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Patentamt
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des brevets

Patents for software?

European law and practice



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Software vs computer-implemented inventions

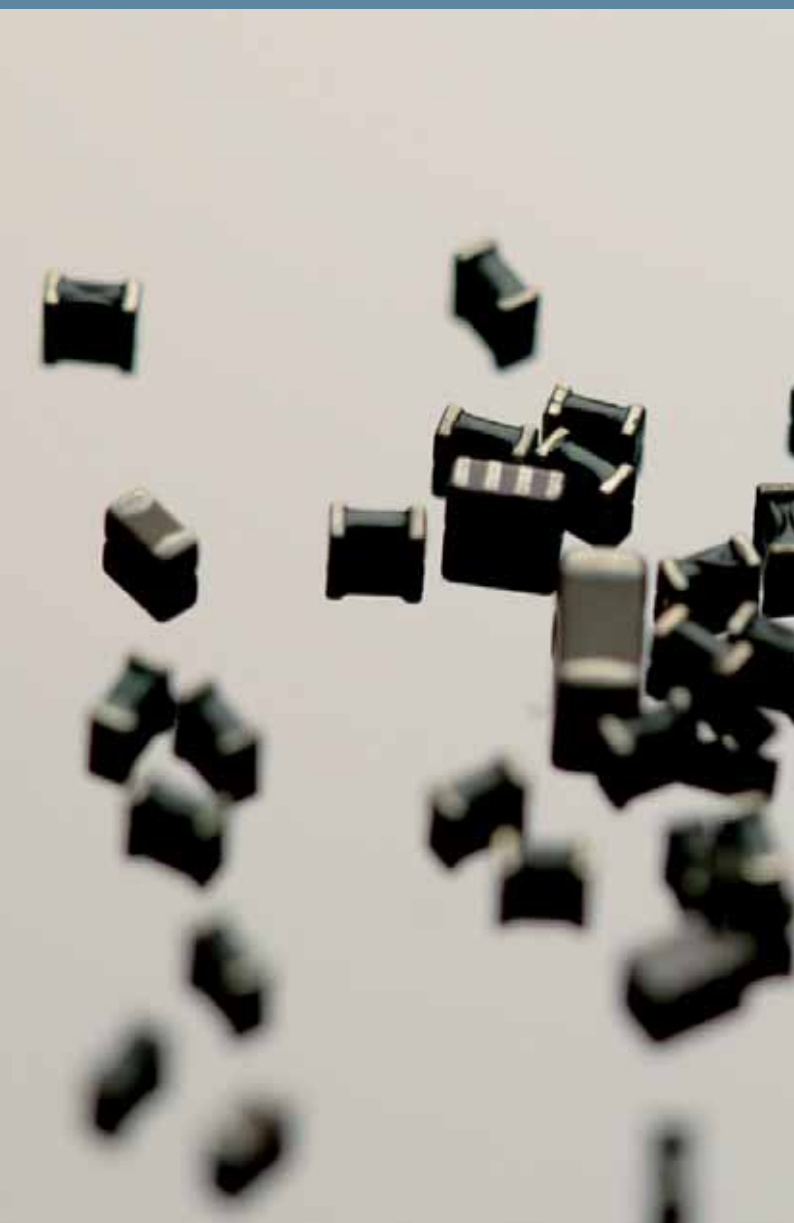
Relying on a well-known and widely used definition, a computer-implemented invention is an invention whose implementation involves the use of a computer, computer network or other programmable apparatus, the invention having one or more features which are realised wholly or partly by means of a computer program. The term software, on the other hand, is ambiguous. It is generally understood as the implementation of an algorithm in source or object code, but without distinguishing between technical and non-technical processes.

As with all inventions, computer-implemented inventions are patentable only if they have technical character, i.e. solve a technical problem, are new and involve an inventive technical contribution to the prior art.

The European Patent Office (EPO) does not grant patents for computer programs (“software patents”) or computer-implemented business methods that make no such technical contribution. In this respect the granting practice of the EPO differs significantly from that of the United States Patent & Trademark Office (USPTO).

The EPO is bound by European patent law as laid down in the European Patent Convention (EPC), which has been adopted by the 34 member states of the European Patent Organisation, and as interpreted by the independent EPO boards of appeal, the judiciary of the Organisation.

Patents for computer- implemented inventions and their benefit to society





Try to imagine a world without mobile telephones, refrigerators and washing machines, DVD players, medical imaging (X-ray, NMR), anti-lock braking systems (ABS) for cars, aircraft navigation systems, etc., etc.

We take many of the above items for granted in our everyday lives. Still, we realise that they contain highly complicated components. And, indeed, they all make use of computer-implemented inventions, frequently implemented by software. Nowadays such inventions can be found in all fields of technology, and in many cases the innovative part of a new product or process will lie in a computer program. Our lives have been immeasurably changed by these inventions and the benefit to individuals and society is enormous.

Think for a moment how much effort and investment has been put into the development and commercialisation of these products. Then ask yourself if the innovators would really have made that effort if they had not expected to benefit economically. Finally, ask yourself if these same innovators would have invested all the money and resources required to develop new or better products without the possibility of patent protection. The reality is that many important innovations have reached the market place with the help of the patent system.

Patents for everyone

It is not only the innovators that benefit from patents. As consumers we all benefit in incalculable ways from the development of technology facilitated by the patent system. As employees, our jobs may depend on a particular technology and the patents protecting it. Finally, as citizens, we all benefit

from the technological progress supported by the patent system and the contribution it makes to the European economy.

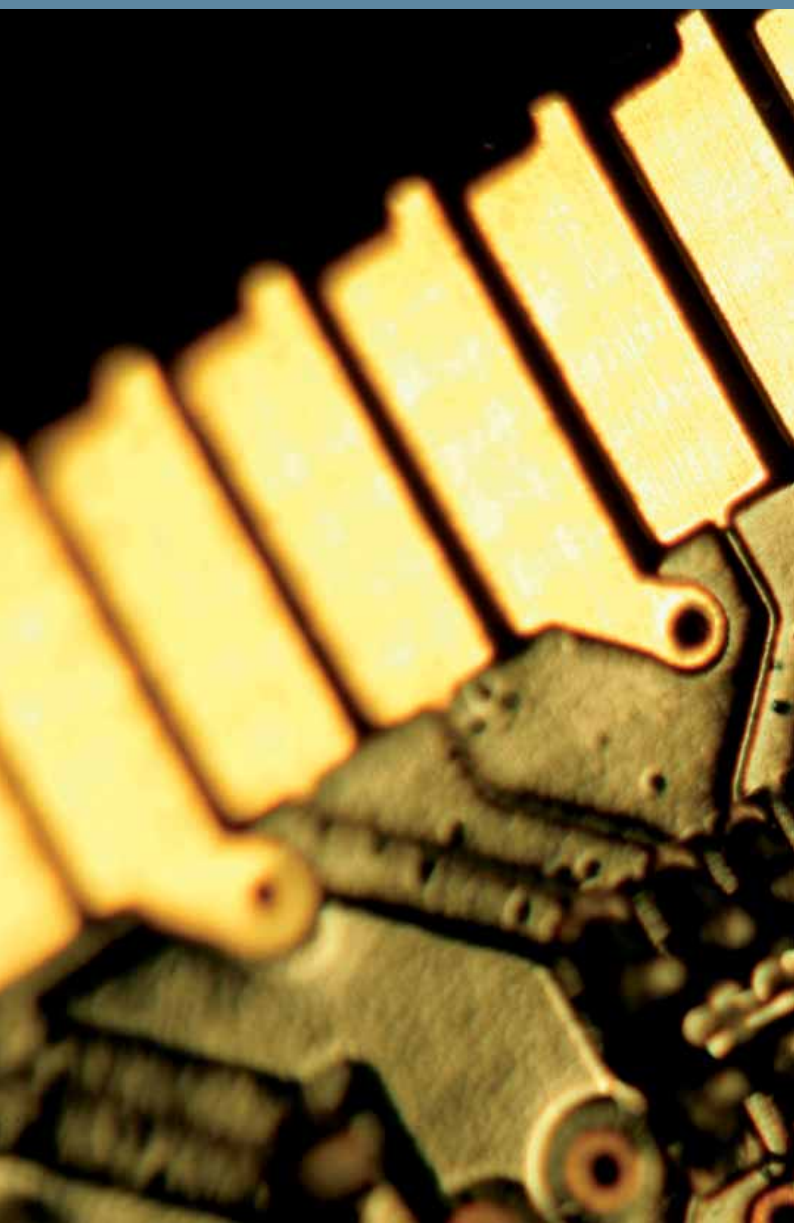
Patents promote innovation in two ways: firstly, the EPO grants patents only to applicants whose inventions fulfil strict criteria on patentability. If the invention to which the application relates fulfils these criteria, the applicant is rewarded with a temporary exclusive right preventing others (especially competitors) from using the patented invention without his or her consent, in return for public disclosure of the invention.

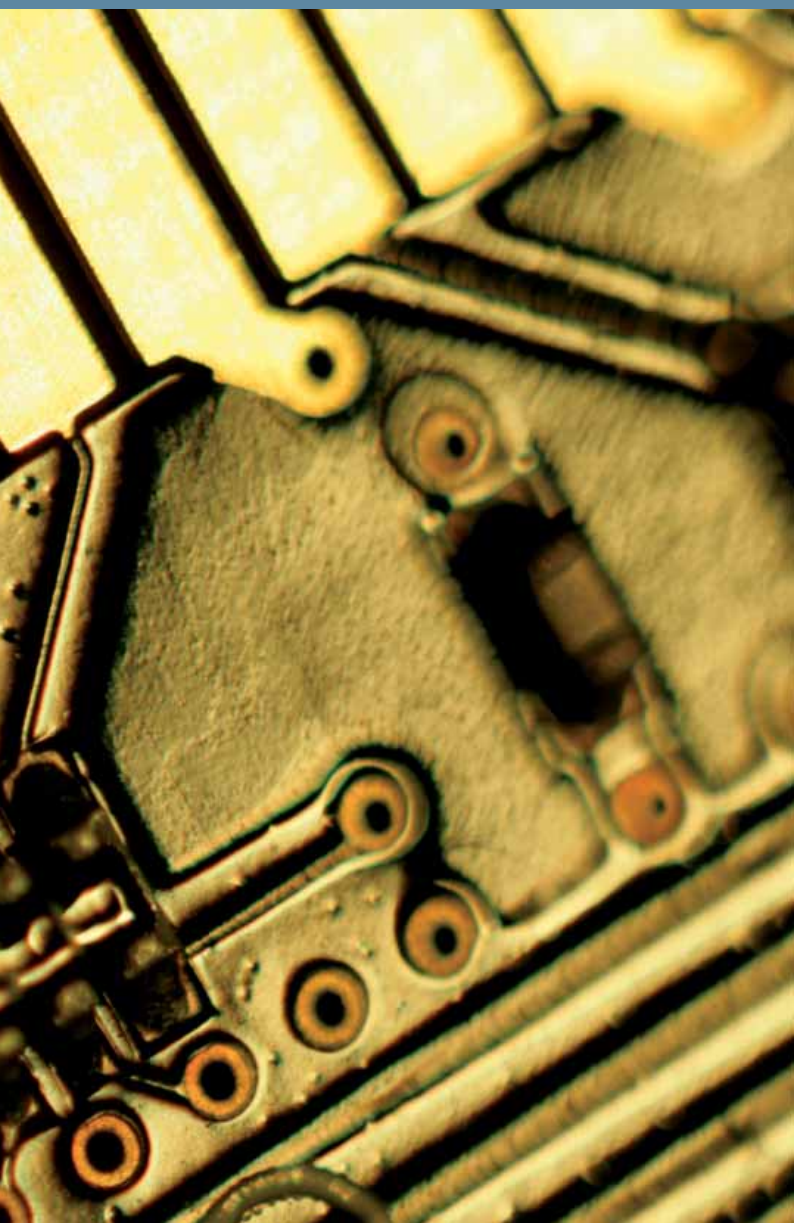
Researchers innovate in the knowledge that they may acquire protection for their innovative ideas. Indeed, especially in cases of high product-development costs and start-up investment, it is hard to imagine a business even contemplating putting its products on the market without adequate patent protection. Very often, therefore, a patent is a vital element for successful commercialisation. It is an essential incentive to innovate and indeed much innovation would not occur without it.

Secondly, the publication of any patent application – which is obligatory at an early stage in the patenting process – serves the public's need for access to the latest innovations. By publishing this vast flow of new ideas the patent system gives each of us information on the latest advances and adds enormously to society's knowledge base.

The EPO's patent databases are the largest in the world and contain over 60 million documents. In the knowledge economy of the 21st century this is one of the most important information dissemination tools and, in itself, is a powerful inducement to others to innovate. Access to the EPO's databases is available to everyone via the Internet and is free of charge.

EPO practice: the legal framework





The EPO examines patent applications and grants patents for inventions in all fields of technology, provided they meet all the patentability criteria of the European Patent Convention (EPC). Patents are only granted for inventions that are new, involve an inventive step and are susceptible of industrial application.

The starting point for assessing the patentability of computer-implemented inventions is Article 52 EPC – the fundamental provision that a patent should be granted for any invention, in all fields of technology, providing that the invention meets the other requirements for patentability and is not expressly excluded from patent protection.

Whilst the EPC sets out the patentability requirements of novelty, inventive step and industrial application in some detail (Articles 54, 56 and 57 EPC), it does not contain a legal definition of the term “invention”. It has, however, been part of the European legal tradition since the early days of the patent system that patent protection should be reserved for technical creations. To be patentable, the subject-matter for which protection is sought must therefore have a “technical character” or, to be more precise, involve a “technical teaching”, i.e. an instruction addressed to a skilled person as to how to solve a particular technical problem (rather than, for example, a purely financial, commercial or mathematical problem) using particular technical means.

Although the EPC does not define the term “invention”, it does contain a list of subject-matter or activities that are not to be regarded as “inventions” because they lack a technical character. The list of such subject-matter or activities contained in Article 52(2) EPC is not exhaustive but enumerates the major cases, including “methods for doing business” and “programs for computers”.

It should be emphasised that, under Article 52(3) EPC, these exceptions have to be interpreted narrowly. The subject-matter or activities on the list are only not patentable if the European patent application or patent relates to them as such. Therefore, inventions having a technical character that are or may be implemented by computer programs may well be patentable.

The case law of the boards of appeal

The EPO's completely independent boards of appeal have the task of reviewing the decisions of the EPO in grant and opposition proceedings. They thus interpret the EPC in cases where disputes arise. In the field of computer-implemented inventions the boards have in many decisions developed the interpretation of the EPC provisions relating to the term "invention", providing clear guidance on what is patentable and what is not.

According to established EPO practice in line with that jurisprudence, computer-implemented inventions can be patented if they involve an inventive technical contribution to the prior art, irrespective of whether they are implemented by hardware or by software. They are not patentable if there is no technical contribution to the prior art or, if there is such a contribution, it is obvious.

Under the EPC there are two basic kinds of patent claim: claims to a physical entity (product, apparatus) and claims to an activity (process, use). In the decision T 208/84 “VICOM” it was held that a claim directed to subject-matter for controlling or carrying out a technical process is patentable irrespective of whether it is implemented by hardware or by software. The decision whether the process is carried out by means of special circuits or by means of a computer program depends on economic and technological factors. Patentability must not be denied merely on the grounds that a computer program is involved. The decision T 26/86 “Koch & Sterzel”, concerning X-ray equipment designed for radiological imaging using a computer program, confirmed that practice.

A special case is claims to computer program products, such as computer programs stored on a data carrier (T 1173/97 “IBM” and T 935/97 “IBM”). These are patentable subject-matter if there is a “further technical effect”, i.e. one going beyond the normal physical effects (e.g. flow of electric current) seen when programs are run. Such further technical effect might be the more secure operation of the brake of a car or train. A further technical effect might also be faster communication between two mobile phones with improved quality of voice transmission. However, such claims are only allowed by the EPO if they are based on a new and inventive technical process that may be carried out by a computer program.

Pure business methods as such are not patentable (Article 52(2) and (3) EPC and T 931/95 “PBS”). The patentability of an auction method carried out by means of the Internet was denied because there was no technical contribution to the prior art (T 258/03 “Hitachi”), as the technical implementation of the improved auction rules was done by the conventional means of a computer and a computer network.

The EPO does not grant “software patents”, which is a misleading concept. Under the EPC a computer program claimed as such is not a patentable invention. Inventions involving computer programs that implement business, mathematical or similar methods and do not produce technical effects (e.g. because they solve a business problem rather than a technical one) are not patentable, and no patents will be granted for such inventions in Europe.

Examples of patentable inventions involving software





The EPC as interpreted by the boards of appeal enables and obliges the EPO to grant patents for many inventions in which software makes a technical contribution, such as a novel and inventive computer-controlled process operating a robot arm, enhancing a graphic display, controlling data storage between memories or routing diverse calls through a telephone exchange in response to demand.

Other processes, such as Internet retailing, though involving the use of a computer, are not patentable in Europe, whereas such processes are often patented in the USA.

Example of a European patent granted by the EPO for an invention enabling detection of the proper functioning of an ABS control unit: EP 771 280. Example of an application for a European patent rejected by the EPO concerning a fixed-odds betting system: EP 1 139 245.

No source codes

There is no legal basis in the EPC for requesting a program source code from the applicant. Nor is it the policy of the EPO to require or examine source codes or to publish them as annexes to patent application documents (which consist of the request for grant, the claims, the description, the drawings and the abstract). The source code is neither necessary nor appropriate for sufficient disclosure of a computer-implemented invention. For examination and publication purposes the inventive concept must be disclosed in the application in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. This does not require disclosure of a source code. Moreover, given the length and complexity of source code listings, which can often stretch to hundreds of pages, it would be quite impossible to examine them.

The search – special situations

If the patent application only contains subject-matter excluded from patentability, then no meaningful search can be carried out. In such a case a declaration will be issued stating that no search report will be issued.

If the patent application also contains some subject-matter not excluded from patentability, i.e. a technical teaching, it may nevertheless be the case that this teaching is so well-known (i.e. conventional, belonging to common general knowledge) that providing a document to prove this is not necessary. In such a case, either the search report will not cite a document, or a generic document will be cited which shows that it was known to use conventional technology to carry out non-technical activities.

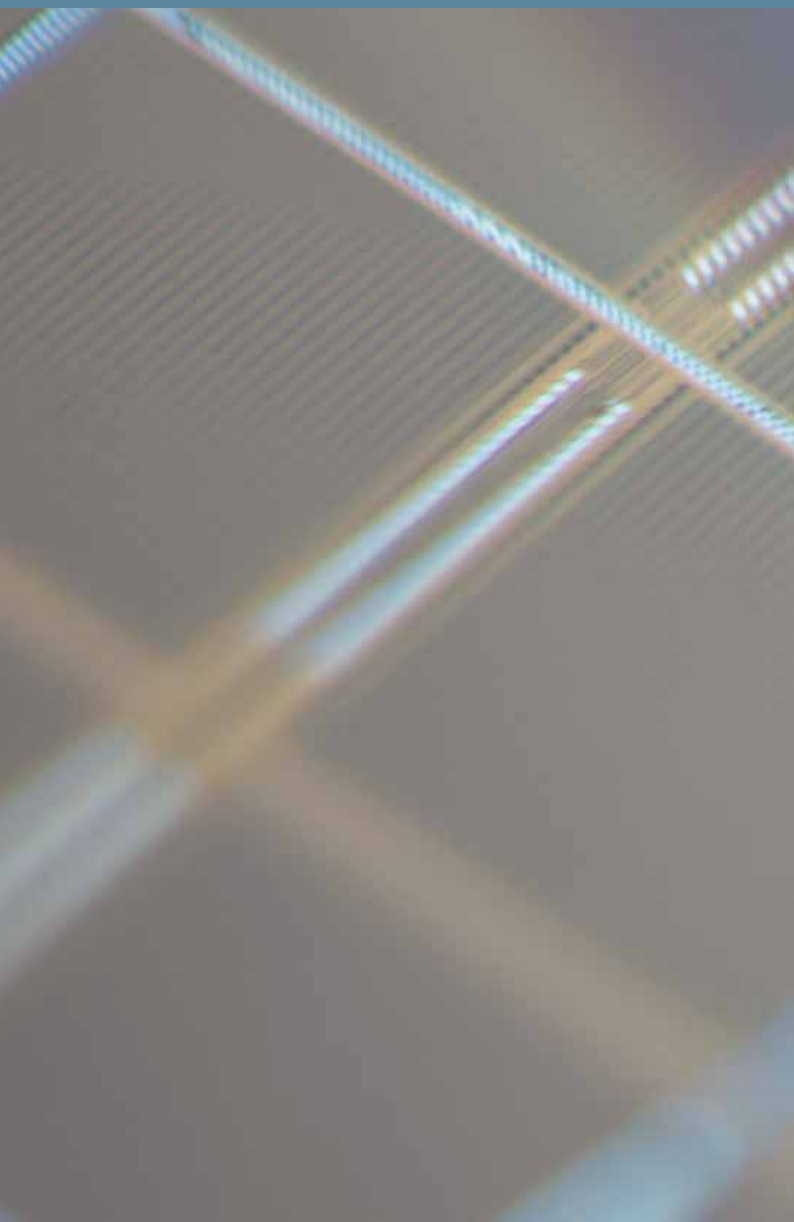
This practice means that the EPO can, at a very early stage in the procedure, indicate to the applicant and the public that the claims of the application are clearly not patentable.

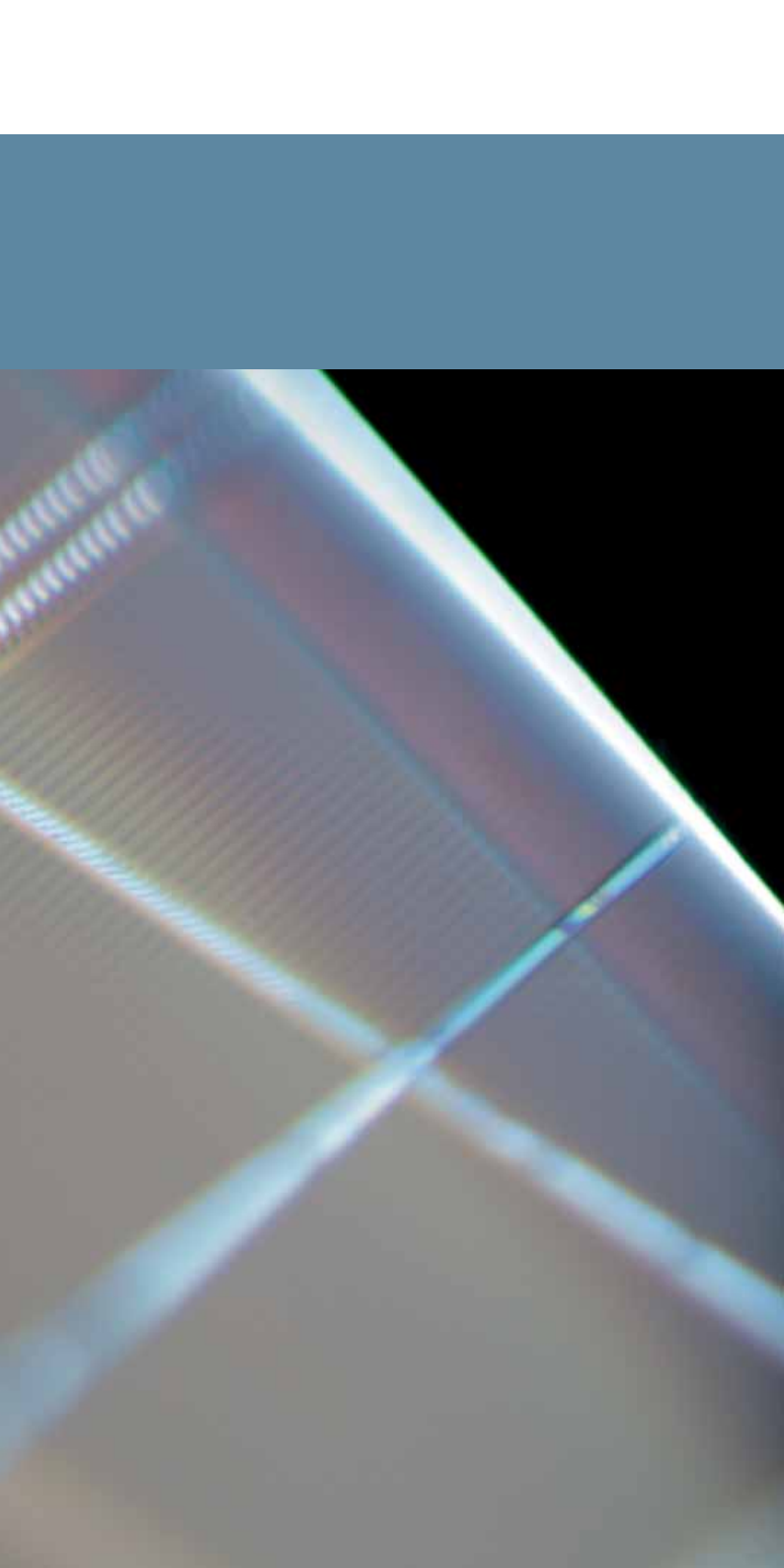
Are patents granted for “trivial” inventions?

The expression “trivial patent” is ambiguous and subjective. If used to mean patents which third parties think should not have been granted because they lack novelty or inventive step, then legal mechanisms enabling them to challenge such patents are in place.

Furthermore, with hindsight many patented inventions may appear to be trivial or obvious, but at the priority date of the application they were not. Finally, in cases where the scope of protection is or has become small, perhaps because the examiner, in the light of the prior art, has imposed additional restrictions to the claims which may make the patent appear “trivial” to third parties, then it may also be of doubtful value to its owner and unlikely to block any further technical innovation.

**European patents: high quality
and high legal certainty**





Each application for a European patent is subject to a thorough search and a rigorous examination by three members of the EPO's highly trained staff, to ensure that the application fulfils all the strict requirements of the EPC and that only true inventions that merit protection are patented.

Moreover, the EPC provides several legal mechanisms to enable third parties to monitor the procedure and to allow decisions taken by the EPO to be challenged, for instance where new relevant prior art comes to light.

Within the EPO procedure the following is available:

- inspection by third parties of pending applications
- observations by third parties on pending applications
- oppositions by third parties to granted patents
- appeals by any party adversely affected by an EPO decision in grant and opposition proceedings.

Note that there is no fee for the inspection of pending applications (available at www.epoline.org/portal/public/register-plus), or for the filing of observations. Parties to opposition proceedings at the EPO are not required to have any economic or legal interest in the patent: anyone can file an opposition to a granted patent.

After the EPO procedure (in national courts):

- actions for revocation of European patents.

Applications not meeting the strict requirements of the EPC are refused by the EPO. If an application does meet these requirements, and is granted, subsequent disputes concerning the validity and infringement of a European patent are subject to national law and the final decision rests with national courts.

The EPO grant procedure and the various possibilities for third parties to intervene ensure that European patents are of high quality and high legal certainty, enjoying a good presumption of validity. If the public believes that a mistake has occurred, use should be made of the corrective legal mechanisms available.

The costs of patenting

Patents are expensive and the EPO is very aware of the high cost of patenting in Europe. However, for the average European patent, the EPO's fees account for only a small part of the total costs incurred by its owner.

The major part of the costs is due to the translations the owner has to produce for all EPC countries where he wants his patent to take effect and where the national language is not the same as the language of the patent. This however is a matter for national IP authorities and legislation.

The London Agreement, under which states agree to waive most or all of the translation requirements for granted patents, entered into force in May 2008. This will substantially cut the costs of obtaining a European patent.

Patents and small businesses

Anybody can apply for a patent under the EPC, which makes no distinction between individuals, SMEs or big companies. Greater access to resources and to information naturally means that costs become more affordable. However, that applies to the acquisition of any asset or to entry into any procedure, and is not especially linked to the patenting process. Moreover, there is little evidence to suggest that SMEs do not benefit from patents: indeed, for innovative SMEs and start-ups without sufficient financial resources and a large market share, patents are often the only chance to stand their ground in competition.

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