

Patent Eligibility of Computer-Implemented Inventions

at the European Patent Office

Has the term “invention” in Article 52 EPC lost its meaning?

Table of Contents

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Table of Contents	1
Summary.....	1
1 Introduction.....	4
2 Patentability Criteria at the EPO.....	6
2.1 Eligibility.....	6
2.2 Industrial Applicability	8
2.3 Novelty and Inventive Step.....	8
3 A Brief History and Analysis of Patent Eligibility at the EPO	9
4 Proposed Changes to the Current Practice of the EPO.....	13
5 Conclusion	14

Summary

Patents, in general, protect technical inventions. But what is an invention? Legislators, in general, have shied away from providing a positive definition. The TRIPs agreement, in Article 27, states that “patents shall be available for any inventions, whether products or processes, in all fields of technology”. The European Patent Convention (EPC) has reproduced this text of the TRIPs agreement in Article 52 EPC, stating that “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”.

Article 52(2) EPC, instead of giving a positive definition of inventions, gives examples of subject-matter that is not eligible for patent protection, including mathematical methods, aesthetic creations, methods for performing mental acts, and programs for computers. But what about products or processes that are chiefly implemented in software, i.e., so-called computer-implemented inventions (CII)? Most often, the actual contribution of such CII is situated within a computer program, which would therefore also be excluded from patent protection. The EPO has struggled with defining criteria to determine whether a computer-implemented invention is eligible for patent protection or not.

Through case law, the Boards of Appeal of the EPO have come up with an approach to evaluate the patentability of CII, which can be in the form of a computer-implemented method, a computer program comprising instructions that allow a computer to carry out the computer-implemented method, or the computer that carries out the computer-implemented method.

The so-called “contribution approach” [EPO TBA, T 0208/84 (Computer-related invention/VICOM) of 15.7.1986] assesses which contribution the distinguishing features of the claim make over the prior art. In the case of a computer-implemented method, the distinguishing features will typically be one or more steps that are part of an algorithm. If their contribution is in a field that is not excluded from patentability, then the computer-implemented method is eligible for patent protection (i.e., it is an invention). The contribution approach, however, mixes up the criteria for assessing patent eligibility of subject-matter, and the criteria for assessing inventive step, another patentability criterion. It therefore has fallen out of fashion.

The currently prevailing approach to assess patentability of CII is the Hitachi/COMVIK approach [EPO TBA, T 0258/03 (Auction method/HITACHI) of 21.4.2004 and EPO TBA, T 0641/00 (Two identities/COMVIK) of 26.9.2002], which is also called the two-hurdle approach. The first hurdle, patent eligibility under Article 52(2)-(3) EPC, is overcome if a claim comprises at least one inherent technical feature, such as for example a device. The second hurdle, novelty and inventive step under Articles 54-56 EPC, is assessed by classifying the features of the claim in features that contribute to the solution of a technical problem, and features that do not contribute to the solution of a technical problem. Only the features in the first group, i.e., the technical features, can contribute to the assessment of inventive step, not the features of the second group. Therefore, the actual assessment of whether the claim is solving a technical problem in a field of technology is deferred to the assessment of inventive step.

The first hurdle, however, may be said to lack any significance if any computer-implemented method, such as for example a computer-implemented method for improving product recommendation to consumers based on purchase history of that consumer, is called an invention, simply because a computer is used. Clearly, such a method is a method for doing business, which is not eligible for patent protection under Article 52(2) EPC. While it may be argued that the claim does not recite a method for doing business “as such” (using the wording of Article 52(3) EPC), its mere automation using a computer cannot form the basis for it to be called an invention, in part because the method is not “in a field of technology” but rather “in a field of business”. Computer programs, by their very nature, may serve technical or non-technical purposes, in technical or non-technical fields. From a conceptual point of view, it is desirable to filter out such subject-matter that clearly should never be given the label “invention”, instead of deferring such evaluation to the assessment of inventive step.

Recent case law of the Enlarged Board of Appeal [EPO EBA, G 0001/19 (Pedestrian simulation) of 10.3.2021] has stated: “[e]stablishing whether a feature contributes to the technical character of the invention constitutes an intermediate step between assessing (i) the invention's eligibility under Article 52 EPC, and (ii) whether the invention is based on an inventive step vis-à-vis the closest prior art”. Thus, patent eligibility (the “first hurdle”) is established first, then the features are filtered based on whether they contribute to the solution of a technical problem, and then novelty and inventive step are assessed. It is proposed in this paper to incorporate that filtering step into the assessment of patent

eligibility. This restores the balance between the assessment of patent eligibility and inventive step, and restores meaning to the term “invention” in Article 52(2) EPC. It thereby increases legal certainty for applicants, as the proposed approach more clearly defines which (computer-implemented) inventions are eligible for patent protection, and which are not. A last benefit of the approach is that it aligns with the practice of the search division to not search any features that do not contribute to the technical character of the invention.

1 Introduction

The stance of the European Patent Office (EPO) on the patenting of computer programs, or “Computer-Implemented Inventions” (CII), is constantly evolving. This is unsurprising: software has transformed society dramatically in the last two decades and is today still a fast-developing field of technology. Patent law lags behind these technological developments, mainly because it was drafted with typical mechanical systems in mind. As a result, the current set of rules, guidelines, and case-law regarding CII is contentious, which leads to decreased legal certainty for applicants. The recent decision G1/19 of the Enlarged Board of Appeal (EBA)¹ has confirmed the EPO’s current practice for assessing CII in general, and computer simulations in particular.

Purely digital systems, without a physical component, are gaining importance in everyday life as well. Thus, patent protection for innovations producing a technical effect within these systems should be afforded. Yet, it is difficult to draw the fine line between pure mathematical methods, business methods, and mental acts on the one hand and technical implementations that offer technical solutions to technical problems on the other. A clear test or at least a set of guidelines would contribute to the ongoing efforts to provide a fair patenting system for CII.

In an attempt to find an appropriate test to identify whether a computer program is eligible for patent protection, EPO case law has evolved². Before 1998, in the “contribution approach”, substantive weight was given to evaluating of patent eligibility under Article 52(2)-(3) of the European Patent Convention (EPC) by determining whether a technical problem was solved by the features that were novel over the prior art. Subsequently, the “further technical effect approach” looked at what the computer program did without referring to the prior art. This approach included determining whether the computer program produced a technical effect. This approach was further developed until finally arriving at the current “COMVIK”-approach³ for assessing patentability: apparatus claims are always considered an invention, while method claims are considered an invention if they involve technical means. The “weight” of the analysis has hence shifted from assessing eligibility under Article 52(2)-(3) EPC to assessing inventive step under Article 56 EPC: there, only features that contribute to the solution of a technical problem are taken into account.

Several problems can be identified with the approach towards patenting of software at the EPO: (1) typically the technical problem in the “problem-solution” approach is formulated after the set of distinguishing features is determined which thus precludes an a-priori assessment of “technicality” of features; (2) the focus on technical means (implicitly requiring methods to be “computer-implemented”) precludes the patenting of methods requiring technical considerations; an objection under Article 52(2) EPC is easily raised since such

¹ EPO EBA, G 0001/19 (Pedestrian simulation) of 10.3.2021

² Y. Skoulikaris, “Patenting Software-related Inventions according to the European Patent Convention”, unpublished

³ EPO, Guidelines for Examination in the European Patent Office, March 2022, G-VII-5.4; EPO TBA, T 0641/00 (Two identities/COMVIK) of 26.9.2002; EPO TBA, T 0258/03 (Auction method/HITACHI) of 21.4.2004

methods can be considered methods for performing mental acts; and (3) many ways of evaluating whether a feature is (not) technical are used, including determining whether a feature is “inherently” technical, whether it “contributes to the solution of a technical problem”, whether it has “technical character”, or whether it serves a “technical purpose”. For applicants, the use of these ill-defined terms can lead to legal uncertainty as unexpected objections can be raised that are difficult to overcome in prosecution. Furthermore, while the COMVIK approach is well-established for apparatus claims and computer-implemented method claims, the same cannot be said of computer program claims. A computer program claim that is allowable under Article 52(2) and 52(3) EPC still requires a “further technical effect”⁴. Again, such difference in terminology and ways of evaluating different claim categories for essentially the same type of invention may lead to confusion among applicants.

In academia, these problems have already been identified. In a recent paper, Dhenne⁵ has presented a historical overview of “technical character” in European patent law. In his paper, he describes how the requirement for technicality appeared in Germany in the 19th century, but only came to the forefront again in the 1980s with the development of computer-implemented inventions and biotechnological inventions. He is critical of interpreting Art 52(1) EPC as requiring there to be an invention: it is tautological that an invention must be an invention to be patentable. It appears that the “invention” requirement solely exists to provide a basis for the requirement of technical character. A natural question is then why the legislator has chosen not to include the requirement of technical character in the articles of the EPC, but has chosen to instead provide a list of exclusions. These exclusions serve as examples of non-inventions (i.e., non-technical inventions), but Dhenne argues that it would be beneficial to remove this list and instead include a requirement for technical character.

In another recent paper⁶, Baldus has argued for a further classification of features besides them being technical or non-technical: features and non-features. He states that “a non-feature is a piece of information from a claim that does not affect the design of the subject matter”. In the inventive step analysis, the features of the claim are categorized as contributing to the solution of a technical problem or not. It appears difficult to provide for a clear application of the concept. It remains to be seen whether the concept of “non-features” provides any guidance in the assessment of eligibility under Article 52, and/or for inventive step under Article 56. A question that was not answered by Baldus is whether the concept of “non-feature” relates to any of the terms used to refer to the technicality of an invention in the case law of the EPO, for example “technical considerations”.

Last, in his PhD thesis⁷, Bakels argues that there is no sufficient legal basis to require “technical character” in an invention. He argues that there is no definition in international agreements

⁴ EPO, Guidelines for Examination in the European Patent Office, March 2022, G-II-3.6

⁵ M. Dhenne, Technical Character in European Patent Law, SSRN Electronic Journal, 2020, pp. 47, 10.2139/ssrn.3639200

⁶ O. Baldus, Decision G 1/19 and the Messy Misconception of the COMVIK Approach. GRUR International, 70(10), 2021, 957–962

⁷ R. Bakels, Techniek, de vierde dimensie van het octrooirecht, PhD Dissertation, Maastricht University, 2007

of the term “invention”. For example, the TRIPs agreement requires that “patents shall be available for any inventions, whether products or processes, in all fields of technology”. It thus does not define what an invention is, but requires that it belong to a field of technology; thus, business methods may be excluded in this definition. The EPO has decided to interpret the term “invention” by requiring that inventions be “technical”, which is often contrasted with non-inventions being “abstract”. Bakels proposes a new interpretation of the term “invention” which distinguishes between information that can only be consumed and information that represents knowledge that teaches another person how to do something. The difference is between knowledge that is merely suitable to be applied and knowledge that is ready to be applied. In that sense, he distinguishes between mere scientific knowledge which is abstract and should not be patentable, and applied knowledge which is concrete and should be patentable. Thus, the test should be whether a claim represents knowledge that is not only suitable, but also ready for routine application by the skilled person. Such a definition of the term “invention” is a different way of interpreting the wording of Article 52(3) EPC by thus requiring a form of *concreteness* of knowledge instead of *technicality* of an invention.

This paper analyses the current approach to assess the patentability of (computer-implemented) inventions at the EPO in a historical context, and takes into account the most recent case law (i.e., decision G1/19 of the Enlarged Board of Appeal). Based on this analysis, a change of the current approach is proposed that provides for a consistent evaluation of patentability and restores balance to the current approach employed by the EPO.

2 Patentability Criteria at the EPO

Article 52 EPC defines the criteria that need to be met by the subject-matter for which protection is sought in order for a patent to be granted for that subject-matter. It states, in section 1 (emphasis added):

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.

Thus, there are four patentability requirements: there needs to be an invention in a field of technology (this requirement is also called patent eligibility⁸), the invention needs to be new, the invention needs to involve an inventive step, and the invention must be susceptible to industrial application.

2.1 Eligibility

The notion of “invention” is further clarified in section 2 of Article 52 EPC, where a negative definition is given of what types of subject-matter are not considered an invention. In other words, these categories define which subject-matter is not eligible for patent protection. Four categories are listed:

⁸ EPO EBA, G 0001/19 (Pedestrian simulation) of 10.3.2021, para 78

- (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.*

This list of categories is not exhaustive, but it provides guidance to interpret the eligibility criterion “invention in [a] field of technology”. Through the exclusion of the categories that are not eligible for patent protection, the legislator has ensured that guidance to applicants and examiners is provided to increase legal certainty and the predictability of the examination process.

Section 3 of Article 52 EPC states that the subject-matter listed in Section 2 is not an invention only if it relates to that subject-matter or activities as such. Clearly, the legislator considered that the subject-matter or activities listed in section 2 could be patentable if the invention relates to such subject-matter or activities not as such. As such, logically, there must be “mathematical methods”, “rules and methods for performing mental acts” and “programs for computers” that are not “as such” mathematical methods, rules and methods for performing mental acts and programs for computers.

Typically, protection will be sought for an invention within the “product” (“subject-matter”) and/or the “process” (“activity”) categories. For computer-implemented inventions, formulations in the following forms are accepted⁹:

- 1. A computer-implemented method comprising steps A, B, ...*
- 2. A data processing device comprising means for carrying out the method of claim 1.*
- 3. A computer program comprising instructions which, when the program is executed by a computer, cause the computer to carry out the method of claim 1.*
- 4. A computer-readable medium comprising instructions which, when executed by a computer, cause the computer to carry out the method of claim 1.*

Claim 1 is a process claim. Claims 2-4 are product claims. At the heart of any computer-implemented invention is a process having a number of (sequential) method steps that are executed by a computer. Claim 1 protects those processes executed by a computer that comprise the steps A, B, etc. Claim 2 protects a computer loaded with the instructions to carry out the method. Claims 3 and 4 are products that carry the *potential* to execute the method. In other words, the instructions comprised in those products (a computer program or a computer-readable medium) have to be loaded into a computer in order for the computer to execute the instructions.

From the Guidelines, it is thus clear that computer program claims are allowable, which is in apparent contradiction with the exclusion of computer programs in Article 52(2) EPC. The next

⁹ EPO, Guidelines for Examination in the European Patent Office, March 2022, F-IV-3.9.1

section investigates how it is established that a claim to a computer program is not a claim to a computer program “as such”, but to a computer program “not as such”.

2.2 Industrial Applicability

Article 57 EPC states that “[a]n invention shall be considered as susceptible of industrial application if it can be made or used in any kind of industry”. Thus, it states that the invention must be workable (by a skilled person) in some industry. Typically, the bar to industrial applicability is set rather low in the EPC. It is recognized by Dhenne¹⁰ that the requirement of industrial applicability should not be confused with the requirement of an industrial *result* of the invention (i.e., does the invention have an *effect* in the industry when applied). Rather, as we will see, the notion of *invention* is seen as the basis to require a technical character of any product or method to be patentable as an “invention”.

2.3 Novelty and Inventive Step

For the novelty and inventive step requirements (Articles 54 and 56 EPC), the features of the claim are investigated. In essence, for Article 54 EPC, a claim is novel if one of its features is not disclosed in the prior art. Two approaches dominate at the EPO: photographic novelty and functional novelty. For photographic novelty¹¹, it is simply checked whether all features of the claim are disclosed in, or unambiguously derivable from, a single prior art document. Any feature that is not disclosed in such a document establishes novelty for the claim. Therefore a yellow laptop, for example, is novel if prior art documents disclose laptops that have colours that are different from yellow. Photographic novelty is in line with the approach of assessing well-known equivalents under Article 56, not Article 54¹². Functional novelty, by contrast, only considers technical distinguishing features and ignores non-technical distinguishing features in the assessment of novelty¹³. Functional novelty is in line with Rule 43 EPC, which states that claims “shall define the matter for which protection is sought in terms of the technical features of the invention”. For functional novelty, in other words, features are filtered such that only features making a technical contribution can be used to establish the novelty of a claim.

A claim is inventive, for Article 56 EPC, if it is not obvious for the skilled person to arrive at the features distinguishing the claim from the prior art. To determine whether or not the feature is obvious to the skilled person, the EPO applies the “problem-solution approach”¹⁴. It consists of the following steps:

¹⁰ M. Dhenne, Technical Character in European Patent Law, SSRN Electronic Journal, 2020, pp. 47, 10.2139/ssrn.3639200

¹¹ See, for example, EPO TBA, T 2201/10 () of 21.9.2015

¹² EPO, Guidelines for Examination in the European Patent Office, March 2022, G-VI-2

¹³ See, for example, EPO TBA, T 0154/04 (Estimating sales activity / DUNS LICENSING ASSOCIATES) of 15.11.2006, wherein it was stated that novelty and inventive step can be based only on technical features. Similarly, in EPO TBA, T 2050/07 (DNA Mixture Analysis/PERLIN) of 19.2.2013, it was stated that features that do not contribute to the technical character of an invention and do not interact with the technical subject-matter of the claim for solving a technical problem should be ignored when assessing novelty. In EPO EBA, G2/88 it was similarly stated that a claimed invention lacked novelty unless it included at least one essential technical feature distinguishing it from the prior art.

¹⁴ EPO, Guidelines for Examination in the European Patent Office, March 2022, G-VII-5

1. *determining the "closest prior art",*
2. *establishing the "objective technical problem" to be solved, and*
3. *considering whether or not the claimed invention, starting from the closest prior art and the objective technical problem, would have been obvious to the skilled person.*

In step 3, the question to be answered is *"whether there is any teaching in the prior art as a whole that would (not simply could, but would) have prompted the skilled person, faced with the objective technical problem, to modify or adapt the closest prior art while taking account of that teaching, thereby arriving at something falling within the terms of the claims, and thus achieving what the invention achieves"*¹⁵.

This approach is used to evaluate any invention, so also software inventions (i.e., computer-implemented inventions). However, such computer-implemented inventions have a major difference with more traditional inventions, such as mechanical and chemical inventions. Software in and of itself consist of a series of method steps, being performed by the computer, which represent mathematical operations that do not necessarily have a bearing on "the real world". It is perfectly possible to write a claim to *a computer-implemented method for increasing the loyalty of customers, comprising the steps of:*

- *for each customer, determining the items that were bought by the customer in the last year;*
- *based on the determined items, generating a personalized discount offer;*
- *sending, to the customer by e-mail, the personalized discount offer.*

Such a computer-implemented method would be (at least photographically) novel under the assumption that no such algorithm was previously described. However, is it an invention? The computer-implemented invention described above is simply an implementation of a business method. One line of argumentation would be that, since the algorithm merely represents a business method, this must fall within the category "computer program as such" and thus not be eligible for patent protection under Articles 52(2)-(3) EPC. Another line of argumentation would be that the claim is not directed towards a computer program, but rather a method of operating a computer, which is a technical feature, and therefore is not a "computer program as such". If that line of argumentation is followed, then inventive step can be assessed.

3 A Brief History and Analysis of Patent Eligibility at the EPO

The EPO has developed extensive case law to distinguish between computer programs "as such", and computer programs "not as such"¹⁶. A basic requirement of any software to be patentable is that it has *technical character*. The justification for only allowing "technical" inventions (while in the US, for example, all "useful" inventions are allowed) has its basis in the EPC. As established before, Rule 43 EPC states that the claims "shall define the matter for which protection is sought in terms of the technical features of the invention". Rule 42 EPC

¹⁵ *Ibid*

¹⁶ Y. Skoulidakis, "Patenting Software-related Inventions according to the European Patent Convention", unpublished

states that the description shall “specify the technical field to which the invention relates” and “disclose the invention, as claimed, in such terms that the technical problem [...] and its solution can be understood”. The question then remains as to what is or is not “technical”. Currently, the EPO has yet to give a positive definition of “technicality”. Rather, through case law, guidance is provided by assessing the technicality of individual cases.

In the case law, first the “contribution approach” was developed¹⁷. The practice was to examine the underlying process that was implemented by a computer program to decide whether the computer program was a computer program “as such”, or not. This approach required that the problem-solution approach be performed so as to identify whether any distinguishing features were present and whether they contributed to the solution of a technical problem in a field that was not excluded from patentability. However, using this approach meant that the decision whether subject-matter was patentable under Article 52 EPC required an analysis of the prior art, which should be reserved for the analysis of novelty and inventive step (Articles 54 and 56 EPC).

This approach was subsequently abandoned by the Board of Appeal¹⁸, which stated in its reasoning that “[t]he exclusion from patentability of programs for computers as such (Article 52(2) and (3) EPC) may be construed to mean that such programs are considered to be mere abstract creations, lacking in technical character”. From that point on, claims to computer programs, as well as computer-readable media storing instructions, were also allowed. But, such claims were only allowed under certain circumstances: “a computer program claimed by itself is not excluded from patentability if the program, when running on a computer or loaded into a computer, brings about, or is capable of bringing about, a technical effect which goes beyond the “normal” physical interactions between the program (software) and the computer (hardware) on which it is run”. This is also called the “further technical effect” approach, which is confirmed by the Guidelines for Examination¹⁹.

Decision T1173/97 may have allowed the patentability of computer programs, but it still requires that “a further technical effect” be found for such claims. This means, again, that for computer programs, a problem-solution approach needs to be applied, which still mixes Articles 52 and Article 56. Decision T424/03²⁰ states that “a method implemented in a computer system represents a sequence of steps actually performed and achieving an effect, and not a sequence of computer-executable instructions (i.e. a computer program) which just have the potential of achieving such an effect when loaded into, and run on, a computer”. And, it states that “the computer program recorded on the medium is therefore not considered to be a computer program as such, and thus also contributes to the technical character of the claimed subject-matter”.

¹⁷ EPO TBA, T 0208/84 (Computer-related invention/VICOM) of 15.7.1986

¹⁸ EPO TBA, T 1173/97 (Computer program product/IBM) of 1.7.1998

¹⁹ EPO, Guidelines for Examination in the European Patent Office, March 2022, G-II-3.6

²⁰ EPO TBA, T 0424/03 (Clipboard formats I/MICROSOFT) of 23.2.2006

The claim category of computer programs must be distinguished from that of computer-implemented methods and a computer-readable medium²¹. Presently, due to the decisions T258/03²² and T641/00²³, “mixed-type inventions” comprising technical and non-technical features are assessed in a two-step process that clearly distinguishes the evaluation of whether there is an “invention” within the meaning of Article 52(2) and 52(3) EPC and the evaluation whether the invention provides an inventive step within the meaning of Article 56 EPC. In HITACHI, the invention concerned a method and a computer program defined by the same steps of the method. HITACHI, states that:

A method involving technical means is an invention within the meaning of Article 52(1) EPC.

Thus, according to the HITACHI decision, if any technical means are necessary for at least one of the steps of the method, there is an “invention”. With regard to computer programs, HITACHI states the following:

The computer program of claim 4 is defined by the same steps as the method of claim 1 and is therefore also not patentable because it does not involve an inventive step (Article 56 EPC). Consequently, it is not necessary to examine whether it falls under the exclusion of Article 52(2)(c) EPC in combination with Article 52(3) EPC.

Thus, HITACHI is a landmark decision for the patentability of computer-implemented methods and is further detailed in COMVIK:

An invention consisting of a mixture of technical and non-technical 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.

As a consequence, HITACHI provides a way to determine whether a method is an invention within the meaning of Article 52(1) EPC, the “any technical means” approach. COMVIK provides a way to determine whether a method provides an inventive step within the meaning of Article 56 EPC, by separating the features of a claim into two categories: those features that contribute to the technical character of the invention, and those that do not contribute to the technical character of the invention. Only those in the first category can be taken into account when assessing inventive step. Thus, the combined HITACHI/COMVIK approach 1) separates the assessment of “invention” and “inventive step” and 2) assesses novelty and inventive step based on “technical features of the invention, i.e. the features which contribute to the technical character of the invention”.

Apparently, the technical character referred to in the assessment of Article 52 EPC and the one referred to in Article 56 EPC can differ. For example, the only technical feature in the claim

²¹ EPO TBA, T 0424/03, Clipboard formats I/MICROSOFT of 23.2.2006

²² EPO TBA, T 0258/03 (Auction method/HITACHI) of 21.4.2004

²³ EPO TBA, T 0641/00 (Two identities/COMVIK) of 26.9.2002

is a computer for executing the method. Thus, the technical character in the assessment of eligibility is conferred on the claim by this computer. However, in the assessment of inventive step, non-technical features (the method steps) can be “promoted” to technical features by virtue of them contributing to “the technical character” of the invention. This means that the technical character is no longer confined to the computer executing the method, but may go beyond by providing a technical effect. This is clear from the wording in G1/19, where it is stated in paragraph 30 that “the claim must be construed to determine the technical features of the invention, i.e. the features which contribute to the technical character of the invention”. Further, it is stated in paragraph 33 of that same decision that “[a]n invention may have (i) technical features which contribute, (ii) technical features which do not contribute, (iii) non-technical features which contribute and (iv) non-technical features which do not contribute to the technical solution of a technical problem and thereby potentially to the presence or not of an inventive step”. The features in categories (i) and (iii) are “technical” features that contribute to the technical character of the invention and need to be taken into account when assessing the patentability criteria.

	“per se” technical	“per se” non-technical
contributes	establishes eligibility (Article 52(2)-(3) EPC) taken into account for inventive step (Article 56 EPC)	does not establish eligibility (Article 52(2)-(3) EPC) taken into account for inventive step (Article 56 EPC)
does not contribute	establishes eligibility (Article 52(2)-(3) EPC) not taken into account for inventive step (Article 56 EPC)	does not establish eligibility (Article 52(2)-(3) EPC) not taken into account for inventive step (Article 56 EPC)

This approach is summarized in the table above. Thus, features are assessed as “technical or non-technical per se (or as such)”. If there is one technical feature per se, then the claim is eligible for patent protection. All other features are ignored. In the context of assessing novelty and inventive step, then, all features are re-assessed: in this context, technical features are those features that contribute to the solution of a technical problem. Depending on whether photographic or functional novelty is used, the formulation of a technical problem can be deferred to the assessment of inventive step. Substantial weight for assessing the patentability of a claim is thus shifted away from the assessment of eligibility to the assessment of inventive step.

According to G1/19, non-technical features can still *contribute* to the solution of a technical problem. G1/19 states that “[e]stablishing whether a feature contributes to the technical character of the invention constitutes an intermediate step between assessing (i) the invention’s eligibility under Article 52 EPC, and (ii) whether the invention is based on an

inventive step vis-à-vis the closest prior art”²⁴. In that intermediate step, in other words, a *potential* of the features to solve a technical problem in the prior art is assessed.

Thus, in the context of assessing of inventive step, it no longer matters whether features are technical or non-technical per-se. It only matters which features contribute to the solution of a technical problem. For example, in T0424/03²⁵, the at the first glance non-technical features of “clipboard formats” contributed to the solving of a technical problem within the computer. Therefore, the clipboard formats contributed to technical character of the invention. In contrast, when assessing eligibility, the computer executing the method was the only feature contributing to the technical character of the invention.

4 Proposed Changes to the Current Practice of the EPO

An approach consistent with functional novelty, the searching strategy used by the search division, the assessment of computer program claims, and the “intermediate step” described in G1/19 is proposed for the examination of *all* types of claims. Such an approach restores some balance to the examination of eligibility and inventive step, and avoids the problem that a non-patentable method can be made eligible for patent protection simply by including a technical feature, which may be undesirable. In the proposed approach, rather than passing the first hurdle in the HITACHI/COMVIK approach by simply including a technical feature, a further assessment of the features of the claim is performed for eligibility, in line with the “intermediate step” described in G1/19. In this intermediate step, only those features are retained that have the *potential* to produce a technical effect in the assessment of inventive step.

Such an approach is reminiscent of the contribution approach, in the sense that only those features are retained that can contribute to the solution of a technical problem in a technical domain that is not excluded from patentability. However, the analysis is performed without reference to the prior art by referring to the *potential* of a technical effect, rather than the technical effect itself. Such an approach is uniformly applicable. In the example of the method for increasing customer loyalty presented in Section 2, only those method steps that have the potential to produce a technical effect are retained. In none of the claims (computer-implemented method, “normal” method, and computer program) do these method steps have the potential to produce a technical effect. Rather, they are filtered out in the assessment of eligibility, leaving no features for the assessment of novelty and inventive step.

This approach is in line with the approach of the search division when searching prior art, because they do not search non-technical features. A balance is restored between the assessment of eligibility and inventive step, because it seems desirable to filter more inventions in the assessment of eligibility rather than in the assessment of inventive step. Simply adding a technical feature would no longer suffice: it needs to be shown that there are features in the claim that have the potential to produce a technical effect. Last, such an

²⁴ EPO TBA, T 0424/03 (Clipboard formats I/MICROSOFT) of 23.2.2006, para 39

²⁵ EPO TBA, T 0424/03, Clipboard formats I/MICROSOFT of 23.2.2006

approach is uniformly applicable to any type of claim, and it is uniformly applicable to any type of feature. The filtering step will also filter out those technical features that have no potential to produce a technical effect, such as for example the colour of a laptop (except if a particular technical effect related to that colour has been described in the patent application).

Since technical features per se potentially do not produce a technical effect, the test for patent eligibility becomes stricter. By adapting the Guidelines for Examination to reflect this new approach, applicants would be faced with a uniformly applicable test. An advantage is that there is no longer a need to have different ways of evaluating patent eligibility for different types of claim categories. Further, the consistency of the Guidelines for Examination is increased, as the approach of the Search Division (which currently employs functional novelty) and the Examination Division (which currently employs the HITACHI/COMVIK approach) is streamlined. A downside of the proposed approach is that it embodies a significant change to the examination practice at the EPO, which has grown organically. Such an upset might not be desirable from a practical point of view.

The proposed approach of assessing patent eligibility by evaluating the potential of claim features to produce a technical effect has significant similarities with the proposed approach of Baldus²⁶. Baldus proposes a filtering of the claim features by assessing whether they affect the design of the subject matter. Features not affecting the design of the subject matter are called “non-features”. He states that “[n]on-features cannot as a matter of course contribute to solving a technical problem as a pure matter of logic, since they do not substantially alter the claimed subject-matter. They cannot solve a technical problem within the claimed invention”. So, these non-features seem to not have the potential to produce a technical effect, and thus the filtering of the features proposed by Baldus is equivalent to the filtering of the features proposed in this chapter. However, Baldus does not mention whether the filtering of non-features can lead to a patent eligibility objection, or whether the filtering step is equivalent to the “intermediate step” as mentioned in decision G1/19. Further, the language used by Baldus (“they do not substantially alter the claimed subject-matter”) is not consistent with the language used in the EPC and the Board of Appeal. By tying such a concept of “non-feature” to the potential of producing a technical effect in the assessment of inventive step, concrete tools are provided to the examiners of the EPO as well as to applicants.

5 Conclusion

This paper set out to evaluate whether there is a difference in evaluating claims to a “computer-implemented method” and a “computer program” and is such a difference desirable. Further, this paper investigates whether the current definition of “computer program as such” within the meaning of Article 52(2) and 52(3) is consistent throughout the case law and is an alternative definition desirable. This paper demonstrates that the current definition of “computer program as such” may cause confusion as to the availability of patent

²⁶ O. Baldus, Decision G 1/19 and the Messy Misconception of the COMVIK Approach. GRUR International, 70(10), 2021, 957–962

protection for software and how it is evaluated with regard to the different patentability criteria. A different interpretation has been proposed, one which distinguishes between abstract and non-abstract computer programs.