Amicus Brief on G03/08

Please find below my comments on G03/08. I write as someone who has many years of experience in the software and patent fields. I should emphasise that these comments are my personal thoughts only, and should not be attributed to any organisation that I am associated with.

Yours Sincerely,
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Initial Comments

a) General Admissibility

I think that above all, the Referral is inadmissible. This is the same conclusion (in effect) that the previous President of the EPO reached by deciding not to make such a reference in the first place. The situation has not changed since that time (as is clear from the dates of the decisions in the Referral).

The questions seem generally "manufactured" in the sense that I have little doubt that in many cases, the questions were written first, and then the author of the Referral desperately searched around for some supposedly diverging cases to try to justify the questions. For most practitioners, these supposed divergences don't exist, or have been superseded by the natural development of case law.

More detailed thoughts on admissibility are given below with respect to the individual questions.

b) General EBA role

One role of the EBA is to harmonise patent law in Europe. However, EBA decisions are not formally binding on the national courts. Therefore, the EBA decisions will be followed only as long as they command respect and are legally rigorous. In this sense, the EBA must be conservative. If it makes a decision based on what the law should be, rather than what the law is.
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Question 1

Substantive Discussion

The Referral does identify a genuine divergence between T1173/97 and T424/03.

T1173/97 in effect states that the form of claim (computer program, method, etc) is not determinative of whether or not the exclusion of Article 52(2) applies. Rather, the exclusion of Article 52(2) is avoided by the presence of a further technical effect.

T424/03 disagrees. It takes a more literal approach to Article 52(2), finding that the presence of a physical item in the claim, as for a computer-implemented method or a computer system, implies that the claimed invention does not represent a computer program as such. Other decisions, such as T258/03, conform to the same line of reasoning.

According to the Referral: "if one were to follow the reasoning of T424/03, overcoming the exclusion of programs for computers would become a formality, merely requiring formulation of the claim as a computer implemented method or as a computer program product". However (and it is a very big "however"), according to T424/03 and other similar decisions (e.g. T258/03), the requirement for technicality must now be considered under Article 56 EPC, not just under Article 52(2). More particularly, features that do not contribute to the technical character of a claim are excluded from the consideration of inventive step. Therefore, if T1173/97 would reject a computer-implemented method under Article 52(2) for lack of further technical effect, T424/03 would also reject the method, but under Article 56, for lack of (technical) inventive step, since the absence of features producing a further technical effect implies that there are no features that could contribute to an inventive step.

(It is therefore disingenuous to regard T424/03 as reducing Article 52(2) to a mere formality, since it specifically puts something else, namely Article 56, in its place).

Accordingly, the divergence between T1173/97 and T424/03 is essentially theoretical, because at most they lead to (formally) different grounds of rejection (Article 52(2) or Article 56). No-one has yet clearly identified a situation where they would lead to a difference in substantive outcome – i.e. a claim that would be allowable under one decision and not allowable under the other decision.

Of course, from the perspective of applicants, it is only important whether or not their case is allowed – the final ground of rejection is irrelevant. Accordingly, it is not apparent that the divergence between T1173/97 and T424/03 has any practical significance.

Admissibility of Question 1

Question 1 does not actually capture the proper divergence between T1173/97 and T424/03. In particular, the answer to Question 1 is "No" according to both these cases. Thus T1173/97 would answer "No" for the reasons given in the Referral, namely that a computer-implemented method with no further technical effect may fall foul of Article 52(2).

In addition, T424/03 would also answer "No" to Question 1. This is because section I for Question 1 identifies "methods" and "computer-implemented methods" as two different claim formulations for computer-implemented inventions. It is made clear later in the Referral (Question 2, section III, first paragraph) that the former does not recite, and hence does not necessarily involve, physical apparatus. According to T424/03, a claim to a method that does not specifically recite physical apparatus, such as a computer, could fall within the exclusion of Article 52(2).

Given that T1173/97 and T424/03 would both answer "No" to Question 1, the Referral of this question is inadmissible under Article 112(1)(b) through lack of divergence.

Answer to Question 1

From the reasoning above, the answer to Question 1 is "No".

To the extent that the EBA does decide to address this question in more detail, the approach of T1173/97 should be adopted, rather than that of T424/03. The rationale for this is given below in respect of question 2A (which is very closely-related to question 1). Incidentally, this rationale also supports the allowance of claims specifically directed to a computer program (essentially following the reasoning of T1173/97).

Answering "No" does not impact the decision in T208/84 (Vicom).

Question 2

Substantive Discussion

Section II of the Referral correctly identifies a divergence between T1173/97 and T258/03. This divergence is discussed above in relation to Question 1 (bearing in mind that T258/03 and T424/03 adopt a common approach).

Unfortunately however, section III of the Referral then becomes confused, making an incorrect and futile attempt to equate a computer program claim with a method claim, although the divergence it identifies is not dependent on this approach.

In particular, the Referral argues that "claims for a computer program and a computer implemented method can be seen as having identical scope", so that "the scope of a method claim would encompass a computer program for carrying out that method". The Referral cites T38/86 as the basis for the latter statement, but what this decision actually says is that: "the claim covers the case in which a computer program is used" (emphasis added). In other words, according to T38/86, a method claim encompasses the use of a computer program (to perform the specified method), a statement that can hardly be disputed. However, T38/86 does not provide any support for the view that a method claim would encompass a computer program itself (as opposed to use of the computer program).

The Referral cites T1173/97 as indicating 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". The Referral concludes from this that the Board "considered 'programs for computers' to be a type of method claim". Again, this conclusion is wrong. It is well-known that an apparatus (product claim) may be defined in terms of functionality (see Guidelines C III 2.1). For example, a car engine that has a new sequence of ignition operations may be claimed as an apparatus (engine) that implements the specified sequence of ignition operations. In this case, there is no doubt that the "substance" of the claim comprises a method (the sequence of ignition operations), yet the category of the claim is a product (the engine). Accordingly, T1173/97 does not provide any basis for considering a computer program claim to be a method claim.

The Referral also cites G2/88 which defines the two basic types of claims as being physical entities and physical activities (clearly corresponding to the products and processes respectively of TRIPS). It should be noted that the decision of G2/88 relates to categorizing a use claim and determining the implications of a change of claim category.

The Referral appears to be suggesting that a computer program claim must be regarded as a method claim because a computer program is not a physical entity. However, the word "physical" was not the subject of any legal analysis in G2/88 and its inclusion is essentially incidental to that decision. Certainly there is nothing in G2/88 to indicate that a computer program is not "physical". For example, to run a computer program on a computer requires the physical state of the computer to be altered to store the computer program.

In summary, although the Referral tries to equate a computer program claim with a method claim, there is nothing in the case law to support this approach. Indeed, common sense dictates that the Referral is wrong. A computer program can be bought, copied, destroyed (deleted), etc, and hence indisputably falls into the claim category of products rather than processes.

Admissibility of Question 2A

The rationale of the Referral is that (i) according to earlier case-law, a claim to a computer program is somehow the same as a claim to a method; and (ii) T258/03 treats these two claim categories differently, which "seems illogical".

Even if we ignore the fact that the earlier case-law does not (in fact) equate a claim to a computer program with a method claim, simply following through a chain of case law to arrive at a situation where the outcome of another decision "seems illogical" does not provide a legitimate basis for a referral under Article 112(1).

Accordingly, the Referral itself does not provide sufficient legal basis for Question 2A to be considered admissible. The inadmissibility of Question 2A also renders Question 2B inadmissible (or at least irrelevant), since it can only be addressed dependent on the outcome of Question 2A.

Notwithstanding the above, Question 2A *does* correspond to a divergence of case law (irrespective of the argumentation of the Referral), in the sense that T258/03 would answer this question "Yes" and T1173/97 would answer the question "No".

Whether this represents a bona fide divergence is moot because:

(a) it does not ultimately affect whether or not a case is allowed (as discussed above in relation to Question 1); and

(b) all recent decisions have followed T258/03, so that this is probably better considered as a development of case-law rather than as a divergence.

Fact (a) implies that the question can hardly be considered of "fundamental importance" (since it has no practical effect), while (b) implies that an answer to the question is not required in order to ensure uniform application of the law. Accordingly, neither of the basic requirements of Article 112(1) EPC is satisfied to support the Referral, and again Question 2 is not admissible.

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Answer to Question 2A

Nevertheless, if a decision has to be made, I believe that the approach of T1173/97 is generally preferable to that of T424/03.

The case-law of T258/03 and T424/03 departed from earlier case-law (such as T1173/97) primarily because of computer-implemented business method cases. The EPO initially rejected these under Article 52(2), usually by arguing that the apparatus features were well-known components of a computer so the only innovation was a business method. T258/03 rejected this approach on the basis that the question of

whether a computer component is "well-known" brings in considerations of the state of the art under Article 54. According to T258/03, this means that the case cannot be rejected under Article 52(2), which does not involve any assessment of the state of the art, but should rather be rejected under Article 56 (by making technicality a requirement for inventive step).

Recent English case-law, in particular the Aerotel case, has proposed a four-step test for considering non-statutory matter under Article 52(2) (corresponding to section 1(2) of the UK Patents Act). The second step of this test requires one to identify the "contribution". It is clear that this does involve some consideration of the invention vis-à-vis the prior art. Thus after the Court of Appeal initially found the Aerotel patent to be statutory subject matter, a full trial in the Patents County Court uncovered additional prior art, thereby changing the perceived contribution, with the result that the Aerotel patent was then found to be non-statutory subject matter – i.e. the conclusion under Article 52(2) changed dependent on the cited art. This is presumably the very thing that T258/03 seeks to avoid in its interpretation of Article 52(2).

According to T258/03, T1173/97 and Aerotel therefore mix up statutory subject matter under Article 52(2) with questions involving prior art (Article 56). On the other hand, it is frequently argued that T258/03 renders Article 52(2) a mere formality (as mentioned in the section IV for Question 1 of the Referral itself). Actually, this overlooks a bigger problem with T258/03, which is not how it shrinks the scope of Article 52(2) EPC, but rather how it extends the scope of Article 56 EPC.

In particular, although T258/03 leaves Article 52(2) with some arguably plausible scope of exclusion, it puffs up the criteria of Article 56 to such an extent that anything falling within the exclusion of Article 52(2) would also necessarily be regarded as non-inventive according to the new approach for Article 56. This makes Article 52(2) redundant, in that even if its exclusions were not present, the corresponding subject matter would still always be considered unpatentable under Article 56. It is difficult to believe that the originators of the EPC would spend all that time and effort finalising the precise exclusions of Article 52(2) if the scope of the exclusions was going to be subsumed anyway into Article 56 EPC.

One way round this problem with T258/03 is to use Article 52(2) to inform the assessment of what is or is not technical under Article 56. Of course, this leads to a mixing of Article 52(2) and 56 EPC, which is exactly what T258/03 seeks to avoid. Nevertheless, in the overall context of the EPC, I think such mixing is inevitable – i.e. complete independence of Articles 52(2) and 56 EPC is not possible.

This gives two possibilities: either using Articles 54/56 when considering Article 52(2) (as per T1173/97), or using Article 52(2) when considering Articles 54/56 (closer to T258/03).

I prefer the former approach, as set out in T1173/97, because of an issue that is identified in the Referral itself. In particular, T258/03 would reject a computer system for performing a method under one legal ground, Article 56, but reject the method itself (if it does not specifically recite physical apparatus) under a different legal ground, Article 52(2). I do not think that there is any need to equate a computer

program claim with a method claim (as the Referral tries to do) in order to see this distinction between corresponding method and system claims as problematic. Rather, we should focus on the intention of Article 52(2), which is to specify subject matter that is not considered to be an invention. The implication under T258/03 therefore is that a method claim with no apparatus is not "an invention", but if we add "computer-implemented" to the claim, now we have an "invention". However, at a substantive level, we are clearly dealing with the same "invention" throughout. For example, no-one would suggest that adding "computer-implemented" to the claim would change the inventorship of the case, or justify a lack of unity objection under Article 82 EPC. Hence it does not make sense to hold that such a change can transform a "non-invention" into an "invention".

This supports the approach of T1173/97 that it is the substantive technical contribution that determines whether or not an invention is found to fall within the exclusion of Article 52(2), even if some analysis of the prior art is required in order to make an accurate determination of the technical contribution. This approach is also reflected (explicitly) in T190/94. Since a change in claim format, e.g. from method to system, does not alter the substantive technical contribution of an invention, it cannot alter the position under Article 52(2), even if one claim format does cite (conventional) apparatus and the other does not.

The implication of this is that Question 2A should be answered: "No".

Note that this reasoning also supports the approach of T1173/97 in accepting claims to a computer program per se if the corresponding system and method claims are allowable under Article 52(2) EPC, since the invention (and the substantive technical contribution) are the same, irrespective of the particular claim format.

The acceptance of computer program claims to accompany system and method claims is also appropriate from an underlying policy perspective. This is because it is generally accepted that if a patent has a system or method claim for a computer-implemented invention, then selling a computer program that implements the invention represents indirect (contributory) infringement of the patent. It is difficult to see any economic rationale for forcing the patentee to pursue the seller for such indirect infringement, rather than allowing them to use direct infringement of a computer program claim, since this does not alter the effective boundaries of patent rights, but only improves the efficiency with which the patent rights can be enforced.

Note that this approach makes a distinction between the underlying conceptual invention (which is to be tested against Article 52(2) EPC, and the claim scope, which covers, in effect, the implementation of the invention. In other words, the same conceptual invention might be implemented as a computer system, a method, or a computer program, and all three would stand or fall together vis-à-vis Article 52(2) EPC.

Answer to Question 2B

The basic premise of T1173/97 is that any computer program causes a technical effect when it is run on a computer (because it influences the operations of the computer). In order to overcome the exclusion of Article 52(2) however, some additional or

further technical effect is required – i.e. an effect that is not automatically shared by all computer programs, but rather is specific to the claimed invention.

I think that the approach of T1173/97 is correct, and on this basis, the answer to Question 2B should be "Yes".

This approach is compatible with the decision in T208/84 (Vicom), as noted in T1173/97 itself (see Reasons 7.1). It should be emphasised (since it is sometimes overlooked) that this further technical effect for T1173/97 may already be known in the prior art (see Reasons 9). In other words, a further technical effect only has to be present, it does not have to be new (or inventive).

Question 3

Substantive Discussion

Section I states: "it will always be necessary to evaluate the effects caused by individual features or combinations of features to determine whether they contribute to the technical character of a claim. Determining this contribution is always relevant for evaluating the further requirements of the EPC (such as inventive step)".

This statement from the Referral is wrong, and indeed is contrary to much of the case law cited in the Referral itself (a rather disappointing indication that the Referral does not understand the relevant case-law). In particular, although the statement is consistent with the approach of T258/03, it contradicts the approach of T1173/97 and also T190/94. According to these latter two decisions, the question of technicality is fully decided under Article 52(2), not under Article 56. Consequently, for T1173/97 and T190/94, the determination of which features contributed to the technical character of the invention is then irrelevant for assessing all subsequent requirements of the EPC.

Section II of the Referral cites T163/85 and T190/94. It is worth remembering (since it is not mentioned in the Referral itself) that neither or these Decisions relates to the computer program exclusion of Article 52(2). The question in T163/85 was whether a television signal represented a presentation of information as such, while T190/94 only raised the mathematical method exclusion (despite the invention clearly involving a computer-based implementation).

In T163/85, the Board made the following distinction: "a T.V. system solely characterised by the information per se, e.g. moving pictures, modulated upon a standard T.V. signal, may fall under the exclusion of Article 52(2)(d) and (3) EPC but not a T.V. signal defined in terms which inherently comprise the technical features of the T.V. system in which it occurs." (Reasons 2).

The Board further argued that: "the exclusion might be arguably generalised to subject-matter which is essentially abstract in character" (Reasons 2). It is unfortunate that the Referral has misrepresented the position of the Board by replacing "arguably might be" by "could". It is clear from the actual decision that the Board was suggesting one legal approach that might be helpful in particular circumstances, whereas the Referral implies (incorrectly) that it was trying to make some more definitive statement about Article 52(2).

As noted in the Referral, the Board then observed that the television signal "is a physical reality which can directly be detected by technological means and, therefore, cannot be considered as an abstract entity". (Reasons 2).

Overall, T163/85 concludes that the television signal is patentable because it is defined by technical features rather than information content, and moreover this conclusion is consistent with an approach to Article 52(2) that rejects abstract subject-matter, since a television signal has a physical reality and hence cannot be considered as abstract.

Section II of the Referral further cites T190/94. The invention in this case related to a system for rotating an image (the system clearly being some form of computer). The objection under Article 52(2) focused on the mathematical method exclusion: "the appellant [opponent] has argued that the contribution made to the art by the difference between the claimed and the known system would be of a mathematical kind only" (Reasons 5.11). There is no mention or discussion in this decision of the computer program exclusion of Article 52(2).

The Board makes the following observation regarding the exclusions of Article 52(2): "With some justification ... they all can be regarded as being of an abstract rather than of a technical kind". Again, we see some caution from the Board in generalising Article 52(2) – certainly it is not setting out some definitive approach. We also see that the Board develops a contrast between "abstract" (non-patentable) and "technical" (patentable).

In the end, the Board concludes that the contribution of the invention "manifests itself in the real world in a technical effect on a physical entity" and therefore falls outside the exclusion of Article 52(2). In this case, it appears that the physical entity concerned is an image.

In section III of the Referral, it is stated that: "according to decisions T163/85 and T190/94, a technical effect on a physical entity in the real world was required". This statement is simply wrong.

It can be understood from T163/85 and T190/94 that a technical effect on a physical entity in the real word is sufficient to escape the exclusions. However, there is nothing in T163/85 and T190/94 to say that it is "required" (i.e. necessary). If we take any generalisation from T163/85 and T190/94, it is that an abstract invention would fall into the exclusions, while something technical is non-abstract.

For T125/01 the Referral states that the invention "did not affect modification of the hardware", while for T424/03 the Referral states that the invention produces "an effect independent of the hardware used". Both of these statements are true, but neither is relevant. For example, it appears that the invention in T190/94 did not modify the hardware and was independent of the hardware used (at least, the reasoning for the decision does not rely on any such circumstance). Hence the statements about T125/01 and T424/03 do not identify any divergence from T190/94.

It should also be noted that the "further technical effect" test of T1173/97 likewise does not require modification of hardware or any hardware-dependenee, rather the technical effect may arise from the operation of the hardware. In addition, the inventions in T424/03 and T125/01 both use software to improve the operation of the hardware. For example, the invention in T125/01 provides greater flexibility by making modification quicker, and hence demonstrates a further technical effect.

The same issue also arose in the Symbian case in the UK. The UK IPO had essentially rejected the invention because only the computer software had been modified. However, the Court of Appeal held that the UK IPO was mistaken, and that

the result of such modification was the user having a better computer (combination of hardware and new software) and hence the case was allowable under Article 52(2).

The Referral states that "there is uncertainty about where the line is to be drawn between technical effects and effects lying solely in the field of programs for computers". Again, it must be emphasised, that Article 112(1) does not provide a basis for speculative questions about possible areas of "uncertainty".

Furthermore, the Referral also confuses two separate concepts. Article 52(2) excludes subject matter comprising computer programs "as such". T1173/97 holds that subject matter that produces a further technical effect is not excluded (i.e. it goes beyond the "as such" provision). However, I am not aware of any significant case law (and none is mentioned in the Referral) that discusses "effects lying solely in the field of programs for computers". There does not appear to be any legal basis for this portion of the Referral.

The Referral states that "following the reasoning of the latter decisions [T424/03 and T125/01] it would appear that an inventive step could be based on a programmer's choice of elementary programming constructs (tables, loops, subroutines, objects) which solely serve the efficient execution of the program or indeed simplify the programmer's work (e.g. using a subroutine rather than repeating lines of code)".

There are various points to make here. Firstly, there is no basis for assuming that T163/85 or T190/94 would lead to a different conclusion from T424/03 or T125/01, i.e. there is no divergence in the cited decisions. Secondly, the reference to "inventive step" is confused because it again assumes an approach consistent with T258/03, whereas other parts of the Referral call into question the validity of such an approach. Thirdly, there may well be a conflict between "inventive step" and "elementary programming constructs", but the conflict arises because the Referral uses the word "elementary", which implies obviousness. This has nothing to do with excluded subject matter or the cited decisions.

Furthermore, it is difficult to see why efficient execution of a program should not be considered as producing a (further) technical effect. For example, if the "computer" is a mobile telephone, efficient program execution will generally lead to longer battery lifetime, while if the "computer" is a mainframe, this will reducing cooling requirements (again saving power). The efficient execution may also assist in supporting real-time operations, e.g. decryption of an incoming signal, that would not otherwise be possible (or only possible with a more powerful and expensive processor).

The Referral then asks which aspects or effects of a computer should be regarded as falling into the exclusion. This is an important question (although not necessarily within the scope of the Referral). The answer from EPO case-law is clear, namely aspects that do not produce a further technical effect. Examples of these are presented elsewhere in these submissions.

Admissibility of Question 3A

This question is (beyond any possible doubt) inadmissible. None of the four cited decisions cited provides an answer to this question, nor can any definite answer be inferred from the reasoning of the decisions. Accordingly, the basic requirement of Article 112(1)(b) is not satisfied for the Referral to be admissible.

This is compounded by the vagueness of the question. It is unclear what is meant by a "physical entity in the real world". For example, would an image, as in decision T208/84 (Vicom) represent a "physical entity in the real world"? The relevance of "contribute to the technical character of the claim" is uncertain, since this wording is only significant in the context of certain decisions, which have themselves been questioned in the Referral.

Furthermore, the question completely ignores the requirement of Article 52(1) that inventions can be patented in all fields of technology.

In view of the above, it would be a potential disaster if the Enlarged Board of Appeal even attempted to answer this question.

Admissibility of Questions 3B and 3C

These questions are again inadmissible, firstly because Question 3A itself is inadmissible, and secondly because there is no divergence in the cited decisions regarding these additional questions.

For example, Question 3B implies that a (further) technical effect in a computer might be insufficient for technical character, but there is no basis in the case-law for making such a supposition. Question 3B also gives no idea as to what is meant by an "unspecified computer" (or more importantly, what would count as a "specified computer"), so the question is impossibly vague.

In addition, Question 3C does not appear to follow logically from Question 3A, in that Question 3C could be asked irrespective of the outcome of Question 3A.

Answers to Questions 3B and 3C

For Question 3B, and ignoring the word "unspecified", it is clear that a computer represents a "physical entity in the real world". It is also clear that developing computer systems is a field of technology.

Accordingly, the answer to Question 3B is "Yes".

For Question 3C, it is helpful to consider the example of a compiler. Many of the compiler operations are targeted at the particular hardware on which the binary code is to run. However, a compiler may also perform operations at a more general level, for example some code optimizations and security checks. These more general operations are not dependent on the particular hardware target of the binary code. It would be perverse to regard a compiler invention as patentable if it brought benefit to just a single hardware platform, but non-patentable if it brought benefit to multiple hardware platforms.

(In considering this example, it should be remembered that compilers are generally regarded as a field of technology, c.f. Article 52(1), as clearly demonstrated, for example, by the widespread use of the term "compiler technology").

Accordingly, the answer to Question 3C is "Yes".

Question 4

Substantive Discussion

According to the Background of the Referral, the question of whether and to what extent programming a computer is a technical or non-technical activity "affects the definition of the person skilled in the art ... Therefore it is of key importance in the field of computer technology that there is clarity concerning the skills attributable to the skilled person".

The first important point here is the reference to "computer technology". Anything that falls within this definition represents potentially patentable subject matter under Article 52(1). The same approach should therefore be taken in defining the skills attributable to the skilled person in the field of computer technology as in any other field of technology.

The second point to note is that if we follow the approach of T1173/97 and find that an invention possesses the requisite (further) technical effect, the invention is therefore is allowable under Article 52(2). The assessment of inventive step then proceeds as for any other invention (i.e. without further consideration of technicality). This would again allow the skills attributable to the skilled person to be determined as they would for any other subject matter. (This consistency of approach might be considered as another reason for approving the approach of T1173/97 over T258/03).

Regarding section II of the Referral, the wording "contrary to these decisions" implies a discrepancy between T1177/97 and T172/03 on the one hand and T833/91, T204/93, and T769/92 on the other hand. However, this discrepancy does not exist, because the Referral is not comparing like with like.

Thus in T177/97 and T172/03, the technical considerations of computer programming are discussed with a view to determining the technical nature of the resulting program. In contrast, the reasoning from the other decisions relates to the act of programming itself (rather than the resulting computer program). For example, according to T833/91, "a programmer's activity would involve performing mental acts". Clearly it is only the act of programming (rather than the resulting program) that could be considered as a mental act. Similarly, T204/93 holds that: "a programmer's activity of writing a computer program is also excluded by that Article [52(2)] because it requires performing mental acts as such". In addition, T769/92 also holds that: "mere programming as such would, in the board's view, also be excluded from patentability by virtue of the fact that it is an activity, which essentially involves mental acts excluded ... from patentability by the same Article 52(2)(c) EPC."

These three decisions are now all relatively old. I'm not sure that they would be decided in the same way today. However, this is not because of the decisions mentioned in the Referral, but rather because of a more general (and I think uncontroversial) development in case law.

Thus early EPO case law focussed on patents for a conventional manufacturing processes. An invention related to the development of a manufacturing process was held to be unpatentable, unless the claim recited as a final step actually running the

manufacturing process itself. However, it is clear that in many cases the engineering skill and economic value is in the design of the manufacturing process. Moreover, this design may often be done by a quite separate organisation from the one that handles the manufacturing (the latter in particular is frequently based in a low-cost location). Therefore, recent decisions have allowed claims relating to the design of a manufacturing process, provided the manufacturing process itself is clearly technical.

With this new perspective, I think programming would only be seen as a mental act *as such* if it was (literally) all carried out in the head. Once the program is being entered into the computer, this represents, in effect, the design and manufacture of a product, namely a computer program. This also conforms better to the general understanding of the mental act exclusion, which is that it only covers subject matter that is carried out in the head. In other words, if the claim specifies that the relevant acts are implemented by a machine, the mental act exclusion is no longer relevant.

In section III of the referral, it is stated that: "modern (high-level) programming languages do their utmost to render technical considerations unnecessary". One suspects that the author of the Referral has very little understanding of such "modern programming languages".

For example, consider Java and C++, which are two of the most important modern programming languages. Two important differences between these languages are:

a) Java relies upon automatic garbage collection to reclaim memory, while C++ requires programmers to explicitly allocate and free memory. (The approach of Java avoids "memory leaks" but at the cost of additional overhead for the operating environment).
b) C++ allows pointers, whereas Java supports true arrays rather than pointers with formal checking of array bounds. (The approach of C++ is very flexible, but is has increased security vulnerability though access to unauthorized memory locations).

It can be seen therefore that technical considerations, such as finite memory resource, or different memory access memories, remain of key importance when programming, even for modern programming languages.

The Referral identifies a range of activities that represent programming, from low-level coding to recording some form of macro. All these activities involve interaction with a computer, but as noted in the Referral, the skill of the "programmer" may vary significantly between them. However, the expected skill level of the programmer is a factor for Article 56 EPC (inventive step). It is not relevant to Article 52(2) EPC.

The Referral agues that "if a computer is deemed to lack technical character ..., it could follow that the activity used to produce the program has to be considered similarly non-technical". It is difficult to follow the logic of this argument.

According to the Referral: "it seems important to consider the actual tasks performed by a programmer. Would he be responsible for the design of the technical system and the role that the computer program plays therein, or would the design be the task of an engineer who would then pass on his (programming) requirements to the programmer.".

Admissibility and Answer of Question 4A

The finding of T1177/97 that programming involves technical considerations is completely consistent with the finding of T833/91, T204/93 and T769/92 that the mere act of programming per se would be excluded as a mental act. Indeed, this is self-evident: any development process in any field of technology, whether designing a car, an aeroplane, or a computer program, is likely to involve some mental activity. It is clear that such a development process involves technical considerations. Nevertheless, the portion of the development process that represents purely mental activity would still fall into the exclusion of Article 52(2) EPC.

Therefore the question is inadmissible, because there is no divergence in the cited decisions. They address different issues in a consistent and logical manner. The reasoning of T1177/97 and T172/03 would answer "Yes" to the question. The reasoning of T833/91, T204/93 and T769/92 does not directly answer the question, but is entirely consistent with a "Yes" answer.

However, to the extent that the EBA chooses to answer this question, the answer is "Yes".

Admissibility and Answer of Questions 4B and 4C

These questions are again inadmissible, firstly because Question 4A itself is inadmissible, and secondly because there is no divergence in the cited decisions regarding these additional questions.

To the extent that the Enlarged Board does address Question 4B however, it is important to recognise that a significant limitation in the wording of the question. In particular, the firstly refers to: "all features resulting from programming". However, if we take the claim in T208/84 (Vicom) as an example, it was expressly recognised that the relevant method steps could have been implemented using software or specialist hardware. Accordingly, for many inventions, it is simply not possible to identify "all features resulting from programming".

However, if we retain the reasoning of the decision in Vicom, it is noted that the method steps became patentable when the claim was limited so that the data being processed was specified as images (i.e. a technical input). In contrast, the original claim wording to processing abstract data fell foul of the mathematical method exclusion.

It is clear from Vicom therefore that the answer to question 4B is "No". For example, if the original claim wording (to processing abstract data) had been limited to software processing (rather than not specifying hardware or software distinction), this

would not have overcome the mathematical method exclusion. In other words, the claim would still have been considered as lacking technical character.

Therefore, to the extent that the EBA chooses to answer this question, the answer is "No".

Miscellaneous comments on some of the other submissions, some positive and some negative. I hope that nobody takes offence. (I have tried to be respectful throughout).

Bakels
Long theoretical paper that calls in effect for a radical change to all patenting (not just software). Although it is carefully considered, I think it is unrealistic in suggesting that such a radical change would lead to greater legal certainty (at least for the foreseeable future). It also suggests that current software patenting has reached a dead-end, but I don't think this view is shared by people who are most experienced in the field.

One important aspect of this paper is that it clearly recognises the difference between an invention itself, and the realisation (or implementation) of the invention. Most people blur these two together.

Balos
Brief observations, but includes the important recognitions that (i) policy issues should be kept for any future legislation, not for the current referral; and (ii) while various legal interpretations are open to debate, current EPO practice has managed to provide reasonable legal certainty.

Bayer
Contains a lot that I disagree with, for example:
*it starts with the unsubstantiated statement that the programmer's future chances in the market depend on the rejection of Software Patents. This seems unlikely (see also last item below).
*it argues that computer programs should not be patentable because they are only text to control a computer. However this argument would appear to allow the combination of program and computer (i.e. the fully functional device) to be patentable.
*it tries to draw a distinction between a computer program (as pure mathematics) and an ABS system. This is unconvincing, since an ABS system might be program-controlled.
*it asks whether thinking about a patented program would require payment of fees. However, anyone with a knowledge of patent law would know that mere thinking is not an infringing act.
*it states that the point of Article 52(2) is to cause a technical effect on a physical entity in the real world. However, if this is the point of Article 52(2), why does Article 52(2) not use this expression, instead of providing a non-exhaustive list of non-inventive subject matter. It could be argued that regulations regarding, for example, the size of a tennis racket, do have a technical effect on a physical entity in the real world, but are nevertheless excluded under Article 52(2) as rules for playing a game.
*it states that programs are already protected by copyright and hence patents are redundant. However, for most software inventions, copyright would provide little or no effective protection.
*it states that legalizing software patents would wipe out the software industry. Quite apart from the issue that (as is clear from the Referral itself), patents are already available for some software inventions in Europe, it is observed that the USA has

many more software patents, yet still has many thriving software companies – Microsoft, Google, Oracle, Red Hat, etc.

BIKT

Long submission based heavily on German national law. I have studied this in detail, but the general impression is that programs cannot be patented because they infringe on the rights of the copyright holders in the programs. I do not see the logic of this argument, since owning copyright does not guarantee full freedom with respect to the relevant material. For example, if I write an article in England, I will own copyright. However, I may not be able to publish or exploit the article if it is libellous or infringes the privacy right of an individual. Clearly therefore copyright can be subject to other restrictions.

The submission argues that any restrictions on copyright must be proportionate. In particular, it is stated that open source software makes code freely available to the public whereas the patent system restricts the use of such code. However, any assessment of proportionality must be based on the copyright system as a whole, not just one particular model of code distribution. In particular, a lot of code is not freely available to the public, and indeed may never be published. In this case, the publication of a patent may lead to publication of technical information that would otherwise remain unavailable to the public. This could easily be seen as a desirable and proportionate goal of the legislature.

In any event, this is not a proper issue for the Enlarged Board to consider in the present referral, since it is bound up with a particular interpretation of national law that does not even appear to be well-established, e.g. supported or even considered by significant court decisions, in the country concerned.

The submission appears to accept the patentability of a program code for controlling a washing machine, but not for a standard computer. However, according to the definition of computer in the Referral, such a washing machine would be considered a computer (because it can be programmed).

It is very difficult to see how the proposal would be applied in practice. For example, programs for standard peripherals (printer, monitors) would apparently not be patentable. However, when does a monitor become a television, or a DVD viewer. Likewise, when does a printer stop being a computer peripheral and become part of a publishing system, or a packaging system, etc.

Cowsely

Contains the argument that any program is obvious given the initial design of the computing language. The same argument would invalidate any electronics patent comprising standard components (resistors, transistors, etc) and even any new compound invention (made out of known chemicals).

De Keyzer

Supporter of free software and therefore opposed to software patents. This is a policy statement for the legislature to consider. It is not relevant to the specific legal questions of the referral.

Duhme
Well-informed and interesting contribution.

Gustavson
Argues that a program can form an inventive combination with a special-purpose computer but not with a general-purpose computer. However, what counts as a "special-purpose" computer – e.g. a PDA, a mobile telephone, a blade computer for insertion into a server rack, a backup storage system? The distinction between general purpose and special purpose appears to be without any legal basis and impossible to apply in practice. Furthermore, such an approach would lead to the situation where a program which is limited in benefit to one machine would be patentable, but a program which provides benefits to multiple different machines would not be patentable. It is difficult to see any economic logic to such an arrangement.

Hallen
This document attempts a generalisation of Article 52(2) to abstract entities. However, a sculpture is an aesthetic creation and also clearly non-abstract (in the sense that it is a tangible physical entity, not in the sense of abstract or figurative art). The submission argues that a computer program is similar to such abstract entities. However, a computer program is directly functional, and is also a commercial product, unlike most of the other excluded categories. Patents have traditionally been available for functional products.

It is also argued that a program sequence is the same when run on a physical machine, a virtual machine or in a human brain. However, a virtual machine is a program running on a physical machine, so that a physical system is necessarily involved. Furthermore, it is difficult to understand what is meant by running a program in the human brain. Most programs require various forms of input/output (mouse positions, cursor movements, etc), data communications with other systems, etc. Other programs might be concerned with particular hardware structures, such as manipulation of physical memory, etc. Only a very small percentage of programs (if any) are as abstract as implied in the submissions.

Lawrence
Argues that software patents will be used by large companies to block small companies. Interestingly, experience in the US is to the contrary - the most enthusiastic advocates of software patents are often small companies that want to attach large companies. This is a matter of policy and is not directly relevant to the referral.

ScriptumLibrum
Argues that patentability should be based on "a balance of interest, rather than a cumbersome search for the essence of the technology concept". However, the patent system is already designed to balance the interests of the various parties (although such balancing will never be perfect). In addition, the "technology concept" is a legal requirement by virtue of Article 52(1) EPC. Mainly concerned with policy issues that are not directly relevant to the Referral.

Sterckx

This is a long and interesting submission, but I do not fully agree with all the points raised. For example, the author is also perhaps a little harsh on the EPO in writing that: "if the EPO's belief, diverging from the rest of humanity, is that computer programs are really methods and as methods should be patentable, then there is nothing stopping them being claimed as methods, and from decision T-208/04 *Vicom* onwards it has been abundantly and unarguably clear that methods involving the use of a computer program are not excluded by Article 52(2) EPC".

I think the EPO and most other people understand that a computer program contains instructions and hence inherently corresponds to a method. If the patentability of methods per se is "unarguably clear" then the exclusion of Article 52(2) for computer programs might be considered futile, since the computer program could always be protected, in effect, by patenting the corresponding method (thereby preventing any use of the program). Indeed, this is probably one of the few points of agreement between those who do or do not support the patentability of software.

The author also addresses the question of what is a computer program without touching on the issue of the definition for computer in the Referral itself, which by its own admission (but without any justification) is far broader than the normal understanding of this term.

The submissions include a reference to the pressure on the Boards of Appeal to interpret the exclusions of Article 52(2) EPC narrowly. However, the relevance of this is unclear, since the Boards of Appeal have shown themselves fully able to resist the pressure of applicants, as shown by the very high refusal rate for business method type cases.

The author also argues that the EBA cannot interpret away any points that are non-TRIPS compliant. At one level this is true. However, it should be borne in mind that all EPC states (except Monaco I believe) are WTO members, and clearly the intention of EPC 2000 was to make the EPC TRIPS compliant. Therefore, given the choice between a TRIPS-compliant interpretation (the recognised intention of the lawmakers) and a non-TRIPS-compliant interpretation (clearly contrary to the intention of the lawmakers), any ambiguity should necessarily be resolved in favour of the former. Note that this would apply to all of EPC 2000, whether amended or not (since it would be assumed that any non-compliant TRIPS wording would have been amended).

The author argues that because the proposal to delete the computer program exclusion from Article 52(2) was not accepted for EPC 2000 "it is implicit that Article 52(2) and 52(3) EPC must serve to exclude some technical subject matter". I would disagree with this remark, since the proposed deletions were dropped in favour of the Commission activity (the proposed Directive).

To look at this another way, it is beyond dispute that the "non-technical subject" matter interpretation of Article 52(2) by the EPO was well-established before the EPC. The author is then trying to argue that this approach must be wrong because EPC 2000 did ***not*** change the law. This is exactly opposite to the natural and logical conclusion, namely that by leaving the law unchanged, the legislators in effect confirmed the existing interpretation.

Despite the above misgivings, the main proposal of author (that computer systems – i.e. combinations of programs and machines, but not programs simply on carriers) is interesting.

Strauss
Brilliant! This is in a completely different league in terms of cogent intellectual content and legal knowledge compared to every other submission I've seen. Surprisingly, the only person as far as I can tell to have actually read through all of Article 112(1)(b).

Thum
Appears to argue mainly that software patents are unpatentable as algorithms. However, there is no particular reason why algorithms are unpatentable in Europe. (This sentiment is just a hangover from one of the (many) idiosyncratic aspects of US law).

Wessels
Argues that you can only patent inventions outside the field of computing. This appears to conflict with both Article 52(2), which only excludes computer programs (not computing), and also Article 52(1), since it can hardly be argued that computing is not a field of technology.