Patentability of Computer Programs

Amicus Curiae brief filed on EPO Enlarged Board of Appeal referral G03/08

1. Why computer program claims matter (and why the President is wrong to call them method claims)

While the EPO has for many years allowed claims to computer-related inventions, and has also allowed claims directed to computer programs or to data carriers or signals carrying programs, some people argue that there should be no patenting of computer programs at all, and it was the position of the UK-IPO for several years leading up to the *Astron Clinica* decision (England and Wales High Court decision [2008] EWHC 85 (Pat), copy annexed to this brief) to refuse all claims to computer programs, data carriers etc, even if the remaining claims of an application were patentable. Accordingly, it is worthwhile to rehearse why such claims are regarded as vitally important by many applicants from a wide range of industries. It is also important to remember that, although the phrase "computer-related inventions" is often used, claims to computer programs are often important in patents for inventions that are not computer-related in any significant sense.

Hypothetical example

Imagine that a manufacturer of small steel-pressing machines makes an invention that lies in changing the order in which certain operations are carried out. Such an invention would be patentable according to conventional criteria, probably with claims to the inventive process, the product of the inventive process and a steel-pressing machine specifically set up to carry out the inventive process.

Even though the invention may be considered to reside primarily in the method, in practice the claims to the machine are often commercially more important. This is because the patentee needs to stop copycat rivals from making and supplying machines that use its invention. Since claims to the machine will be directly infringed by the acts of making, importing and selling such machines, these are the claims that protect the patentee from copyists. The claims to the inventive process will only be infringed directly by the customers who buy and use the machines, because they are the people who will actually use the method. Therefore it is unsatisfactory to try to control copycat manufacturers by method claims, since these claims are not directly infringed by the copyist. With process (method) claims, the patentee is faced with the prospect of suing potential customers, and having to pursue separate actions against a potentially large number of infringers none of whom is the primary source of the copycat machines.

The copycat manufacturer may perhaps be sued for indirect infringement of the method claims (e.g. for supplying means for putting an invention into effect), but the rights given under national law for indirect infringement are typically less than the rights given for direct infringement, and additional facts may have to be proved (for example, compare the rights given by section 60(1)(a) of the UK Patents Act 1977 with the rights given by section 60(2): section 60(2) only covers supply and offer to supply, not making, importing or keeping, section 60(2) requires that both the supply and the working of the method must be done within the UK while section 60(1)(a) also covers making for export, and under section 60(2) it is necessary to prove

knowledge). Therefore it is important, to protect the inventive company against copyists, that claims to the machine are obtained in addition to the method claims.

Next, assume that the steel-pressing machines on the market are processor-controlled, as is the case for many modern machines. In order to convert a prior art machine into a machine according to the invention, it would only be necessary to alter the computer program used by the processor so as to change the order of operations. Under these circumstances, a copyist might not try to supply an infringing machine, but might merely sell a computer program necessary to convert a prior art computer-controlled machine so as to work according to the invention. Indeed, the patentee might well exploit the invention buy selling such programs itself. The copyist might sell a CD or DVD with the new program on it, or if the machines can be connected to the Internet the copyist might simply sell the program as an Internet download and not sell any physical product at all. In the absence of a claim to a computer program for implementing the inventive method, this type of copyist would not be directly infringing the patent, and the patentee would be no better off than if he had obtained no product claims at all.

This demonstrates why patent applicants in many fields of technology need to be able to obtain patent claims covering computer programs, and are not effectively protected against copyists without them. The hypothetical example refers to a steel-pressing machine, but exactly the same issues arise for almost any situation where a machine performs a process under microprocessor control, whether it is a desktop printer, a vehicle engine, a washing machine, a telephone exchange, or a burglar alarm.

The modern inventor, faced with unscrupulous competitors who will rip off his invention by supplying a suitable computer program, is no more deserving and no less deserving than the inventor of thirty years ago, who faced unscrupulous competitors who would rip off his invention by supplying a copycat machine. However, the modern inventor is not given such effective protection by the patent system as his earlier counterpart unless he can be granted claims that are infringed by the actual product that the copyist competitor will sell, and in the age of Internet downloads, that appears to mean that a claim to the program is the only solution.

Of course, this is not the only situation in which a patent applicant will want to obtain a patent claim to a computer program. However, it is a common situation and one that can easily be overlooked in a debate that tends to focus on applications that concern other less industrial uses of computers. It is important that any proposed answer to the question of patenting computer programs is considered in relation to inventions of the type discussed in the hypothetical example, to assess whether the proposed answer will give the desired results in this context.

Category of the claim

If the hypothetical example is considered, it can be seen that the inventive nature of a claim to a computer program may arise from the method that the program instructions encode. However, the commercial value of the claim arises from the fact that it is a product claim, not a process claim, and as such it is infringed by the acts of making, importing and supplying. Consequently, statements in the President's referral such as "claims for a computer program and a computer implemented method can be seen as having identical scope" [Question 2, section III "Divergence"] are incorrect and potentially misleading.

The entirety of Question 2 section III of the referral appears to be muddled in this respect. For example, it says that "the Board [in decision T1173/97] indicated that the substance of a computer program claim lies in the method which it is intended to carry out when being run on a computer (Reasons, 9.6, 2nd paragraph, lines 1-3). As such it must be assumed that the Board considered 'programs for computers' to be a type of method claim." However, while T1173/97, at part 9.6 of the Reasons for the Decision, appears to consider that the <u>inventive character</u> of a claim to a computer program arises from the method that the program brings about when it is run, it is clear e.g. from part 12.3 of the Reasons for the Decision that the Board considered that a computer program claim is in a different category from a method claim, contrary to the assumption stated in the referral.

The President's referral goes on to say, when considering infringement, that "it seems illogical to distinguish between computer implemented methods and computer programs which will cause a method to be implemented." It appears that the President's referral has confused the category of a claim with the origin of its inventive nature. It may be correct to say that a computer program <u>defines</u> a method, but it is wrong to say that the program <u>is</u> the method. A program is, as the quoted passage says, a thing that will <u>cause</u> a method to be <u>implemented</u>. Computer programs are not the only things that are intended to carry out a method, and will cause the method to be implemented. Many machines are also intended to carry out a method and will cause the method to be implemented when the machine is operated. This does not make the machine a method. Something that causes a method to be implemented is a thing, i.e. the subject of a product claim and not a process claim. As can be understood from the hypothetical example above, the value of a program claim over a claim to the corresponding method arises precisely because it is a product claim for the purposes of infringement, with the result that a program is an infringing product even when it is not being run and the claim is infringed by the act of supplying the program (the act of the copycat competitor) and not just the act of running the program (the act of the customer).

2. The wording of the EPC

Article 52(2) EPC states that computer programs are not to be regarded as inventions. Article 52(3) EPC then goes on to state that the patentability of computer programs is excluded only to the extent to which an application relates to computer programs as such. This wording is not easy to understand. For example, it does not say that a <u>claim</u> to a computer program as such is forbidden, but says that the <u>application</u> may not relate to a computer program as such. There is no hint of what is meant by "computer program", and it is not clear what exactly is meant by saying that an application "relates to" a computer program. This wording appears to give the Enlarged Board considerable latitude in how it chooses to interpret the law.

Exclusion limited to non-overlap with copyright

One possible approach is to consider that the term "computer program" refers to a specific series of processor instructions, i.e. that it means any particular file listing plus the equivalents of that file listing when compiled or otherwise transformed from one computer language or code to another. This would mean in practice that a claim would not relate to a computer program as such unless the claim recited a file listing or some other recitation of a specific series of instructions, and an application would

not relate to a computer program as such unless it related to a file listing or a specific series of instructions.

This would be a very narrow exclusion, and would prevent the patenting of a specific program, such as Microsoft Word, but would not prevent the patenting of any idea concerning how a computer program could be constructed or used. It has the attraction that the scope of the exclusion would effectively match the scope of copyright protection in a computer program, and could be seen as implementing the principle that there should not be double protection.

This interpretation would appear to be consistent, for example, with the way in which the term "computer program" is used in sections 50A to 50C of the United Kingdom's Copyright, Designs and Patents Act 1988 and in Article 4 of the WIPO Copyright Treaty (both of which are reproduced in an annexe to this brief). In these cases, the term is used to refer in effect to a text, which is the subject of copyright. On this basis, a patent could not be used to protect the code of a computer program, but a claim beginning "A computer program ..." would not be prohibited unless it reproduced a code listing, since a claim of this type will normally not be directed to any particular string of code but will cover all programs that implement the ideas or have the features required by the claim.

One difficulty with this approach is that it would allow the patenting of a claim to any concept related to a computer program, even if the concept is entirely non-technical and has no technical consequences. For example, a claim such as "A computer program for a game in which a simulation of the laws of gravity and momentum are used to define a series of problems to be solved by a player" would become patentable. This would represent a substantial departure from the previous practice of the EPO.

Computer programs within a field of technology

The Enlarged Board could overcome the difficulties discussed above with the interpretation of the exclusion to match the scope of copyright protection, by referring to Article 52(1) EPC, which states that "European patents shall be granted for any invention, in all fields of technology, ...". This provision could be interpreted to mean that an application relating to a computer program, and a claim in respect of a computer program, may only be granted to the extent that the computer program relates to a field of technology. This could be a separate requirement, to be met *in addition* to the exclusion of computer code listings. This would justify the refusal of the claim example given above, since the design of computer games is a field of business but is not a field of technology.

This approach has the attraction that it provides a legal underpinning in the wording of EPC2000 for a distinction between patentable and unpatentable subject matter with similar results to the previous EPO practice of requiring a technical effect.

In the application of this test, it is important to remember that the internal operation of a computer can itself be a field of technology. Thus a computer program relates to a field of technology if it concerns some technical operation outside the computer on which it runs, and also relates to a field of technology if it relates to a technical aspect of the internal operations of the computer. Therefore an application relating to a computer program that affects the internal operations of the computer, for example by making it run more quickly or by making it more reliable, or by storing data in a format that makes new types of data manipulation possible, would be patentable as relating to technical aspects of the internal operation of a computer, and thus relating

to a field of technology. In this respect, the Enlarged board is encouraged to have regard to the reasoning in the decision in the case of *Symbian Ltd v Comptroller General of Patents* (England and Wales Court of Appeal, decision [2008] EWCA Civ 1066), a copy of which is annexed.

If this approach is followed, many applications relating to computer programs, or containing claims directed to computer programs, will fall into one of three groups. In the first group, the program implements a method for acting on something outside the computer. Such applications and claims will normally be patentable, unless the thing outside the computer to which the method is applied is itself entirely outside any field of technology and the method itself is unpatentable. In the second group, the application relates to some aspect of the internal operation of a computer. Again, such applications will normally be patentable on the basis that they relate to a field of technology by virtue of the effect on the way in which the computer operates. In the third group, the application or claim relates to a computer program that neither influences the internal operation of the computer nor acts on anything outside the computer. Most common consumer applications programs, such as word processing programs, accounting packages, and the like, would fall into this category. They will tend to be characterised by having inputs and outputs that are wholly within the computer system. Such applications and claims will normally be unpatentable.

In practice, any particular computer program may have aspects of more than one group. For example, a word processing package may implement storing text in a new data structure in order to enable an advanced word processing function (e.g. storing text together with margin information so as to allow the retrieval of the first letter of each line of text, for the purpose of allowing a user to create or search for acrostics). In this case, the new data structure might be patentable, and a word processing package implementing it would fall within an appropriate claim in a patent for the data structure, even though the word processing functions of the package would normally not be patentable.

With this approach, earlier decisions of EPO Technical Boards of Appeal, such as T0208/84 Vicom, which related to a process for using digital filters to process images in a computer, could be regarded as correctly decided even though the method was performed entirely within the computer, on the grounds that signal filtering is a field of technology and therefore the invention fell within Article 52(1), and the application was not excluded by Article 52(2)(c) since it did not relate to a specific string of computer code.

The inclusion of the internal operations of a computer as a field of technology, so that innovations in some aspects of the construction of computer programs would be patentable, may be controversial. However, objections to such patents should be considered with care. It may be argued that such patents would hinder development in the field, contrary to the public interest. However, this argument would appear to apply to any field in which the technology advances rapidly. It may be that the current 20-year duration for a patent is too long for inventions in some rapidly developing fields. However, this is outside the scope of the matters under consideration by the Enlarged Board, and can only be changed by amendment of the EPC and the national laws of contracting states. There are no grounds in the EPC for treating different fields of technology differently. Therefore the Enlarged Board should take care to discount any objections that would apply equally to any rapidly developing field of technology and consider only those arguments that arise specifically from the nature of computer programs and which can be justified by the wording of the EPC.

3. Case law of the Boards of Appeal

Case law in this field has developed over time. The current approach stems from decision T0931/95 Pension Benefits Systems and decision T0641/00 Comvik.

<u>T0931/95</u>

In T0931/95 the Board rejected a method claim as relating to a method of doing business. It then considered an apparatus claim. Towards the end of part 5 of the Reasons for the Decision, it concluded that an apparatus claim could not be rejected simply on the grounds that the purpose of the apparatus is to implement a method of doing business, since the formal category of the claim implies physical features which may qualify as technical features of the invention. This is clearly correct. However, instead of investigating whether there were any physical features that did in fact qualify as technical features, to resolve the uncertainty implied by the word "may", the Board concluded that an apparatus constituting a physical entity suitable for performing an economic activity is an invention within the meaning of Article 52(1) EPC. Thus the mere category of the claim became enough to avoid a problem under Article 51(1), and the rejection of such claims, if there was nothing technical and non-obvious, became a matter to be dealt with under inventive step.

The apparatus claim under consideration in T0931/95 recited a data processing apparatus that comprised "means for" performing each step in the method that had been rejected as a method of doing business. The Board chose to assess inventive step itself, rather than remit the matter back to the examining division. In part 8 of the Reasons for the Decision, the Board identified that the improvement envisaged by the invention was essentially economic, and therefore could not contribute to inventive step. The realm of patentable subject matter was only entered with the programming of a computer system for carrying out the invention. From this, the Board concluded that the assessment of inventive step had "thus to be carried out from the point of view of a software developer ... having knowledge of the concept and structure of the improved pension benefits system and of the underlying schemes of information processing". This imputed knowledge was then used to conclude that each "means" was obvious, since it was simply means to carry out the step which the skilled person was assumed already to know about. No justification or reasoning was provided as to why such knowledge had to be imputed to the skilled person.

On the face of it, this approach is contrary to the EPC, since it involved finding the claim obvious not over the prior art but over a combination of the prior art with knowledge that was not in the prior art. Such an approach to obviousness conflicts with Article 56, which requires that inventive step is a matter of obviousness "having regard to the state of the art". According to Article 56, an apparatus for carrying out a new business method will be inventive if it includes technical features that are not obvious in view of the prior art, and will be obvious if it does not, when judged in the light of the prior art, i.e. <u>in ignorance</u> of the new business method. In the case of T0931/95, it appears that the correct approach would have been to ask whether the prior art disclosed means suitable for each function recited in the claim. Bearing in mind that a computer simply deals with numbers, and has no "knowledge" of what those numbers represent, it was quite likely that the prior art did in fact disclose or make obvious the particular combination of capabilities required by the claim, even if the prior art making the relevant disclosure used the features for a different purpose.

If this was the case, then the claim would lack inventive step. If not, then the claim would be inventive.

It may be noted that a new business method might also lead to the design of a new type of ring-binder or a new type of filing cabinet in order to implement the method, and the inventive step of these articles would properly be judged against the features of known ring-binders or filing cabinets, without looking at the reason behind the new design. There is no justification for treating computer-related inventions differently. Thus the proper action in case T0931/95 would have been to remit the application back to the examining division for examination of the novelty and inventive step of the apparatus claim, which might have involved the search for additional prior art in order to discover more about the nature of known data processing systems.

T0641/00

In part 7 of the Reasons for the Decision, T0641/00 starts by conceding that the technical problem should not be formulated to refer to matters which the skilled person would only become aware of by knowledge of the claimed solution, and that the problem should not contain pointers to the solution or partially anticipate it. However, the decision goes on to say that "in the Board's view this principle applies only to those aspects of the subject matter claimed which contribute to the technical character of the invention and hence are part of the technical solution. ... In particular, where a claim refers to an object 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 that is to be solved, in particular as a constraint that has to be met." No justification or reasoning is given in support of the opinion except to refer to decision T0931/95 (discussed above) and decision T1053/98.

Again there appears to be a conflict between this approach and Article 56 EPC. The inclusion of the constraint in the problem is additional information given to the skilled person. If the solution is not obvious in the absence of the constraint, but becomes obvious when the constraint is added, then the obviousness clearly does not arise out of the state of the art as required by Article 56. The claim under consideration in case T0641/00 related to a method concerning a mobile telephone system, which apparently had novelty in the features that a mobile telephone SIM was allocated two identities (instead of the normal one), the user was able to activate the identities selectively, and this would be used to distribute costs between different accounts. It was acknowledged that the feature of allocating two identities was technical, but it was held to be obvious in view of the skilled person's deemed knowledge that there was a desire to be able to distribute call costs between two accounts, even though this desire did not in fact exist in the prior art. I have to question whether this case was decided correctly. Provided that the claim recites a technical feature, and that technical feature is not obvious in view of the prior art without the addition of any information not in the prior art, there is an inventive step. Many inventions arise from the formulation of a new objective, with the solution being obvious once the objective is formulated, and the situation in this case is not dissimilar to the examples of invention given in Guidelines C-IV, 11.6 (i) and (iii).

T0154/04

An unfortunate dispute grew up between the courts in the United Kingdom and the EPO Boards of Appeal (in particular Board 3.5.1) over this approach, which led to outspoken criticisms of the Board in a UK court judgment. The Board made its reply in decision T0154/04. In part 5 of the Reasons for the Decision, in principle (F), the Board states that non-technical features "do not provide a technical contribution to

the prior art and are thus ignored in assessing novelty and inventive step". In principle (G), the Board states that the problem-and-solution approach requires a technical problem that the skilled person might be asked to solve at the priority date. It goes on to say that the technical problem "may be formulated using an aim to be achieved in a non-technical field ... even if the aim stems from an *a posteriori* knowledge of the invention". The contradiction, between saying that the non-technical features are "ignored" in principle (F) and that they are taken into account as part of the technical problem in principle (G), is never acknowledged or discussed in the decision. Later, in part 16 of the Reasons for the Decision, it is stated that the formulation of the problem to include an aim to be met in a non-technical field "has the additional, desirable effect that the non-technical aspects of the claimed invention ... are automatically cut out of the assessment of inventive step...". There appears to be no recognition that by adding this constraint to the technical problem the non-technical feature is not simply being cut out of consideration, but is actually being wrongly considered as part of the prior art. Although this decision discusses previous case law and the provisions of the EPC at some length, it does not at any point explain why it is justified to add the non-technical features to the formulation of the problem rather than simply ignoring them in the claim, and it does not consider the conflict between this formulation of the problem and the requirement in Article 56 that inventive step simply a matter of an absence of obviousness with regard to the state of the art (so that consideration of anything not in the state of the art cannot be permitted).

While I understand the desire of Board 3.5.1 to maintain a clear distinction between the requirement for technical character (the requirement for "invention") and the requirement for inventive step, and the need to ensure that non-technical features are not considered inappropriately when judging inventive step, I submit that the approach that has been adopted, of deeming non-technical features to be part of the technical problem when they are not part of the state of the art, cannot be correct and should be disapproved. There is a particular problem that there seems to be a different treatment of inventive step in the case of claims involving computer programs, in which the object to be achieved is taken into consideration, and other inventions, which are judged without considering the object to be achieved. All types of invention should be judged by the same standard of inventive step.

4. The Questions in the Referral

Following the discussion of various background issues above, I will now comment on the questions referred by the President.

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

The discussion of this question in the referral appears potentially to be misleading. The question is about what kinds of claim may be refused, whereas both the decisions referred to were concerned with what kinds of claim may be granted. In both cases, a method claim was patentable, and each decision stated that a claim to a program for implementing the method was also patentable. Decision T0424/03 also had to decide whether the method claim itself was patentable, whereas this was not an issue in T1173/97. There does not appear to be any conflict between the decisions.

The situation considered by the question seems unlikely to arise in practice. If a method claim is patentable, then a claim to a computer program for implementing that method should also be patentable (in this respect, the Enlarged Board is urged to follow the decision of the England and Wales High Court in *Astron Clinica* [2008] EWHC 85 (Pat), a copy of which is provided as an annexe). If a method claim is not patentable, a claim to a program for implementing it would not be patentable for the same reason as applied to the method claim.

However, in so far as the situation envisaged in the question might arise, I propose the following answer.

In circumstances where a claim to a computer program would not patentable, either because it was excluded specifically by Article 52(2)(c) or more generally because it did not meet the requirement of Article 51(1) of relating to a field of technology, or even because it did not have an inventive step, a claim to a method of using that program would not be able to derive patentability from that program, but might be able to derive patentability from other features in the claim if there were any. Thus a claim to the use of an unpatentable program, without further method features, would be unpatentable, but a claim to a method that used an unpatentable program could be patentable if it also included other features that related to a field of technology and had novelty and inventive step. Similarly, a claim to a computer programmed with an unpatentable program or a data carrier carrying an unpatentable program would not be patentable unless the claims additionally recited other features that conferred patentability. However, in these cases, the unpatentable method, computer and data carrier claims would not be refused as relating to a computer program, but as lacking novelty because the claim could not obtain patentability from the program and in the absence of other features there would be nothing to provide novelty.

This approach is in accordance with Article 51(3), which excludes patentability only to the extent that the application relates to the excluded subject matter as such. Thus, if the application relates to excluded subject matter and also to non-excluded subject matter, patentability is only partially excluded. Thus the presence of an unpatentable computer program (which could mean the presence of a computer code listing according to the interpretation of Article 52 given above) would not provide patentability but equally would not prevent patentability of an otherwise patentable claim.

It should be borne in mind that a claim is infringed if all its features are present in the allegedly infringing product or process, so that a claim directed to a patentable use of an unpatentable program would not monopolise the unpatentable program but would only prevent its use in the specific method claimed.

<u>Question 2(a) - Can a claim in the area of computer programs avoid exclusion under Art. 52(2)(c) and (3) merely by explicitly mentioning the use of a computer or a computer-readable data storage medium?</u>

<u>Question 2(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?</u>

The discussion of these questions in the referral unfortunately confuses program claims and method claims. Claims for a computer program and a computer-

implemented method do not have the same scope, and a method claim does not encompass a computer program for carrying out the method, since these are claims in different categories. The referral is wrong to say that decision T0038/86 gives this view. That decision states that a particular method claim "covers the case in which a computer program is used". That is to say, the method claim covers the use of the program, not the program itself. This is the same as saying that a claim to cutting covers the case in which a knife is used. This does not make a method claim a claim to a knife.

As stated in the referral, decision T1173/97 must have equated programs for computers with either a product or a process. This is correct, but the equation is with a product, not with a process as the referral wishes to imply. The subsequent discussion of this decision is also inaccurate. Reasons 9.6 does not indicate that the substance of a computer program claim lies in the method and the Board certainly did not consider that programs for computers were a type of method claim (see part 12.3 of the Reasons). If this part of the decision is actually read, it will be seen that it refers to "computer program product" claims. It says that a computer program product may implicitly comprise all the features of a patentable method, in which case a claim to that computer program product is patentable. Saying that a computer program comprises all the features of a method does not imply that the program is a method. It is clear (e.g. from the terminology "computer program product") that the Board considered programs to be products.

The referral continues to be wrong when it says that it would be illogical to distinguish between computer implemented methods and computer programs when considering infringement. As discussed above, the distinction, whereby the claim to a computer program is infringed even when the program is not run, is vital. Without this product claim property, a claim to a computer program would not be infringed by the acts of making and selling copies, which are the very acts that the patentee most needs to be protected against.

Since almost every statement in the "divergence" section under this question is wrong, it is not clear that any divergence actually exists. Nevertheless, my answers to the questions are as follows.

(A) A claim in the area of computer programs cannot avoid being unpatentable merely by explicitly mentioning the use of a computer or a computer-readable data storage medium. However, the lack of patentability may not arise under Article 52(2)(c). It probably makes more sense to treat a claim to a computer or a data carrier as relating to a field of technology, and as not being itself excluded by Article 52(2)(c), but since the claim cannot derive patentability by reference to an unpatentable program, the claim has no new technical features and is unpatentable for lack of novelty.

(B) The effect of loading a program into a computer or writing it to a data carrier, and the act of running the program on a computer, does not make any change to the nature of the data carrier or the computer, when seen as the physical changes (electrical charges etc) that result. These physical changes are part of the inherent nature of the computer or the data carrier – they are what it is designed for. Therefore these effects cannot provide any new technical character (the products will have their own inherent technical character, but that is assumed not to be new). Thus the computer and the data carrier only obtain any new technical character from any new technical character in the program. If the program lacks technical character, the computer and data carrier will have technical character but will lack novelty.

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?

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

Question 3(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?

There does not appear to be any divergence between the decisions. Decisions T0163/85 and T0190/94 do not state that a technical effect on a physical entity in the real world is required, but state that it is sufficient. Also, in decisions T0125/01 and T0424/03 the technical effects were not essentially confined to the computer programs, but to the computers when the programs were run. This question seems to suffer from the prejudice that somehow sees computers as not being part of the real world. It is possible (but not inevitable) for a computer program to have a technical effect on the computer in which it is run. This is what happened in T0125/01 and T0424/03. The Enlarged Board is again urged to refer to the decision in *Symbian Ltd v Comptroller General of Patents* (England and Wales Court of Appeal, decision [2008] EWCA Civ 1066).

With reference to question 3(a), I am not sure that it is always appropriate to consider the technical effect (or otherwise) of a single feature from a claim in isolation, but in general the technical effect of a claimed invention must be (at least potentially) a technical effect in the real world (are there any other kinds of technical effects?). However, (question 3(b)) the part of the real world that is affected may be the computer on which a program is run. This is not to say that running a program inevitably has a technical effect on the computer. On the contrary, it often will not, but certain types of computer program (especially ones connected with its operating system) may do. It is a matter of fact to be considered in each individual case. With respect to question 3(c), if the feature has a technical effect, it has a technical effect. If its effect is independent of the hardware that is used, this is not legally relevant. What is legally relevant is whether the effect is technical, which requires investigation in each particular case. It may be the case as a matter of fact the it is difficult for an effect that is independent of hardware to be technical, but this is a factual question to be considered on a case-by-case basis and is not a matter of law.

Question 4(a) - Does the activity of programming a computer necessarily involve technical considerations?

Question 4(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?

Question 4(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?

With respect to question 4(a), there are two ways of looking at this. One could say that the activity of programming a computer may involve technical considerations, but does not necessarily do so, or one could say that all programming involves technical considerations but in many cases these considerations are not new. My preference is for the first option. While most practical programming in a modern computer

environment will involve technical considerations, I find it hard to regard the writing of a computer program that performs the operation of 1+1 as technical, especially since modern computer program languages mean that the programmer does not need to know how the computer actually performs the task. In this respect, I think that the statement made in T1177/97 was a little too sweeping.

It also needs to be borne in mind that the end product does not necessarily have a technical effect merely because the activity of computer programming often involves technical considerations. It may be considered that the activity of a sculptor working on a large piece of stone will involve technical considerations, since care will be needed not to crack the stone when hitting it, and the final product must be able to support its own weight. This does not give the sculpture a technical effect.

It will be clear from the preceding comments that, in answer to question 4(b), not all features resulting from programming can contribute to the technical character of a claim. Technical character must always be a matter for investigation in each individual case.

There are problems in trying to make sense of question 4(c). What is meant by a "further" technical effect, when no previous technical effect has been referred to? Technical considerations are not technical effects (especially since considerations may be considered to be mental acts). In general, I find it hard to see how a computer program can have a technical effect when it is not being run, but I would not wish to say that this is impossible as a matter of law. Rather, it is for an applicant in the relevant case to try to show that it is possible as a matter of fact (I do not see how this could be shown, but the applicant should be allowed to try to do so). Therefore the answer to this question must be that technical effect is to be assessed individually in each case, and an applicant is not prohibited from arguing that a program has a technical effect even when it is not running, if the applicant believes that such an argument is possible. However, the effects discussed in the referral, such as improving ease of program maintenance, do not seem to me to be technical any more than the arrangement of a reference book with paragraph numbers (which eases the creation and maintenance of an index, since paragraph numbers do not change even if page numbers do) is technical.

Please note that the above comments are my personal views, and do not represent the views of my employer or of any client.

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