

# *Amicus Curiae* Brief for case G1/19 before the EPO Enlarged Board of Appeal

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## 1. Introduction

In this *Amicus Brief* the author, as an independent academic, aims to shed some light on the questions submitted from a methodological perspective. These questions are based on a number of assumptions that must first be analyzed before an attempt can be made to answer them.

## 2. Analysis of criteria

Following a very old German tradition,<sup>1</sup> the EPO only grants patents on technology. This apparently simple criterion often turns out to be remarkably difficult to apply. The questions submitted alone refer to a technical *system*, a technical *process*, a technical *problem*, a technical *effect* and technical *principles*. No wonder an English judge called the technology criterion a "restatement of the problem in more imprecise language".<sup>2</sup>

If only patents can be granted on technology, it appears reasonable to require the technical aspect of the application to be novel and non-obvious, respectively the novel and non-obvious aspect to be technical. At first glance, this seems to be confirmed by the provisions that require novelty<sup>3</sup> and non-obviousness,<sup>4</sup> since they

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<sup>1</sup> Supreme Court of the German Reich 20 March 1889, *PatBl* 1889 (*Kongorot*); Supreme Court of the German Reich 21 January 1933, 271/1932, 38 *GRUR* 1933, p. 289-292 (*Multiplikationstabelle*).

<sup>2</sup> Patents Court 21 July 2005, nr. 2005 EWHC 1589 Pat, *RPC* 2006, p. 5, nr. 14 (*CFPH*). This decision mentions that even a German court expressed itself in a similar sense: German Federal Supreme Court (hereinafter: BGH) 11 May 2000, nr. X ZB 15/98, 33 *IIC* 2002, p. 343-348 (*Speech Analysis Apparatus*).

<sup>3</sup> Art. 54 EPC.

<sup>4</sup> Art. 56 EPC.

refer to the "Stand der Technik" in the German text of the EPC, and "état de la technique" in the French text. The equally authentic<sup>5</sup> English text, however, refers to the "state of the art", without any mention of technology.

- 30 In order to assess whether the novel and non-obvious aspect of an invention is technical, it should be dissected into technical and non-technical aspects, but such a dissection violates the principle that patent applications should be assessed *as a whole*. That rule has been ridiculed because it would imply that the technical aspect of the application does not have to be new, so that any patent application could be  
35 "made" technical by adding an arbitrary technical device, for instance a printer.<sup>6</sup>

- Another argument for such a dissection is that otherwise, for example, a coffee cup with a new image on it would be patentable.<sup>7</sup> It seems more appropriate to note that the new aspect of this invention is not technical, being an "aesthetic creation",<sup>8</sup> while the technical aspect, the cup is not new. But the proper reason for rejection is  
40 obviousness.<sup>9</sup> For that reason, the BGH rejected several "aesthetic inventions".<sup>10</sup>

Because the legislation seems to require an assessment of the technical content of an application both in the context of the assessment of the subject-matter, and in the context of the assessment of novelty and non-obviousness, a writer speaks of a "legislative construction failure".<sup>11</sup>

- 45 Still, it makes sense to assess patent applications *as a whole*, if only because the EPC allows a patent application to relate to just a "single general inventive concept",<sup>12</sup> while only features may be claimed that are relevant for solving the problem faced by the inventor.<sup>13</sup> Therefore, it should not come as a surprise if a dissection of an application into technical and non-technical elements proves to be difficult.<sup>14</sup>

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<sup>5</sup> Art. 177 EPC.

<sup>6</sup> See Ralph Nack, 'Sind jetzt computerimplementierte Geschäftsmethoden patentfähig? - Analyse der Bundesgerichtshof-Entscheidung "Sprachanalyseeinrichtung"', 49 *GRUR Int* 2000, p. 853-858(856).

<sup>7</sup> EPO Enlarged Board of Appeal, 12 May 2010, case G3/08, under 10.6 (PRESIDENT'S REFERRAL/*Programs for computers*).

<sup>8</sup> Art. 52(2b) EPC.

<sup>9</sup> Art. 56 EPC.

<sup>10</sup> BGH 23 November 1965, case Ia ZB 210/63, *GRUR* 1966, p. 249-251 (*Suppenrezept*), BGH 18 May 1967, case Ia ZR 37/65, *GRUR* 1967, p. 590-592 (*Garagentor*).

<sup>11</sup> Zie Ralph Nack, 'Der Erfindungsbegriff - eine gesetzgeberische Fehlkonstruktion?', 116 *GRUR* 2014, p. 148-152.

<sup>12</sup> Art. 82 EPC "Unity of Invention".

<sup>13</sup> In German law: German Federal Patent Court 12 August 1987, case 19 W (pat) 56/85, 89 *GRUR* 1987, p. 799-800(800) (*Elektronisches Stellwerk*).

<sup>14</sup> EPO Technical Board of Appeal (hereinafter TBA) 21 May 1987, T 26/86, under 3.4. 11 *OJ* 1988, p. 19 [1988] *E.P.O.R.* 72 (*X-ray Apparatus /KOCH & STERZEL*)(in which the EPO opposes the German practice at the time of dissecting applications); TBA 19 September 2007, T 688/05, [2008] *E.P.O.R.* 17

50 Incidentally, several writers point out that ignoring allegedly non-technical features is even contrary to the EPC,<sup>15</sup> Art. 113(2) EPC in particular.

The apparent conflict between the intuitive requirement of the technical aspect and the inventive aspect to coincide and the “official” requirement of a “whole contents approach” leads to opaque language that only pays lip service to the latter  
55 requirement. Even though the EPO claims to have abandoned the so-called contribution approach,<sup>16</sup> both if the technical aspect is required to be novel and if the novel aspect is required to be technical the application must be dissected. In Germany, this approach is known as the “Kerntheorie” (“core theory”), which would have been abandoned as well, but that is contested in literature.<sup>17</sup>

60 It is a remarkable paradox that the mandatory assessment of patent applications “as a whole” goes against intuition.

Another paradox is that the EPC excludes “programs for computers as such”,<sup>18</sup> which would indicate that non-technical programs are excluded.<sup>19</sup> But these programs run on computers, technical devices, and are therefore always technical in a certain sense,  
65 so the exclusion appears pointless. The EPO attempted to resolve this paradox by requiring a “further technical effect” for “computer-implemented inventions”.<sup>20</sup>

These paradoxes can be considered a “proof by contradiction” that the EPO interprets the EPO fundamentally incorrectly. The next chapter explains a better approach.

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(*Ticket auctioning system/TICKETMASTER*)(in which the dissection has the effect that no working system is left).

While in the U.S. patent applications do not have to be technical, still the question arises whether old and new claims can be distinguished. The Supreme Court noted: “... their claims must be considered as a whole. It is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements in the analysis. This is particularly true in a process claim because a new combination of steps in a process may be patentable even though all the constituents of the combination were well known and in common use before the combination was made.” U.S. Supreme Court 3 March 1981, 79-1112, 450 U.S. 175, 188-89, 101 S.Ct. 1048, 1057-58 (*Diamond v. Diehr*).

<sup>15</sup> Axel Von Hellfeld, 'Ist nur Technik Stand der Technik? - Zum neuen Neuheitsbegriff im Europäischen Patentamt und dessen Anwendung auf rechnergestützte Erfindungen', 57 *GRUR Int* 2008, p. 1007-1013(1009); Kilian Klaiber, 'Stellungnahme zur vor der großen Beschwerdekammer des EPA anhängigen Vorlage G3/08 betreffend die Patentierung von Computerprogrammen', 112 *GRUR* 2010, p. 561-566(566).

<sup>16</sup> Legal Research Service of the Boards of Appeal of the European Patent Office, *Case Law of the Boards of Appeal of the European Patent Office*. 2016, I. A. 1.4.1 b), p. 5.

<sup>17</sup> See Bernhard Ganahl, 'Ist die Kerntheorie wieder aktuell?', 94 *Mitt.* 2003, p. 537-543; Wolfgang Niedlich, 'Anmerkungen zu Ganahl "Ist die Kerntheorie wieder aktuell?"', 95 *Mitt.* 2004, p. 291-292.

<sup>18</sup> Art. 52(2c) j° (3) EOV.

<sup>18</sup> Art. 52(2c) j° (3) EPC.

<sup>19</sup> The words “as such” in art. 52(3) EPC are usually interpreted as “as far as non-technical”. *Case Law of the Boards of Appeal of the European Patent Office* 2016, *supra* note 16, at I.A.2.1, p. 10.

<sup>20</sup> TBA 1 July 1998, no. T 1173/97, 22 *OJ* 1999, p. 609-632, at 6.3 (*Computer Program Product I/IBM*).

### 3. The statutory approach

70 Actually, the EPC itself points the way to answering the question of what should be understood as an "invention", by requiring a patent application to contain a description that can be carried out by a "person skilled in the art".<sup>21</sup>

First of all, this provision shows unambiguously that an invention is a form of *knowledge*, whilst other provisions are not very clear on this. Furthermore, indirectly  
75 but unmistakably, this provision shows that a patent can only be granted on a kind of knowledge that allows a description that can be carried out by any "person skilled in the art",<sup>22</sup> in contrast to mere ideas, theories, pure science and similar knowledge, which may be valuable too, and eventually even susceptible of industrial application,<sup>23</sup> but not by *any* "person skilled in the art". The word "any" is not  
80 mentioned in the EPC, but it is inherent in the concept "person skilled in the art" that it can only be an *average* person skilled in the art.<sup>24</sup>

In common parlance, this type of knowledge is called *technical* knowledge. One may refer to a "vertical" concept of technology,<sup>25</sup> because it recognizes a hierarchy of knowledge from theory to realisation, while the traditional "horizontal" concept of  
85 technology puts disciplines side by side: mechanical engineering is technology, linguistics is not.

While the above analysis shows that it follows from the *system* of patent law that only technical knowledge can be patentable, the same rule is deduced from the EPC, that nowadays<sup>26</sup> provides that patents are granted "in all fields of technology".<sup>27</sup> However,  
90 the word "all" literally means "none excluded", and the law of treaties provides that the literal meaning should prevail.<sup>28</sup> This expansive meaning is also meant by Art. 27(1) TRIPS, from which it derives, since the World Trade Organization wanted to prescribe the Member States to recognise patents on medicines, which at the time was not yet common in the Contracting States.<sup>29</sup>

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<sup>21</sup> Art. 83 EPC.

<sup>22</sup> Of course, the description may be deficient for other reasons, if only negligence.

<sup>23</sup> Art. 57 EPC.

<sup>24</sup> German literature refers to a "Durchschnittsfachmann", an *average* expert. Rudolf Kraßer & Christoph Ann, *Lehrbuch zum deutschen und europäischen Patentrecht und Gebrauchsmusterrecht*. München: C.H. Beck, 2016, § 24 Rn. 71 p. 516.

The related U.S. provision 35 USC § 112 does include the word "any".

<sup>25</sup> Reinier B. Bakels, *The Technology Criterion in Patent Law A controversial but indispensable requirement*. Oisterwijk: Wolf Legal Publishers 2012, p. 162 e.v.

<sup>26</sup> In EPC 2000, which went into force in 2007.

<sup>27</sup> Art. 52(1) EPC 2000.

<sup>28</sup> Art. 31 Vienna Convention on the Law of Treaties.

<sup>29</sup> Joseph Straus, 'Implications of the TRIPs Agreement in the field of patent law'. In: Friedrich-Karl Beier and Gerhard Schricker (ed.), *From GATT to TRIPs: the agreement on trade-related aspects of intellectual property rights*. Weinheim [etc.]: VCH 1996, p. 160-215, nr. 26-27.

95 By starting from the technical character of the *knowledge* to be patented, the  
aforementioned paradoxes no longer occur. Then it is no longer appropriate to look  
for the "technical contribution", since carrying out an invention is an indivisible act.  
The exclusion of "computer programs as such"<sup>30</sup> can then be understood without the  
artifice of a "further technical effect": even if those programs are considered technical,  
100 the elaboration in the patent application still may fall short to consider it technical  
knowledge.

The fact that a genuine invention requires a sufficient elaboration is very relevant  
from a practical perspective, because "software patents" and "business methods"<sup>31</sup> in  
particular regularly fail to meet this requirement, which causes them to protect more  
105 than actually has been invented. They impede competition without teaching  
competitors anything, which is the intention of patents, in the end. Inventors who  
apply for patent should deliver *quid pro quo*. Still, such applications may meet the  
requirements of novelty and non-obviousness, and may even be considered  
technical, by traditional standards. So it is essential to require sufficient "vertically  
110 technical" elaboration.

While EPO case law traditionally seeks to approach the "ontological" nature of  
technology in an almost philosophical quest, the "vertical" technology requirement  
has a reason that follows from the system of patent law, which helps interpretation,  
in particular in complicated cases such as the present one.

115 The present application simply can not be honoured, since it is not "vertically"  
technical. Simulations are used to design systems that are so complex that the desired  
system does not follow directly from the requirements, but has to be determined by  
trial and error through the intervention of a designer who skillfully varies the many  
design parameters. This designer resembles more an inventor than a "person skilled  
120 in the art".

#### 4. Answering the questions

The following questions were submitted to the Enlarged Board of Appeal:

1. In the assessment of inventive step, can the computer-implemented simulation of a technical  
system or process solve a technical problem by producing a technical effect which goes beyond  
125 the simulation's implementation on a computer, if the computer-implemented simulation is  
claimed as such?
2. If the answer to the first question is yes, what are the relevant criteria for assessing whether a  
computer-implemented simulation claimed as such solves a technical problem? In particular, is it

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<sup>30</sup> Art. 52(2) jº (3) EPC.

<sup>31</sup> See U.S. Court of Appeals for the Federal Circuit, 23 July 1998, 96-1327, 149 F.3d 1368 (*State Street Bank & Trust Co. v. Signature Financial Group Inc.*).

a sufficient condition that the simulation is based, at least in part, on technical principles underlying the simulated system or process?

3. What are the answers to the first and second questions if the computer-implemented simulation is claimed as part of a design process, in particular for verifying a design?

Re question 1: The question is about the assessment of the inventive step, but the technical nature of the application should be assessed under Art. 52 EPC, in view of the objections against a dissection of applications we discussed.<sup>32</sup> Whether the *system* is technical is less relevant than that the application is insufficiently technically elaborated, since this alleged invention does not lend itself to be carried out by an average "person skilled in the art",<sup>33</sup> but requires the skills of an experienced designer, a person who resembles an inventor.

As regards "technical problems", *Von Hellfeld* convincingly explains that they do not actually exist.<sup>34</sup> For example, an invention that makes a combustion engine more economical saves money and the environment, and thus solves an economic and an environmental problem, but not a "technical" problem. These goals can also be achieved by driving less, so it seems that the use of technical *means* should be required. But then a painting would be technical too, because it is made with technical means such as canvas and paint.<sup>35</sup> The EPO noted that this rule would imply that writing with a pen would be an invention, since a pen can also be considered a "technical" tool.<sup>36</sup>

Re question 2: This question again refers to a "technical problem", a concept too confusing to be useful.

Re question 3: The software for the simulation is an integral part of the proposed solution for the problem to arrive at a good design, and should therefore always be included.

So these questions must be rejected.<sup>37</sup> We already concluded before that the application cannot be honoured due to insufficient "vertical" technical content.<sup>38</sup>

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<sup>32</sup> See p. 1.

<sup>33</sup> See p. 5.

<sup>34</sup> Von Hellfeld 2005, *supra* note 15, at p. 1010.

<sup>35</sup> Ralph Nack, *Die patentierbare Erfindung unter den sich wandelnden Bedingungen von Wissenschaft und Technologie* (PhD thesis Munich LMU 2002). Cologne [etc.]: Heymanns 2002, p. 244.

<sup>36</sup> TBA 21 April 2004, T 258/03, 27 OJ 2004, p. 575-638 (585), under 4.6 (*Auction method/HITACHI*).

<sup>37</sup> Compare: Reinier B. Bakels, 'Software Patentability: What Are the Right Questions?', 31 *EIPR* 2009, p. 514-522.

<sup>38</sup> See p. 4.



## 5. Concluding remarks

As explained above, and confirmed by several writers, the criterion of a *technical contribution*<sup>39</sup> is contrary to the EPC. Moreover, it was rejected by the legislator when the European Parliament in 2005 voted against the proposed European "Directive for computer-implemented inventions",<sup>40</sup> of which it was an essential part.

This criterion, as well as the criterion of a *further technical effect*, was developed by the Boards of Appeal to deal with alleged contradictions in the EPC.

As explained, these paradoxes are rather a sign that the EPC is interpreted incorrectly, because they do not occur in a literal interpretation of this treaty, which also shows the reason that only technology can be patentable. From that reason it can be argued whether a given patent application is sufficiently technical to honour, unlike current case law, which attempts to fathom the "essence" of technology, an endeavour that can hardly provide a definitive answer in cases such as the present one.

As Enlarged Board of Appeal, you are at a turning point. Building on existing case law is normally desirable, but then the current fundamental problems remain:

1. the paradoxes, that are covered by opaque language,
2. the lack of an explanation for the technology requirement in its current form,
3. the lack of democratic legitimacy of particular EPO interpretations.

If the EPC is followed precisely, none of these problems will occur, and then it appears in a pretty straightforward manner that the present patent application can not be honoured.

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<sup>39</sup> Both in its original and its current form.

<sup>40</sup> Proposal for a Directive of the European Parliament and of the Council on the patentability of computer-implemented inventions, Brussels, 20 February 2002.