

Computer-implemented inventions – the German view

The German Federal Court of Justice is essentially in line with the EPO Boards of Appeal in their rulings on the patentability of computer-implemented inventions. Both require that an invention have a technical character in order to be patentable

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The President of the European Patent Office (EPO) recently referred several questions concerning the patentability of computer-implemented inventions to the Enlarged Board of Appeal. In light of this referral, this article examines the development of the German Federal Court of Justice's position on computer-implemented inventions over the last 10 years – and in particular, its interpretation of Article 52 of the European Patent Convention (EPC). The Federal Court of Justice has jurisdiction to hear appeals of all decisions rendered in nullity proceedings by the Federal Patent Court at first instance. It thus has the final word on the validity not only of national German patents, but also of German parts of European patents.

EPC and German Patent Act

As a reminder, Article 52 of the EPC reads as follows:

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

(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) The provisions of paragraph 2 shall exclude patentability of the subject-matter or activities referred to in that provision only to the extent to which a European patent application or European patent relates to such subject-matter or activities as such.

Section 1 of the German Patent Act literally adopts the wording of Article 52 of the EPC. The Federal Court of Justice has thus confirmed several times that, in view of the desired harmonisation of European patent law, both provisions must be treated equally and interpreted identically. Consequently, in its recent decisions the court has almost always cited not only its own rulings, but also relevant decisions of the EPO Boards of Appeal. Like the EPC, German law is based on the continental European civil law tradition, which allows for the continuous evolution of the jurisprudence of the Federal Court of Justice (this is also the case for the jurisprudence of the EPO Boards of Appeal). Of course, the Federal Court of Justice is bound by the facts of each case. As a consequence, it has taken several years for the court to shift from its former restrictive position to today's more liberal approach.

With respect to computer programs, Article 52(2)(c) of the EPC is of particular importance. At first glance, it seems to exclude, in general terms, "programs for computers" from patentability as inventions. This provision was added to the EPC in order to adapt it to the corresponding Rule 39.1 of the Patent Cooperation Treaty (PCT), which was

introduced merely because in 1970, when the PCT was signed, it was believed that it would not be possible to search for prior art for software patent applications (software apparently being understood as the source code of a program). Today, Rule 39.1(vi) of the PCT still provides that no international searching authority shall be required to search an international application if its subject matter relates to computer programs, to the extent that the international searching authority is not equipped to search prior art concerning such programs.

However, in 1973, when the EPC was discussed, computer programs and computer sciences were still new technologies. Therefore, the diplomatic conference decided that the courts should be given some flexibility to interpret the definition of “patentable inventions”. As a consequence, Article 52(2)(c) of the EPC was limited in Article 52(3) to “programs for computers as such”. This formulation should give courts the discretion to allow patentability of certain inventions implemented by or using a computer program. During the revision of the EPC in November 2000, the wording “in all fields of technology” was then introduced in order to bring Article 52(1) of the EPC into line with Article 27 of TRIPs. However, the deletion of the general exclusion of programs for computers in Article 52(2), which had originally been proposed, was postponed and was not adopted during the diplomatic conference on the revision of the EPC. The new EPC 2000 entered into force in December 2007.

Federal Court of Justice jurisprudence

In the EPO, a new era began with the 1998 decision in *Computer program product/IBM* (T 1173/97) and the abandonment of the so-called “contribution approach”. In Germany, the Federal Court of Justice’s decision in *Logic verification* (BGH X ZB 11/98 – *Logikverifikation*) a year later, followed by its 2000 decision in *Speech Analysing Device* (BGH X ZB15/98 – *Sprachanalyseeinrichtung*), paved the way for its leading *Search for faulty strings* ruling (BGH X ZB 16/00 – *Suche fehlerhafter Zeichenketten*), issued in 2001. Most of its subsequent decisions – *Offer of Interactive Support* (BGH X ZB 33/03 – *Anbieten interaktiver Hilfe*), *Electronic Payment System* (BGH X ZB 20/30 – *Elektronischer Zahlungsverkehr*) and *Examination of Profitability* (BGH X ZB 34/03 – *Rentabilitätsermittlung*), all from 2004, as well as *Data Storage Support* (BGH X ZR 188/01 – *Aufzeichnungsträger*) from 2005,

Prepaid Telephone Calls (BGH X ZR 213/01 – *Vorausbezahlte Telefongespräche*) from 2006 and the most recent *Control device for examination modalities* (BGH X ZB 22/07 – *Steuerungseinrichtung für Untersuchungsmodalitäten*) from 2009 – refer to one or all of these three basic decisions.

Technical character of an invention

In *Logic verification* the Federal Court of Justice confirmed that, like Article 52 of the EPC, Section 1 of the German Patent Act specifies that two criteria must be met in order for an invention to be patentable: (i) the invention must be technical and not excluded under Articles 52(2) and (3) of the EPC; and (ii) the invention must be new, inventive and susceptible to industrial application. A computer program is automatically excluded from patentability only if it is a computer program “as such” or has no technical character. Although the term “invention” is not further defined in the law, technical character is a requirement for all inventions eligible for patent protection. In this regard, the Federal Court of Justice referred to its own longstanding jurisprudence, the provisions of TRIPs and the corresponding interpretation of the EPO. Today, following the addition of the words “in all fields of technology” to Article 52 of EPC 2000 and the corresponding amendment of the German Patent Act, there should no longer be any doubt about that. The court also emphasised in this decision that the legal understanding of the term “technical” in patent law is not static and should be modified where technological developments so require.

The computer in *Logic verification* was a standard computer with no changes or improvements, except for the specific computer program running on it. Thus, the indicia acknowledged thus far for technical character (eg, a certain technical functionality, a specific use of a computer, control of a technical apparatus or the analysis of measurement data) were not present. The court found that in order to answer the question of whether an invention using a computer program is patentable, the whole subject matter of the patent application must be examined. This requires an evaluation of the claimed subject matter independently of whether it is new or inventive. The decisive question is: what are the dominant features of the claimed teaching, from the point of view of a skilled person at the filing date of the patent application? In this case the first



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instance court had already found that the proposed method for the verification of a hierarchical layout logic circuit required technical considerations by a technically skilled person. The Federal Court of Justice held – with reference to the EPO decision in *General-purpose management system/SOHEI* (T 769/92) – that a teaching which is based on technical considerations has technical character.

However, the court did not examine in detail the question of whether the claimed teaching was excluded as a computer program as such, because in the court's view the claimed teaching fulfilled none of the three different criteria in legal doctrine as to what is excluded by the legal provisions – that is:

- Mental concepts such as accounting programs.
- Mere program code or program listings.
- No further technical effect going beyond the normal physical interaction between the software and the computer (as requested by the EPO in *Computer program product/IBM* -T 1173/97).

In the following decision, *Speech Analysing Device*, which related to a device claim, the Federal Court of Justice stated that a device or apparatus that uses a computer program is always technical, even if it is used for word processing. It is an industrially produced and applicable device that consumes energy, in which different switching states occur as in any general-purpose computer, but also as in a specifically configured data processing apparatus. Such an apparatus does not become non-technical merely because it uses a computer program which adds further – probably non-technical – characteristics to it. Furthermore, for the purpose of assessing the technical character of such an apparatus, it is irrelevant if it provides a (further) technical effect that goes beyond the normal physical interaction between the program and the computer, or if it contributes to the state of the art. A device remains technical even if human interaction with a computer program is required. In its 2004 decision in *Offer of Interactive Support*, the Federal Court of Justice further underlined that Section 1 II Nr 3 of the German Patent Act, like Article 52(2)(c) of the EPC, relates only to programs for computers and not to data processing systems or computers. Thus, it concerns only methods and not devices or apparatus.

Again, the court found that a contribution to the state of the art is to be examined only when assessing novelty

and/or inventive step. When assessing inventive step of an invention comprising technical and non-technical features, the whole subject matter of the invention must be considered.

Exclusion of computer programs as such

Following the above rulings, which related only to the question of the technical character of an invention, the Federal Court of Justice examined in its *Search for faulty strings* decision how the exclusion of programs for computers in Articles 51(2) and (3) of the EPC should be interpreted. In this decision, the Federal Court of Justice underlined that the term “programs for computers as such” in Articles 51(2) and (3) of the EPC cannot simply be understood as a computer sciences specialist would understand it. It is a legal term and must therefore be interpreted according to the spirit and aim of the law, as is common in continental European practice. The wording of Articles 52(2) and (3) implies, on the one hand, that computer programs are not completely excluded from patentability; but on the other, that not all computer programs are patentable even if the other requirements (technical character, novelty, inventive step, industrial application) are met. Therefore, in order to be patentable, it is not merely sufficient that an invention makes use of a computer: there must be some additional characteristic that makes the computer program patentable. Patent law has been established to promote technical solutions to technical problems which are new, inventive and susceptible to industrial application. Consequently, a computer-related invention cannot be patentable merely because it exceeds in some way the common use as a computer program. Rather, the dominant instructions of a claimed teaching must solve a concrete technical problem. It does not matter how the claim is formulated – whether as a computer program or any other embodiment using a data processing system. Consequently, the Federal Court of Justice concluded that patent claims which propose the use of a computer for the execution of certain methodological steps in classic technological fields such as engineering, physics, chemistry or biology are generally patentable. If this is not the case, it must be examined whether the computer-implemented teaching exhibits further characteristics that allow patentability in view of the spirit and aim of the Patent Act: in other words, whether the overall teaching of the invention is technical. According to the court, this view is supported by the structure of the law. The other subject matter listed in Article 52(2) of the EPC (eg, scientific theories

and mathematical methods or schemes, rules and methods for performing mental acts) is excluded from patentability only if claimed outside the context of a concrete application. Where such subject matter is applied for the solution of a concrete technical problem, it is basically patentable. The court also reiterated that the Patent Act has been explicitly adapted to the EPC. As discussed above, at the time the EPC was introduced, it was recognised that the embryonic computer sciences sector should not be blocked by an overly large extension of patent protection. Therefore, inventions in traditionally non-technological fields should not be patentable merely because they are applied by means of a computer. On the other hand, it would go too far to exclude from patentability a teaching that is characterised by technical steps or considerations merely because a computer or computer program is used.

Conclusion

Although it has sometimes adopted a slightly different reasoning, the Federal Court of Justice is essentially in line with the EPO Boards of Appeal in terms of their interpretation of Section 1 of the German Patent Act and Article 52 of the EPC, respectively. Like the Boards of Appeal, the court requires that an invention have a technical character in order to be patentable. However, in some cases it is not entirely clear whether the Federal Court of Justice always differentiates between the criteria of technical character and non-exclusion of a computer program as such under Article 52(3) of the EPC. In particular, in *Logic verification* the court first examined the technical character of the invention and then had a separate look at the question of exclusion. One reason for this might be that Article 52 of the EPC specifies no order of examination for the patentability requirements.

The following conclusions can thus be reached regarding the practice in Germany:

- Technical character is a requirement for all inventions eligible for patent protection.
- A teaching that is based on technical considerations has technical character.
- A device or apparatus that uses a computer program is always technical.
- The dominant instructions of a claimed teaching must solve a concrete technical problem by technical means.
- It does not matter how the claim is formulated – whether as a computer program, data carrier or any other embodiment using a data processing system. ■

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