid technology specific law being created.

All computer-implemented inventions lie in a field of technology (since they utilise computer technology) in compliance with Article 52(1). The relevant question under Article 52(2) therefore becomes what is meant by a program for a computer 'as such', since these will be excluded.

Evolution in the Interpretation and Application of the Law

The legal system in the EPO is not a precedential legal system. Previous decisions of Technical Boards of Appeal are not binding on a Technical Board of Appeal. Such a legal system gives room for development of the interpretation of the law without there necessarily being divergence of the law.[2]

In the field of computer-implemented inventions, the Vicom[3] decision is the seminal decision and dates back to 1986. Although the claims defined a mathematical method implemented as a computer program to process images, the invention was considered not to relate to a program for a computer or a mathematical method as such because it operated on image data and the invention was thus technical in nature. Statements were made in several subsequent decisions, such as IBM,[4] that the exclusions have in common that they refer to activities that do not aim at any technical result but are rather of an abstract and intellectual character. Thus in this period of the development of the law, the test for whether the claimed invention was excluded by Article 52(2) and (3) was founded around the identification of a technical effect, technical character or technical contribution. In many decisions a technical

[2] T 154/04 (November 2006)
[3] T 208/84 (July 1986)
[4] T 22/85 (October 1988)

contribution was identified by determining the differences over the prior art. Hence prior art was necessarily considered as part of the determination as to whether the subject matter related to a program for a computer as such. This became known as the 'contribution approach'.

In September 2000 the Pension Benefits Systems[5] decision caused a significant change in the application of the law by the EPO. The application related to a computer implemented pension benefits scheme. This decision took an approach that treated method and apparatus claims relating to computer implemented inventions differently. The method claims in question were considered to relate to nothing more than a method of doing business even though they involved the use of technical means and were excluded under Article 52(2), whereas the apparatus claims were not considered to relate to a business method 'as such'. The previously used 'contribution approach' was criticised and it was stated that there was no basis in the EPC for such an approach. Having established that the apparatus claims were not excluded for relating to a computer program as such, the Board examined them under Article 56 for inventive step. In this assessment the 'problem and solution' approach was applied in which only technical features were considered to contribute to the solution to the problem defined over the prior art. The apparatus claims were found to lack an inventive step since the only novel features lay in the field of economy and could not contribute to the inventive step.

The Hitachi[6] decision in 2004 followed the reasoning in the Pension Benefits Systems decision and addressed the inconsistent treatment of the method and apparatus claims. According to Hitachi, method and apparatus claims involving technical means (even if they are trivial technical means) are not excluded under Article 52(2) and (3) for being computer programs as such, but they still need to meet all other criteria for patentability. The question of whether the invention was patentable turned on the inventive step assessment, and in particular whether there was a technical solution to a technical problem.

The Comvik[7] decision also followed the Pension Benefits System decision and confirmed the requirement at the point of determining the inventive step that the non-technical features of the claims cannot contribute to the technical solution of the

[5] T 931/95 (September 2000)
[6] T 258/03 (April 2004)
[7] T 641/00 (September 2002)

technical problem. Since Comvik, non-technical features are ignored by the EPO in the assessment of inventive step. It was also decided in this decision that where the claim refers to an aim to be achieved in a non-technical field, this aim may legitimately appear in the formulation of the problem as part of the framework of the technical problem to be solved: the objective technical problem.

Thus for nearly 9 years the consistent approach of the EPO to the patentability of computer related (and indeed all) inventions has been based on the approach initiated in the Pension Benefits Systems decision and refined in the Hitachi and Comvik decisions. The approach is based almost entirely on the inventive step test. The approach can be summarised as the following steps:

1. *Excluded subject matter*. Do the claims utilise any technical means? If not the invention is excluded under Article 52(1) and 52(2) and (3). See for example the Quest[8] decision.
2. *Novelty*. Determine the closest prior art. Are there any novel features? If not the invention is not new under Article 54.
3. *Inventive step.* Establish the 'objective technical problem' to be solved over the closest prior art. Identify the technical solution provided by the claimed invention. Non-technical features cannot contribute to the technical solution. If there is no technical solution or if the technical solution would have been obvious to a skilled person, the invention is excluded under Article 56.

This approach has recently been considered in detail and reaffirmed by the Boards of Appeal in Duns Licensing[9], and the approach is, in our submission, clear and predictable in the conclusions that it provides.

It is worth noting that this approach does not discriminate between hardware and software. Moreover, the approach tends to lead to predictable outcomes, as evidenced by the fact that the EBA has not needed to consider the matter before now.

<u>The Relationship between the Claims and the Invention</u>

Questions 1, 2 and 3 of the referral all refer to the claims. Articles 51 to 57 all refer to

[8] T 619/02 (March 2006) – A method of odour selection was not considered to be one of the exclusions listed under Article 52(2) but was considered not to pertain to a technical field as required under Article 52(1)

[9] T 154/04 (November 2006)

the invention with no reference to the claims in an application for a patent or a patent. Rule 43 defines the requirement for European patent applications to include claims and indicates that the claims shall "*define the matter for which protection is sought in terms of the technical features of the invention"*. It is often possible for a patent application to require more than one claim in the same category to adequately protect the invention e.g. in a transmitter and receiver or client and server invention (e.g. interrelated products under Rule 43(2)(a)). Thus the claims define products embodying the technical features of the invention.

In the BBC[10] decision a claim directed to a colour television signal was considered to be allowable because it "inherently comprises the technical features of the TV system in which it is being used". Clearly a TV system was patentable and hence the signal when generated by the system would incorporate the technical features in it. Thus claims to the system and signal are allowable.

In the IBM[11] decision claims to a computer program product were allowed if the program when running on the computer brings about a technical effect. The decision on the patentability of the method and apparatus was made under the old application of the law in which a technical effect was identified to determine whether the invention was excluded under Article 52(2) and (3). Under the current established approach of the EPO the determination of whether the invention was patentable would be made under the inventive step test. Using either approach, once again if the invention is patentable, claims including the technical features defining a method, an apparatus and a computer program product are allowable.[12]

Great care needs to be exercised in interpreting the claims to define the invention for consideration as to its patentability. If the substance of the claims is not extracted to determine the technical contribution brought about by the claims, the mere form of the claims could make unpatentable inventions patentable. The determination of the technical contribution necessarily requires consideration of the prior art and the proper place for this consideration is at the point of assessing the inventive step of an alleged invention. After all, it is that advance in the art which justifies grant of the patent monopoly.

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[10] T 163/85 (March 1989)
[11] T 935/97 and T 1173/97 (July 1998)
[12] It should be noted that the term 'computer program product' could be interpreted as encompassing any medium carrying the computer program, e.g. a disk, solid-state memory, or signal.

It is clear from the above analysis of the law and the current decisions of the EPO that, in any analysis of the law on the patentability of computer implemented inventions, the proper interpretation of Article 52(1) requires that inventive step under Article 56 must be applied. Article 52(2) cannot be considered in isolation since it requires the identification of the 'invention', which is only possible in the context of the prior art. It is proper only to consider the prior art when applying Article 56. Indeed, as the Boards of Appeal have observed, there is no definition in the EPC of the prior art which can be taken into account when considering the exclusions of Article 52(2) and (3).[13]

The Questions Referred by the President

The questions referred to the Enlarged Board of Appeal relate to the form of the claims and to exclusions from patentability under Article 52(2) and (3). There are no questions that relate to or indeed even take into consideration the approach of assessing patentability as part of the inventive step test. The approach of assessing patentability at the point of the inventive step test is applied to all inventions and is not restricted to computer-implemented inventions.[14] Thus there is a danger that in answering the presented questions relating solely to computer-implemented inventions a more difficult two-step approach is adopted just for computer-implemented inventions.

Indeed, not only do the questions posed not relate to all technical fields which are protected by European Patents, they do not even relate to all the exclusions provided by Article 52(2) and (3) EPC. There is therefore a considerable risk that answering the President's questions so as to amend the practice in relation to computer implemented inventions will lead to inconsistencies between different technical fields. Such inconsistencies would have no basis under the EPC and would lead to considerable confusion and uncertainty.

The referral includes references to decisions of the Technical Boards of Appeal that are compared to illustrate the need for answers to the questions. The dates of the decisions used for comparative purposes for each question are significantly spaced and the alleged divergence can in fact be accounted for by the evolution of the

[13] T 154/04 – Reasons 12, Second Paragraph.
[14] See particularly T 764/02 (September 2005)

interpretation and application of the law from the pre 2000 approach to the post 2000 approach. For example, for question 1, T1173/97 was decided in July 1998 and T424/03 was decided in February 2006. For question 2, T1173/97 was decided in July 1998 and T258/03 was decided in April 2004. For question 4, the first group of decisions were post 2000 (T1197/97 in July 2002 and T172/03 in November 2003) whereas the second group of decisions are pre 2000 (T833/91 in April 1993, T204/93 in October 1993 and T769/92 in May 1994).

It is to be noted that the current President's predecessor, Professor Alain Pompidou, considered a request to refer the issues now before the Enlarged Board in early 2007. This consideration followed a suggestion by Lord Justice Jacob, the senior patents judge of the UK Court of Appeal, that a referral be made. Professor Pompidou wrote to Lord Justice Jacob explaining that a referral was not justified at that time. While Professor Pompidou's letter (which was published) indicated that clarification of certain issues by the Enlarged Board would be welcome, Professor Pompidou was explicit that there was 'insufficient legal basis for referral under Article 112(1)(b) EPC'. It can be noted that all the decisions cited in the present referral were issued before Professor Pompidou reached that conclusion. As such, the current President's contention of divergence giving basis for a referral under Article 112(1)(b) EPC is in direct conflict with her predecessor's conclusions.

It can also be noted that the Boards of Appeal have been asked to refer questions on this issue to the Enlarged Board on more than one occasion[15] but declined on the basis that there was no inconsistency in the law.

In the light of the clear differences between the position of the President on the one hand, and her predecessor and the Boards of Appeal on the other, the admissibility of the present referral clearly warrants careful consideration.

As European Patent Attorneys we represent a wide range of applicant companies, including the many start-ups, early stage and SME businesses responsible for driving innovation in the UK economy. We believe that the approach adopted by the EPO is clear and non-discriminatory. It therefore enables us to give advice with reasonable legal certainty to our clients. We also believe it is the best basis for legal certainty for all users of the EPO and the public in general. Any departure from the current EPO

[15] T 764/02 and T 154/04

approach will increase legal uncertainty and potentially harm European business. Therefore, to the extent that the President's referral is admitted, the Enlarged Board of Appeal is strongly urged to answer the questions posed in a way that will maintain the hard-won consistency and certainty of the *status-quo*. Our proposed answers set out in the following section seek to achieve this.

Proposed Answers to the Referred Questions

Question 1
Can a computer program only be excluded as a computer program as such if it is explicitly claimed as a computer program?

Proposed Answer: **Yes**

A computer program is a mere list of instructions with no physical tangible existence and it is this which is excluded from patentability by Article 52(2) and (3). When a computer is claimed on a carrier medium it is a physical entity and is not excluded as a computer program as such. Of course, not all computer-implemented inventions which are not excluded as computer programs under Article 52(2) and (3) will be patentable, as some will fail to provide a technical solution to the objective technical problem defined with reference to the prior art as required for inventive step under Article 56. However there is no basis for taking the prior art into account in considering the exclusions of Article 52(2) and (3), and as such any claim including a technical feature is not excluded from patentability. Indeed, it is unclear what constitutes the prior art for the purposes of Articles 52(2) and (3) as indicated above.[16]

The correctness of this conclusion can be seen by comparison with an example in the fields of business methods (which do not form part of the subject matter of the referral). Consider a claim directed to:

"*Apparatus for selling dusters comprising containers for dusters, a display for displaying an offer for the dusters at two for the price of one, a payment receiving device, and a duster dispensing mechanism."*

[16] See T 154/04 – Reasons 12, second paragraph (discussed above).

The claim includes technical means (a display, a payment receiving device and a duster dispensing mechanism) and as such is not excluded from patentability under the well established practice of the Boards of Appeal. It is noted that the practice is not challenged by the President in this referral.

However this claim may well not be patentable on the basis that it may not provide an inventive step because it does not provide a technical solution to a technical problem defined with reference to the closest prior art. However to decide this, it is necessary to have knowledge of the closest prior art, and as such the consideration is best made in the context of inventive step. This must be correct because it is inevitably a matter of degree in each case. For example, if features of the "duster dispensing mechanism" are added to the claim, the claim may or may not be patentable. This will depend upon whether the added feature means that the claim as a whole provides a technical solution to a technical problem, which requires a proper consideration of the relevant prior art.

The above implies that as soon as any technical feature is included in a claim, the claim avoids exclusion by Articles 52(2) and (3) EPC. The same is true for a claim to a computer program as compared with a claim to a computer program claimed on a carrier medium.

Question 2

(a) Can a claim in the area of computer programs avoid exclusion under Article 52(2)(c) and (3) merely by explicitly mentioning the use of a computer or a computer-readable data storage medium?

Proposed Answer: **Yes**

The proposed answer is supported by the reasoning presented in connection with Question 1 above. Any claim including a computer or a computer-readable storage medium includes technical features and as such avoids exclusion by Article 52(2) and (3).

If one is to exclude claims mentioning a computer from patentability under Article 52(2) and (3) a consideration of the prior art is required, and as explained above the prior art is not properly defined for the purposes of Article 52(2) and (3).

(b) if Question 2(a) is answered in the negative, is a further technical effect necessary to avoid exclusion, said effect going beyond those effects inherent in the use of a computer or data storage medium to respectively execute or store a computer program?

An answer to this question is not required, given that it is proposed to answer Question 2(a) in the positive. However this part of the question emphasises why it is correct to answer question 2(a) in the positive. More specifically, if one concludes that a claim cannot avoid exclusion merely by mentioning a computer or a computer readable data storage medium, there is then a requirement to consider the effects of the invention. This can only sensibly be done with knowledge of the prior art. As the Boards of Appeal have observed, such consideration of the prior art is appropriate in the assessment of inventive step, not excluded subject matter.

Question 3

a) Must a claimed feature cause a technical effect on a physical entity in the real world in order to contribute to the technical character of the claim?

Proposed answer: **No**

There is no legal basis for a requirement that a claimed feature causes a technical effect on a physical entity in the real world in order to contribute to the technical character of the claim. Furthermore, what is meant by a “physical entity in the real world” is unclear and it is therefore submitted that adopting such a test for patentability would lead to considerable uncertainty as to what is and is not patentable.

Moreover, the concept of “technical effect” requires a consideration of the effect of the invention, presumably with reference to the prior art. Such a consideration is best handled in the context of inventive step, not the exclusions of Articles 52(2) and (3) EPC.

b) if Question 3(a) is answered in the positive, is it sufficient that the physical entity be an unspecified computer?

Based upon the proposed answer to Question 3(a), this question does not arise. However in the event that the Board answers Question 3(a) in the positive, the answer to Question 3(b) is **Yes**.

First, it is observed that the question is unclear as to what is meant by "unspecified computer". Specifically, is the term intended to refer to a computer the features of which are unspecified or a computer which is not explicitly claimed, but which is implied by the language of the claim? It is submitted that in either case an effect on such a computer is sufficient to avoid exclusion.

To answer question 3(b) in the negative would be to add further uncertainty to what is meant by a "physical entity in the real world". That is, a computer is clearly a "physical entity in the real world" within the ordinary meaning of that term. To answer Question 3(b) in the negative would therefore add a further lack of clarity to the nature of the physical entity on which an effect must occur.

Indeed, to answer Question 3(b) in the negative would be to require a consideration of what is meant by a "computer" in this context. For example, is an embedded processor a "computer" for this purpose? One would assume not, but the Board will no doubt appreciate that adopting the approach suggested by Question 3(b) would lead decision making bodies of the EPO having to determine what is and is not a "computer" in particular cases. While this determination might be clear cut in some cases, this would not always be so. As such, answering Question 3(b) in the negative would add considerable uncertainty to the application of the EPC.

c) if Question 3(a) is answered in the negative, can features contribute to the technical character of the claim if the only effects to which they contribute are independent of any particular hardware that may be used?

Proposed Answer: **Yes**

It has long been accepted that many computer implemented processes implemented on general purpose programmed computers (e.g. desktop PCs) are patentable.[17] Consider for example image compression and encryption methods, image processing, speech recognition and pattern recognition amongst many processing

[17] See, for example, T 208/84

based inventions. Such processes have effects which are independent of the hardware that may be used and have always been considered suitable inventions for patent protection. Indeed, such processes are of considerable value as evidenced by the nomination of Dr John Daugman of Cambridge University as European Inventor of the Year, for his work in developing algorithms for use in iris recognition, (detailed on the EPO's website)[18] which algorithms have effects which are entirely independent of any particular hardware.

Question 4

a) Does the activity of programming a computer necessarily involve technical considerations?

Proposed answer: **Yes**

Programming a computer involves the use of technical means (i.e. a computer) and as such the activity of programming has technical character and involves technical considerations. This is sufficient to avoid the exclusions under Article 52(2) but of course the inventiveness of the invention must then be considered under Article 56.

b) if Question 4(a) is answered in the positive, do all features resulting from programming thus contribute to the technical character of a claim?

Proposed answer: **No**

The question is unclear in that the phrase "resulting from programming" is ill-defined.

Any computer program, when running, is technical in that it necessarily involves the use of technical means (i.e. the computer). However, some features of the running program may not, in themselves, be technical features, and as such may not contribute to the technical solution to a technical problem which is required if the invention is to provide an inventive step. Indeed, questions such as Question 4(b) serve to illustrate that the patentability of particular inventions is often best answered in the context of inventive step when all relevant prior art is to hand, not in the abstact.

[18] http://www.epo.org/topics/innovation-and-economy/european-inventor/nominees/2009/daugman.html

c) if Question 4(a) is answered in the negative, can features resulting from programming contribute to the technical character of a claim only when they contribute to a further technical effect when the program is executed?

Based upon the proposed answer to Question 4(a), this question does not arise. However in the event that the Board answers Question 4(a) in the positive, the answer to Question 4(c) is **No.**

Whether a feature contributes to the technical character of the claim is independent of whether that feature provides a "further technical effect". Indeed, whether a feature contributes to a "further technical effect" requires a consideration of the prior art, and as such is part of the assessment of inventive step, not the exclusions of Article 52(2) and (3) EPC.

Conclusion

We submit that the Enlarged Board should carefully consider whether the questions referred relate to an issue on which Boards of Appeal have issued divergent decisions within the meaning of Article 112(1)(b). If this is not the case, the Enlarged Board should find the referral inadmissible.

In the event that the referral is admitted, the questions should be answered in the manner set out above so as to maintain the certainty and consistency of the EPO's current position.

MARKS & CLERK LLP

29 April 2009

About Marks & Clerk LLP

Marks & Clerk LLP is the leading and largest firm of European Patent Attorneys in the UK and one of the leading firms in Europe. We have been consistently ranked a top tier firm for patents in the UK by Managing Intellectual Property (MIP) independent worldwide IP survey and the Legal 500 and Chambers directories. We were also awarded the inaugural MIP award for patent prosecution in Europe.

We have some 90 partners and 550 people worldwide. Our attorneys are highly experienced in all technical fields both traditional and cutting edge. We have particular expertise in the fields of electronics and computer software and have acted in a number of leading cases in these fields before both the EPO Boards of Appeal and the UK Courts.