

## G3/08 – OPINION OF THE ENLARGED BOARD OF APPEAL ON COMPUTER-IMPLEMENTED INVENTIONS

In October 2008, following some controversy over EPO Technical Boards of Appeal decisions on how computer-implemented inventions should be examined, the President of the EPO, Alison Brimelow, referred some questions on this topic to the Enlarged Board of Appeal. Last month, over 18 months later, the Enlarged Board gave its opinion.

The Enlarged Board has rejected the referral as inadmissible. It has held that there are not sufficient differences between decisions issued by the Technical Boards of Appeal, a prerequisite for a referral by the President of the EPO. This is not a surprise – many commentators had suggested the referral was not admissible. The Opinion of the Enlarged Board is a strong endorsement of the existing Board of Appeal case law, namely that any technical feature in a claim is sufficient to avoid the exclusions but only technical features contribute to inventive step. Therefore most cases that are refused are refused for lack of inventive step rather than as excluded from patentability. Thus, the Opinion *prima facie* does not set out any new law but its commentary on the existing law is interesting and will be discussed below. A large part of the Opinion relates to the criteria for a Presidential referral and will only be of limited interest, so will not be discussed below.

### Existing Case Law on Computer-Implemented Inventions

Technical Board of Appeal 3.5.01 (TBoA), chaired by Stefan Steinbrener, has almost single-handedly developed the EPO case law in this area in the last 10 years or so. The Board has moved away from the approach defined in early cases such as *Vicom*<sup>1</sup> that required an invention to make a “technical contribution” to the prior art in order to avoid the exclusion of EPC Art 52(2). In a “Trio” of decisions issued between 2000 and 2004 - *Pension Benefits Partnership*<sup>2</sup>, *Comvik*<sup>3</sup> and *Hitachi/Auction Method*<sup>4</sup> - TBoA 3.5.01 developed the doctrine that mention of any technical feature in a claim is enough to satisfy Art 52(2) but only “technical” features can count towards an inventive step.

Following criticism of the EPO case law by the UK Court of Appeal, TBoA 3.5.01 summarised and defended its position in *Duns Licensing/Estimating Sales Activity*<sup>5</sup> issued in November 2006. *Duns Licensing* has therefore been taken as the definitive statement of EPO practice in the area of computer-implemented inventions. As mentioned above, a mere recitation of a technical means, e.g. that a method is carried out by a computer, is sufficient to avoid exclusion by Article 52(2) EPC. However, in considering inventive step, non-technical features in the claims are effectively disregarded. As we explain further below, in the EPO’s “problem and solution” approach to inventive step, non-technical aims and features are deemed “constraints to be met” that are applied in a preliminary phase prior to any inventive activity. In effect, an invention must provide a technical solution to a technical problem and be inventive from the point of view of a person skilled in a technical field. Thus objections to non-technical inventions in the EPO are now more often based on lack of an inventive step than on exclusion by subject matter. Further, if a computer implemented invention is novel and inventive, both media and program claims are allowable.

In its most basic form, the EPO’s problem and solution approach assumes that the making of an invention is a two stage process: identification of a problem and creation of a solution to that problem. An inventive step can be found in either stage; most commonly the inventive step lies in solving the problem, but an inventive step can be recognised if the problem was not obvious (even if it was easy to solve once identified). In the case of a computer-implemented invention, the case law seems to imply a three step process: 1) formulation of non-technical constraints to be met, 2) identification of a technical problem, 3) creation of a solution to that problem and implementation of the solution in technical means.

Into the “non-technical constraints to be met” go all the non-technical issues (e.g. any business method to be implemented), which are considered “givens” for the person skilled in a technical art. No inventive step can be found there, no matter how clever or non-obvious the non-technical constraints are. To find an inventive step in the second and third steps it is necessary to identify a problem much more specific than “implement the business method in technical means”. In *Pension Benefits* and *Duns Licensing* there was no such specific problem and the claims simply recited “means for” carrying out the steps of the respective business methods, hence there was no inventive technical solution. In *Hitachi* a technical problem was identified but the solution was not technical, hence no invention. In *Comvik* the solution was technical, but held to be obvious on the facts, ignoring issues relating to the non-technical purpose behind the invention.

On the face of it the above approach would seem to rule out a class of perfectly good inventions: where a technical solution to a non-technical problem is found or a solution is implemented in a technically clever way. However, it should be possible to protect these types of invention by suitable redefinition of the problem and Boards of Appeal have in the past said that if a technical invention is clearly inventive, the existence of a technical problem is implicit and it does not need to be explicitly identified.

One significant absence in the current EPO case law is the lack of a definition of what is technical. The best that has been said is that a technical field is one that is not one of the excluded fields listed in Article 52(2), such as a business method or computer program, but since this is a non-exhaustive list, it cannot be taken that everything else is technical. The reasoning of *Duns Licensing* implies that one guide to whether a field is technical would be the skills and qualifications of the practitioners in that art.

### Commentary by the Enlarged Board on the Existing Case Law

Probably the most important comment in G3/08 is a strong endorsement by the Enlarged Board of the “Trio” and *Duns Licensing*:

*Nor is the Enlarged Board aware of any divergence in this case law, suggesting that the Boards are in general quite comfortable with it. It would appear that the case law, as summarised in T154/04 [Duns Licensing], has created a predictable system for delimiting the innovations for which a patent may be granted.<sup>6</sup>*

This means that *Duns Licensing* must now be taken as the definitive statement of how computer-implemented inventions should be treated in the EPO. Earlier case law such as *Vicom* and *Sohei*<sup>7</sup>, which imposed tests that an invention should make a technical contribution or be based on technical considerations, must be regarded as obsolete.

The Enlarged Board explicitly approves this kind of development of the law, referring to it as “an essential aspect of [the law’s] application, whatever method of interpretation the judge applies, and is therefore inherent in all judicial activity.” The Enlarged Board sees its position as not to interfere in the development of the law but only to intervene when two contemporaneous Board of Appeal decisions actually conflict. In the course of such legal development “a radical shift” is permitted “provided the Board corrects itself and – mostly in explicit fashion – declares its earlier practice to be no longer relevant.”

Each of the questions of the referral is considered by the Enlarged Board and the Enlarged Board sets out how the questions can be answered on the basis of existing case law, without encountering any actual conflict. Any divergence is resolved in favour of the newer decision. We summarise below the Enlarged Board’s conclusions, but first it is worth considering the two questions that were not asked.

None of the questions referred to the Enlarged Board sought or implied a definition of “technical subject matter”. The Enlarged Board expressly state that they do not attempt to define “technical”. The Technical, and now Enlarged, Boards’ refusal to define technical is probably to avoid being embarrassed by future technological development but some guidance in this field would be welcome, particularly as Boards now have licence to develop any such guidance in line with technological development.

The other issue not addressed by the questions of the referral was the treatment (i.e. ignoring) in consideration of inventive step of non-technical features in a claim containing a mix of technical and non-technical features. This is the heart of the *Duns Licensing* approach and mitigates the effect of

allowing a single technical feature to take the claim out of excluded subject matter (Article 52(2)). It was also an aspect of EPO case law heavily criticised by the UK Court of Appeal. The Enlarged Board notes that none of the questions addresses this issue and “can only speculate that the President could not find any divergence in the case law on this issue”. The Enlarged Board also notes that “rejection for lack of an inventive step rather than exclusion under Article 52(2) EPC is in some way distasteful to many people” but, as mentioned above, nevertheless endorses it.

## The Questions Referred to the Enlarged Board

We set out below the questions that were referred to the Enlarged Board and briefly summarise the Enlarged Board’s comments

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

This question attracts the longest discussion, but ultimately the Enlarged Board rejects the question as inadmissible and does not state what the answer would be. Instead Enlarged Board answers question 2(a) in the affirmative:

*a claim in the area of computer programs can avoid exclusion under Articles 52(2)(c) and (3) EPC merely by explicitly mentioning the use of a computer or computer readable storage medium.<sup>8</sup>*

The failure to give an answer to the question is probably necessary because current EPO case law does not agree with the premise behind question 1, that explicitly claiming an invention as a computer program would result in exclusion. The standard form of computer program claim states that it comprises “code means” that are “executed by a computer system” and thereby avoids the exclusion.

**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?*

**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?*

Having already answered question 2(a) in its discussion of question 1, it is a little unclear why the Enlarged Board’s discussion of this question contains an extensive discussion of whether a computer program and the method that it performs when executed are the same thing and whether a claim to a computer program is coterminous with a claim to a computer-implemented method. The referral says that they are, the Enlarged Board says not.

**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?*

The Enlarged Board addresses these questions relatively briefly, noting that there is in fact no divergence between the cited decisions. According to the Enlarged Board, no decision of a Technical Board has required an interaction with the real world but some have noted that such an interaction is sufficient to contribute to technical character of a claim. The Enlarged Board says all features of a claim can, in principle, contribute to technical character, remembering that some features may not contribute to inventive step.

In fact, we believe there is a discrepancy between two decisions of different Technical Boards of Appeal that is not noted in the referral nor discussed in the Opinion. In *Philips/Designing Optical Systems*<sup>9</sup> the point was made that a method of “mere design”, even of a technical thing, is purely abstract and thus not patentable, unless the claims are limited to a concrete step in the real world such as making the thing designed. However, *Infineon/Circuit simulation*<sup>10</sup> held that simulation of an electric circuit of a particular form and more generally “specific technical applications of computer-implemented simulation methods” are inherently technical, even without some step interacting with the real world.

**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?*

The Enlarged Board’s view on these questions is quite straightforward. Programming a computer does necessarily involve technical considerations but that is not sufficient for the resulting program to have technical character. For a program to have technical character and inventive step the programmer must have had technical considerations beyond “merely” finding a computer algorithm to carry out some procedure. Such technical considerations, if the procedure to be carried out is not itself technical, might be to find an algorithm that carries out the procedure in a technically better manner, e.g. by reduced use of technical resources such as memory, processor time or bandwidth. The Enlarged Board indicates that *Sohei*, which held that any technical considerations are sufficient to confer technical character, is overruled by later case law. It also implies that a method of design that can take place in the designer’s mind would be excluded. Thus steps of making the thing designed may be necessary to confer patentability.

## Impact on National Law

The substantive aspects of patent law of the member states of the EPC are supposed to be harmonized to the relevant provision of the EPC and National Courts are supposed to take note of Decisions of the Boards of Appeal of the EPO. Opinions of the Enlarged Board clearly have a greater weight than those of the Technical Boards. Thus National Courts of the member states of the EPC ought to follow the case law now endorsed by the Enlarged Board.

Decisions of the German Federal Supreme Court (Bundesgerichtshof or BGH) are said by some commentators to be in harmony with EPO case law. However recently issued decision Xa ZB 20/08<sup>12</sup> seems to impose a stiffer test than EPO case law for avoiding exclusion from patentability. Rather than the mere presence of a technical feature, the BGH appears to require an invention to relate to the operational capability, and/or provide improved performance, of the computer system.

In the UK, the most recent Judgement of the Court of Appeal on this issue, *Symbian’s Application*<sup>13</sup>, expressly declined to follow the approach set out in the “Trio” and *Duns Licensing* in favour of its own earlier precedent which set out a “technical contribution” test much more similar to *Vicom*. However, the first point of their reasoning for not following the “Trio” and *Duns Licensing* was the lack of an Opinion from the Enlarged Board and the second point was that the EPO case law was not settled. The Opinion of the Enlarged Board apparently settling EPO case law may overcome these two reasons preventing the Court of Appeal from following the EPO. However, the Court of Appeal’s other reasons for not doing so included a concern that, if mere mention of a technical feature is enough to avoid exclusion, “the computer program exclusion may have lost all meaning”. That a mere mention of a technical feature avoids exclusion has now been emphasised by the Enlarged Board.

Therefore, our view continues to be that the EPO is a more friendly forum for computer-implemented inventions than the UK-IPO and possibly also than the German PO.

## Practical Pointers

The Opinion of the Enlarged Board confirms the practical pointers we have given on the subject of computer-implemented and business method inventions:

- Pure business methods, that is methods not involving any technical means at all, are not patentable in the EPO or the UK-IPO.
- Borderline cases, especially in the field of computer science, are more likely to be granted by the EPO than by the UK-IPO.
- In the EPO in particular, the technical nature of the invention is important and text in the introduction to the application explaining why the invention is technical and setting out any technical problems can greatly assist in forestalling objection.
- Inventions, such as methods of design, that provide abstract results, should be tied to the real world, e.g. by the inclusion of a step of manufacturing a tangible product or perhaps a measurement, and basis for such limitations need to be included on first drafting.
- Description of, and preferably claims to, novel and inventive hardware elements or configurations will greatly assist.

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## Annex – EPC Article 52 (as amended by EPC 2000)

*(1) European patents shall be granted for any inventions, in all fields of technology, provided they are new, involve an inventive step and are susceptible of industrial application.*

*(2) The following in particular shall not be regarded as inventions within the meaning of paragraph 1:*

*(a) discoveries, scientific theories and mathematical methods;*

*(b) aesthetic creations;*

*(c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;*

*(d) presentations of information.*

*(3) Paragraph 2 shall exclude the patentability of the subject-matter or activities referred to therein only to the extent to which a European patent application or European patent relates to such subject-matter or activities as such.*

## References

All cited EPO cases may be found in the EPO's database of decisions at [www.epo.org/patents/appeals/search-decisions.html](http://www.epo.org/patents/appeals/search-decisions.html)

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<sup>1</sup> [T208/84](#) of 15 July 1986

<sup>2</sup> [T931/95](#) of 8 September 2000

<sup>3</sup> [T641/00](#) of 26 September 2002

<sup>4</sup> [T258/03](#) of 21 April 2004

<sup>5</sup> [T154/04](#) of 15 November 2006

<sup>6</sup> [Reasons for the Opinion paragraph 10.13.2](#)

<sup>7</sup> [T769/92](#) of 31 May 1994

<sup>8</sup> [Reasons for the Opinion paragraph 10.13](#)

<sup>9</sup> [T471/05](#) of 6 February 2007

<sup>10</sup> [T1227/05](#) of 13 December 2006

<sup>12</sup> [Available in German](#) at [www.bundesgerichtshof.de](http://www.bundesgerichtshof.de) via link "Entscheidungen" or Google "Xa ZB 20/08"

<sup>13</sup> [\[2008\] EWCA Civ 1066](#) of 8 October 2008 available at <http://www.bailii.org>