Patenting procedures related to data processing systems and methods

Examination practice in the field of data processing at the EPO

Agenda

- Legal basis
- The technical approach
- Case law examples
- Fallacies
Basis on the EPC 2016

β Article 52 - Patentable inventions

β (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.

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

• discoveries, scientific theories and mathematical methods;
• aesthetic creations;
• schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;
• presentations of information.

β (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.

Guidelines for “as such”

β Travaux préparatoires (1973)

• statement by the UK delegation: computer programs as a 'mathematical application of a logical series of steps in a process which was no different from a mathematical method'.

β EPC (2000)

• Diplomatic Conference of 2000, the decision in the case T1173/97 (IBM) was considered to justify the deletion of the provision excluding computer programs as non patentable subject matter.

β European Commission (2005)

• a G03/08 member attended as an expert for the European Commission a number of meetings of the responsible committee of the Council of Ministers where the proposal of a EU-directive on CII was discussed.

β Boards of Appeal interpretation in G03/08 (2010)

• Point 7.2.5. Thus it is clear that the interpretation of the EPC is primarily the responsibility of the Boards of Appeal. As a rule they have interpretative supremacy with regard to the EPC because their decisions are subject to review only under the narrowly defined conditions of Article 112(1) and 112a(2) EPC.
“Technical”

B. Common character of the list items of A. 52(2)

B. R. 43(1): “The claims shall define the matter for which protection is sought in terms of the technical features of the invention”. R. 42(1): “The description shall specify the technical field”, “the technical problem”.

B. T1173/97 (IBM) technical character as an essential requirement

- 6.1. Within the context of the application of the EPC the technical character of an invention is generally accepted as an essential requirement for its patentability.
- 6.2. The exclusion from patentability of programs for computers as such may be construed to mean that such programs are considered to be mere abstract creations, lacking in technical character. The use of the expression “shall not be regarded as inventions” seems to confirm this interpretation.
- 6.3. This means that programs for computers must be considered as patentable inventions when they have a technical character.

B. A. 52(1) of EPC2000 added “in all fields of technology”

T208/84 (VICOM, 1986) file of 1979

B. 5. There can be little doubt that any processing operation on an electric signal can be described in mathematical terms. The characteristic of a filter, for example, can be expressed in terms of a mathematical formula. A basic difference between a mathematical method and a technical process can be seen, however, in the fact that a mathematical method or a mathematical algorithm is carried out on numbers (whatever these numbers may represent) and provides a result also in numerical form, the mathematical method or algorithm being only an abstract concept prescribing how to operate on the numbers. No direct technical result is produced by the method as such. In contrast thereto, if a mathematical method is used in a technical process, that process is carried out on a physical entity (which may be a material object but equally an image stored as an electric signal) by some technical means implementing the method and provides as its result a certain change in that entity. The technical means might include a computer comprising suitable hardware or an appropriately programmed general purpose computer.
T208/84 (VICOM, 1986) file of 1979

1. Even if the idea underlying an invention may be considered to reside in a mathematical method a claim directed to a technical process in which the method is used does not seek protection for the mathematical method as such.

2. A computer of known type set up to operate according to a new program cannot be considered as forming part of the state of the art as defined by Article 54(2) EPC.

3. A claim directed to a technical process which process is carried out under the control of a program (whether by means of hardware or software), cannot be regarded as relating to a computer program as such.

4. A claim which can be considered as being directed to a computer set up to operate in accordance with a specified program (whether by means of hardware or software) for controlling or carrying out a technical process cannot be regarded as relating to a computer program as such.

T1173/97 (IBM 1998) file of 1991

1. A computer program product is not excluded from patentability under Article 52(2) and (3) EPC if, when it is run on a computer, it produces a further technical effect which goes beyond the "normal" physical interactions between program (software) and computer (hardware).

2. Furthermore, the Board is of the opinion that with regard to the exclusions under Article 52(2) and (3) EPC, it does not make any difference whether a computer program is claimed by itself or as a record on a carrier.
**T0931/95 (pension benefits 2000) file of 1988**

1. **Having technical character is an implicit requirement of the EPC** to be met by an invention in order to be an invention within the meaning of Article 52(1) EPC.

2. Methods **only involving economic concepts** and practices of doing business are not inventions within the meaning of Article 52(1) EPC. A feature of a method which concerns the use of technical means for a purely non-technical purpose and/or for processing purely non-technical information does not necessarily confer a technical character to such a method (Superseded by HITACHI).

3. An apparatus constituting a physical entity or concrete product, suitable for performing or supporting an economic activity, is an invention within the meaning of Article 52(1) EPC.

4. There is no basis in the EPC for distinguishing between "new features" of an invention and features of that invention which are known from the prior art when examining whether the invention concerned may be considered to be an invention within the meaning of Article 52(1) EPC. **Thus there is no basis in the EPC for applying this so-called contribution approach for this purpose.**

**T0641/00 (2 IDs/COMVIK 2002) file of 1992**

1. An invention consisting of a mixture of technical and nontechnical features and having technical character as a whole is to be assessed with respect to the requirement of inventive step by taking account of all those features which contribute to said technical character whereas features making no such contribution cannot support the presence of inventive step.

2. Although the technical problem to be solved should not be formulated to contain pointers to the solution or partially anticipate it, merely because some feature appears in the claim does not automatically exclude it from appearing in the formulation of the problem. In particular where the claim refers to an aim to be achieved in a non-technical field, this aim may legitimately appear in the formulation of the problem as part of the framework of the technical problem that is to be solved, in particular **as a constraint that has to be met.**
Approach summary (G03/08)

Determining the technical contribution an invention achieves with respect to the prior art is therefore more appropriate for the purpose of examining novelty and inventive step than for deciding on possible exclusion under Article 52(2) and (3) (T1173/97 IBM). Distinction between the "contribution approach" and the approach adopted by the Board in T 1173/97.

Suppose a patent application claims a cup carrying a certain picture (e.g. a company logo). We assume that no effect beyond information, "brand awareness" or aesthetic pleasure is ascribed to the picture. According to the "contribution approach", cups are known, so that the "contribution to the art" is only in a field excluded from patentability by Article 52(2) EPC and the application may be refused under this provision.

According to the approach laid down by T 1173/97, for the purposes of Article 52(2) EPC the claimed subject-matter has to be considered without regard to the prior art. According to this view a claim to a cup is clearly not excluded from patentability by Article 52(2) EPC. Whether or not the claim also includes the feature that the cup has a certain picture on it is irrelevant.

Approach summary

Article 52 EPC

Distinguishing features considered for inventive step

- present a technical effect
- on a technical process
- solving a technical problem
- using technical means
- on a physical entity
- considering the claim overall technical character and considerations
- and constraints that have to be met

Analysis of what is left with respect to obviousness in view of the prior art
Patenting procedures related to data processing systems and methods

Case law of the Boards of Appeal of the EPO in the field of data processing

T1194/97 (Philips 2000) file of 1991

1. A record carrier characterised by having functional data recorded thereon is not a presentation of information as such and hence not excluded from patentability by Article 52(2)(d) and (3) EPC.

2. In this context functional data includes a data structure defined in terms (here coded picture line synchronisations, line numbers, and addresses) which inherently comprise the technical features of the system (here read device plus record carrier) in which the record carrier is operative.

3. Distinction between data which encodes cognitive content, e.g. a picture, in a standard manner and functional data defined in terms which inherently comprise the technical features of the system (reader plus record carrier) in which the record carrier is operative. The significance of the distinction between functional data and cognitive information content in relation to technical effect and character may be illustrated by the fact that in the present context complete loss of the cognitive content resulting in a humanly meaningless picture like "snow" on a television screen has no effect on the technical working of the system, while loss of functional data will impair the technical operation and in the limit bring the system to a complete halt.
More examples

⋆ T0172/03 (RICOH 2003)
  • State of the art comprises only technical documents (state of the art interpreted as “state of technology”)
⋆ T0258/03 (automatic auction method/HITACHI 2004)
  • I. A method involving technical means is an invention
  • II. Method steps consisting of modifications to a business scheme and aimed at circumventing a technical problem rather than solving it by technical means cannot contribute to the technical character
⋆ T0154/04 (DUNS 2006) request for EBoA refused, good overview of the status of the CII examination practice, used in G03/08.
⋆ T0528/07 (ACCENTURE 2010) TRIPS member states are free to adopt different standards as to inventive step.
⋆ T1244/07 (1-Click/AMAZON 2011) business method.

More examples

⋆ T1639/07 (E-mail printing apparatus/CANON) of 17.02.2012
  • An effect cannot be validly used in the formulation of the technical problem if the effect requires additional information not at the disposal of the skilled person even after taking into account the content of the application in question.
Fallacies

**Fallacies**

B T1741/08 (GUI layout/SAP) of 02.08.2012, *"broken chain"*

- GUI layouts - presentation of information. *"Lowering the cognitive burden of the user"* is not of itself a technical effect
- 2.1.6. But in terms of technical effects this is a broken chain: the layout has an effect on the mind of the user; a mental transition takes place more quickly than in the prior art; the user responds more quickly, so that the computer uses less resources. Only the third of these links can be called a technical effect, in that the user leaving the computer idle for a shorter time than in the prior art reduces resource consumption. The board does not accept that such a broken chain can be used as evidence of the required technical effect overall. It would seem that each of the links must be technical in nature for such a chain argument to be persuasive.

**Fallacies**

B T1670/07 (Shopping with mobile device/NOKIA) of 11.07.2013

- no motivation to modify prior art (no Inventive step - *"non-technical prejudice"*)
- 16. The system of D1 only identified one facility. The argument essentially invokes non-technical aspects as a reason for not modifying the prior art, whereas these features cannot in fact contribute to inventive step. The question is not whether the skilled person would consider providing these features because that has already been decided in formulating the technical problem. The question is simply how it would be done. As mentioned above, if this case, the "how" comprises conventional hardware carrying out the tasks in an obvious way.
- user action has technical character (no Inventive step - *"broken chain"*)
- 10. Moreover, in the Board’s view, producing an itinerary is not technical as it involves only standard human behavioural concepts such as going to the bank and then going to the supermarket. The appellant replied that the physical act of going to the locations conferred technical character on these thoughts. [...] a chain of effects from providing information to its use in a technical process is broken by the intervention of a user. [...] This applies to the present case because any possible technical effect depends on the user’s reaction to the itinerary.
- interaction with technical elements (no Inventive step - *"technical leakage"*)
- 9. The intrinsic technical nature of the implementation leaks back into the intrinsically non-technical nature of the problem. In this case, the "selection of vendors" is not a technical effect and the mere "interaction" with technical elements is not enough
Fallacies

T1755/10 (Software structure/TRILOGY) of 06.11.2014

- further technical effect implied in modified software ("software implementation")
- 6. As the overall goal of the claimed method (determining commissions) is not technical, the software concept cannot derive any (further) technical character from that goal. In fact, the Board judges that no "further" technical effect is present
- 11. The amendment according to auxiliary request 1 specifies the use of object-oriented programming in the form of two objects in the data model: the data model contains a "quota object" and a "promotion object".
- An object-oriented program can be created at a higher (more abstract) level and, thus, may be designed and changed more easily, without considering details of the computer platform. However, even a more specific program structure within the data model does not constitute a technical implementation by itself as the alleged technical effect is limited to the general observation that modified software results in a modified operation of the computer. This is just another way of saying that software interacts with hardware and, thus, is not sufficient to establish a "further" technical effect.
- Consequently, even the more specific programming structure does not enter into the examination for an inventive step.

A positive example

T0651/12 (MAP DISPLAYING DEVICE AND USING HEIGHT DATA EFFICIENTLY/Xanavi) of 14.04.2016

- displaying the three-dimensional bird's eye view map, in a car navigation system, provides a more realistic view of the road to the user and supports the user in better orienting himself, ultimately assisting the user in taking the right turn, and thus adds to the ergonomics of the map display. In the board's opinion, ergonomics, understood as the applied science of refining the design of products to optimize them for human use, in the context of the map display of the present case, is a technical field.
- Moreover, it is noted that in the context of a car navigation system, the immediate apprehension of the presented information results in the driver being less distracted from the road and traffic and, thus, also adds to safety. Accordingly, also in this respect, displaying the three-dimensional bird's eye view map provides a technical solution to a technical problem.
- the technical effect of reducing the need for data storage and enhancing the calculation speed, and are, thus, considered to provide a technical solution to a technical problem. Although the choice of the shape and size of the areas, and thereby the acceptable level of data reduction for the height data, would rather fall within the competence of a cartographer concerned with map design and thus be non-technical, the fundamental choice to use data reduction for the height data stems from the technician in charge of building the apparatus concerned with data storage and calculation capacity and speed.
Questions

Thank you