Assessment of Inventive Step under the EPC

BARDEHLE PAGENBERG

Impact.
Passion.
IP.

www.bardehle.com

The Assessment of inventive step under the EPC

Published in June 2021

IP Brochure

In addition to novelty, an invention must involve an inventive step to be patentable under the European Patent Convention (EPC). For the grant of a European patent the claimed subject matter should not only be hitherto unknown but also beyond the job routine of a skilled person. Not any straightforward modification of the prior art should be rewarded by an exclusive right. Inventive step regularly turns out to be the most difficult hurdle that must be overcome for a European patent to be granted. The following executive summary provides an insight in the approach taken by the European Patent Office (EPO) when assessing this crucial requirement.

Table of contents

Title	Page
1. Inventive step as regulated by the EPC	4
2. Person skilled in the art	4
3. Methodology for assessing inventive step: The problem-and-solution approach	4
4. Secondary indicia in the assessment of inventive step	9
5. Summary	10

1. Inventive step as regulated by the EPC

The EPC regulates that an invention shall be considered as involving an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art.Hence, any assessment of inventive step has to be performed with respect to the state of the art which must be established beforehand. The state of the art is defined by the EPC to comprise everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing (or priority) of the European patent application. For the purpose of assessing inventive step, the state of the art is limited to prepublished art, thus excluding earlier European applications published on or after the filing date of the application under consideration. Earlier applications are only to be taken into account for examining novelty.The EPC, however, does not provide any legal definition of the terms “obvious” and “person skilled in the art”, nor any methodology how obviousness should be assessed. This difficult task has been left to the practice of the European Patent Office and the jurisprudence of the Boards of Appeal.

2. Person skilled in the art

According to the European Patent Convention, any assessment of obviousness has to be performed from the perspective of the notional person skilled in the art.Identifying the correct person skilled in the art is therefore of primary importance for a proper examination of inventive step by the approach explained below. In the practice of the EPO, the skilled person is not the man in the street, but an ordinary practitioner working at the filing date in the technical field of the invention to be assessed. He is, however, not endowed with inventive capabilities, but – at most – mildly innovative. This means that he has the common general knowledge and normal competences acquired by education and experience to undertake routine work and experimentation, consult the state of the art or call in another specialist if he is induced to do so, and follow any hint or suggestion he is given.

3. Methodology for assessing inventive step: The problem-and-solution approach

The Boards of Appeal have developed a methodology for examining inventive step, called the “problem-and-solution approach”. It allows for a structured assessment of an invention by following a sequence of welldefined steps and obtaining

corresponding intermediate results. Although these results are not entirely free from subjective elements, the decisive points are made transparent by this method and may hence be scrutinised in detail.The problem-and-solution approach aims at replacing as much as possible any inadmissible retrospective view having the knowledge of the invention by an attempt to take one step back and foresee the invention from the prior art.Although the problem-and-solution approach is of fundamental importance in European patent grant proceedings and regularly applied by the EPO, it does not automatically lead to correct or convincing results and should therefore be used with caution. Any artificial or laboured mental constructions should be avoided.The problem-and-solution approach proposes to perform the following steps:(1) identify the item of prior art coming “closest” to the invention;(2) determine the objective technical problem solved in respect of the closest prior art;(3) decide whether or not the claimed solution of this problem is obvious from the remaining prior art when starting from the closest prior art and taking account of the objective problem.

3.1 Step (1): Identification of closest prior art When using the problem-and-solution approach with a view to foresee the claimed invention from the prior art, a well-defined starting point for all further considerations must be selected among the prior art (as for example identified by a search of the EPO), **i.e.** most frequently a set of documents published before the filing or priority date of the application under consideration.The term “closest” prior art designates an item of prior art, *i.e.* a known concrete embodiment, that when used as a starting point would promise the highest probability for challenging the presence of inventive step. The closest prior art is determined by individually comparing the invention as claimed with each item of prior art, however, without combining separate documents or embodiments within a document for this purpose. Such combinations, which involve further considerations of a skilled person, shall be left to step (3). The closest prior art thus constitutes the most promising “springboard” towards the invention a skilled person would have at his disposal under realistic circumstances. Indications for identifying the closest prior art may be taken from the designation of the subject-matter of the invention, the formulation of the original problem, the intended use and the effects to be obtained. The closest prior art is often, but not necessarily, a document which discloses the maximum number of features in common with the claimed invention.Selecting an item of prior art as coming “closest” to the invention implies, of course, the assumption

that the remaining prior art is less relevant as a starting point for questioning inventive step. If this assumption turns out to be not justified, or even in case of doubt, the problem-and-solution approach has to be repeated for any item of prior art also qualifying as a possible starting point.Although in principle any item of prior art may be used as a starting point for the problem-and-solution approach, the original perspective of the invention as presented in the application should preferably be retained. This original perspective is reflected by the inclusion of features considered to be known in the pre-characterising portion of an independent claim and one or more new features added by the invention in the characterising portion. By maintaining the applicant‘s original perspective, entirely fictitious ways of proceeding are normally avoided, such as turning the claimed invention “upside down” by selecting a “closest” prior art covering the characterising features so that any invention would be shifted to the precharacterising portion. Hence, in general the purpose of the claimed invention should prevail over structural similarities.

3.2 Step (2): Determination of objective technical problem

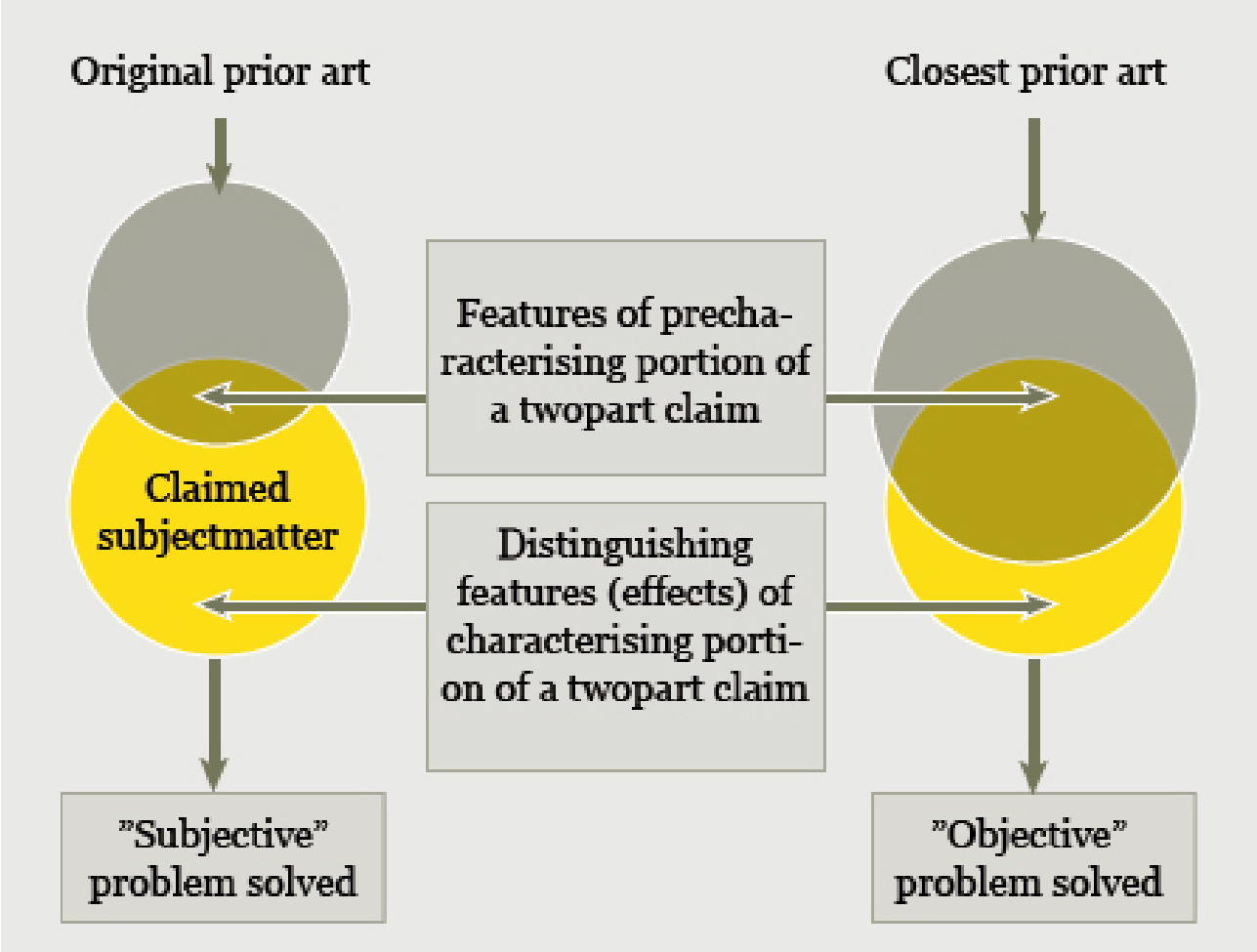
When the closest prior art has been determined, the technical features distinguishing the invention from the closest prior art and the technical effects achieved by these features must be identified (such features must exist, otherwise there would be lack of novelty). If the associated technical effects (what do the features achieve?) are not immediately apparent, as may for example be the case for inventions in chemistry, then it must be verified that any effects alleged by the applicant are actually achieved over the whole breadth of the claim.

The distinguishing features constitutes the contribution that the invention makes to the closest prior art, i.e. the surplus over the closest prior art underlying any further inventive step considerations. If the closest prior art is more relevant than the prior art originally used for the two-part delimitation, it will cover further features of the characterising portion, thereby reducing the set of distinguishing features and associated effects.

The objective technical problem consists of the task of providing the technical effects related to the technical features distinguishing the invention as claimed from the closest prior art. These features may thus naturally be considered to be the claimed “solution” to the objective technical problem (to be distinguished from the “invention”

comprising all the features of a claim). The problem is called “objective”, because it is formulated with respect to the most pertinent item of prior art available after search which is often “closer” to the invention than the prior art originally taken into account when the claimed subject-matter was drafted by the applicant. In such a case, the set of distinguishing features (and associated effects) will be reduced, *i.e.* the “objective” and (original) “subjective” technical problems will also differ. This means that for the purpose of assessing inventive step, the technical problem will need to be reformulated.

The situation may be illustrated by the following illustration, the circles representing the sets of features defining the invention as claimed and the different items of prior art, respectively:



If the technical effects associated with the distinguishing features are already achieved in the closest prior art, then the objective problem consists in the provision of an alternative solution.The definition of the objective problem requires adequate care to avoid any too broad or too narrow formulations. As the objective problem determines the angle of vision a skilled person adopts when considering the remaining prior art in step (3), an overly broad formulation obliges him to take account of a lot of irrelevant material or, at worst, leave him at a complete loss as to what to do. The objective technical problem should therefore be limited to the technical effects actually achieved. However, the formulation is too narrow if it already contains elements of the claimed solution, *i.e.* how or whereby the effects sought after are achieved. This would in fact transfer the claimed solution into the problem to be solved. Although "problem inventions" may not be categorically excluded, they normally do not occur if the objective problem is correctly formulated, in particular since the respective problems are generally derivable from the state of the art, such as any drawbacks of prior art solutions which are in most cases apparent to a skilled person when making use of the prior art as intended.The above considerations only apply to technical aspects of the claimed invention. Aims to be achieved in a non-technical field (as *e.g.* in business activities or financial services), even when included in the subject-matter as claimed, normally belong to the motivation phase preceding any invention (that must have technical character) and 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 (see in this respect also the BARDEHLE PAGENBERG IP brochure "The Patentability of Software under the EPC").

3.3 Step (3): Decision on obviousness Although knowledge of the invention is mandatory in the preceding steps of searching the state of the art, identifying the closest prior art as a promising starting point and determining the distinguishing features of the claimed subject-matter and their associated effects leading to the objective technical problem solved, the scene is now prepared for stepping back from the invention and taking a point of view from the closest prior art: Would a skilled person starting from the closest prior art and knowing the objective technical problem to be solved arrive at the claimed solution in an obvious way by taking account of his "mental furniture" (*i.e.* common general knowledge, workshop competence, routine experience etc.) and the remaining prior art established by the search?If the claimed

solution is neither known from the remaining prior art nor directly resulting from the knowledge and competence a skilled person must be assumed to have, the invention as claimed involves an inventive step.If the distinguishing features are known from the remaining prior art, then the question arises: Would a skilled person have any reason to combine these features with the closest prior art to solve the objective technical problem? If yes, the claimed subject-matter is regarded as obvious; otherwise an inventive step is involved.If not all of the distinguishing features are known from one single further document, a skilled person would envisage combining the teachings of more than one document with the closest prior art provided that he is inspired to do so. However, elaborate mosaic-like combinations will normally not be persuasive.In all these cases, the emphasis on “would” is important. It is not sufficient if the distinguishing features are known from other documents so that the skilled person “could” theoretically make use of them. For obviousness, the skilled person needs good reasons to do so, *e.g.* by acting on suggestions or following hints (“could-would approach”). However, the “could-would approach” only applies if the “would” part involves technical considerations. If it does not, the fact that the invention “could” be arrived at is sufficient to render it obvious.

3.4 Verification of result obtained The result obtained should be scrutinised whether it appears satisfactory. In certain circumstances, it might be useful to vary the assumptions made when exercising the problem-and-solution approach and to analyse their influence on the final result. Similarly, the problem-and-solution approach may have to be iterated, in particular if a plurality of documents lends themselves as possible starting points**In any case, it must be safeguarded that in proof of non-obviousness all routes available from the prior art and practicable for a skilled person do not lead to the invention, whereas in proof of obviousness one single route leading conclusively from the prior art to the invention will be sufficient.**

4. Secondary indicia in the assessment of inventive step

In the context of step (3), in particular as part of the “could-would approach”, arguments that are conventionally called “secondary indicia” or “subtests” may be taken into account. These indicia are however merely auxiliary considerations in the assessment of inventive step and no substitute for the problem-and-solution approach. The secondary indicia are a ragbag of arguments in favour or against inventive step that carry different weight. Some of them are of ambiguous nature. A

rather strong argument for non-obviousness is the existence of a technical prejudice preven ting a skilled person from proceeding in the direction of the invention. Such a prejudice is, however, not straightforward to prove since it cannot be based on an isolated opinion, but must have been widely held by experts in that field.Also pointing to the presence of an inventive step would be the satisfaction of a long-felt need by the claimed invention. Again, a long-felt need might only be established if various and repeated attempts to deal with alleged disadvantages could be identified in the past.A surprising technical effect achieved by the invention might also be used as a positive argument. However, if this effect is obtained when following an approach that would obviously be considered by a skilled person for one reason or another, then it could not support the existence of an inventive step (mere “bonus” or “side” effect).Negative pointers indicating lack of inventive step relate to standard workshop modifications like arbitrary selections from the prior art, straightforward extrapolations or interpolations, non-synergistic aggregations or collocations of known features, choosing from a number of known and equally useful alternatives or the mere acceptance of foreseeable disadvantages.Of rather doubtful value are some arguments of economic nature meant to support inventive step, like commercial success which might also be due to other factors as *e.g.* marketing efforts, licensing which might also be the most convenient way for a competitor to make money while avoiding trouble or it might be part of a cross-licensing agreement, and infringement by competitors which might also result from a strong belief in invalidity of the patent.Finally, the argument that a patent has been granted in other jurisdictions would only be persuasive if the legal requirements and standards are comparable and the claimed subject-matter as well as the relevant state of the art are substantially the same, which in practice is not often the case.

5. Summary

The assessment of inventive step under the EPC should primarily adopt the so-called problem-and-solution approach comprising in general the steps of (1) identifying the closest prior art, (2) determining the objective technical problem to be solved and (3) deciding whether or not the claimed solu-tion is obvious from the remaining prior art when starting from the closest prior art and taking account of the objective problem. It is not decisive whether a skilled person theoretically could use information from the prior art to arrive at the invention, but whether he would have good reasons to use such information, e.g. by acting on sugges-tions and following hints (“could-would

approach”).E-learning modules on the problem-and-solution approach are available from the EPO website:

Contact

Munich

Prinzregentenplatz 7
81675 München
T +49.(0)89.928 05-0
F +49.(0)89.928 05-444
info@bardehle.de

Barcelona

Avenida de Diagonal 598, 3º 1ª
08021 Barcelona
T +34.(0)93.4 57 61 94
F +34.(0)93.4 57 62 05
info@bardehle.es

Duesseldorf

Breite Straße 27
40213 Duesseldorf
T +49.(0)211.478 13-0
F +49.(0)211.478 13-31
info.duesseldorf@bardehle.de

Paris

SO Square Opéra
5 rue Boudreau
75009 Paris
T +33.(0)1.53 05 15-00
F +33.(0)1.53 05 15-05
info@bardehle.fr

Hamburg

Bohnenstraße 4
20457 Hamburg
T +49.(0)40.271 4468-0
F +49.(0)40.271 4468-50
F +49.(0)40.271 4468-50
info.hamburg@bardehle.de

Yusarn Audrey Singapore Office

4 Shenton Way
#14-03, SGX Centre 2
Singapur 068807
T +65.(0)63.58 28 65
F +65.(0)63.58 28 64
enquiries@yusarn.com

YUSARN AUDREY
IP Strategists · IP Lawyers · Patent Attorneys