The four major problems with the Council proposition

Jonas Maebe
Gent University, Belgium
jonas.maebe@elis.ugent.be

12th may 2004

Contents

1 Program claims

1.1 Relevant articles/recitals

Article 5.2:

> "A claim to a computer program, either on its own or on a carrier, shall not be allowed unless that program would, when loaded and executed in a computer, programmed computer network or other programmable apparatus, put into force a product or process claimed in the same patent application in accordance with paragraph 1."

1.2 Introduction

The two most important parts of a patent are the description and the conclusions. The description simply describes the invention you think you have done. If this described invention passes all tests of patentability, you can obtain a number of monopolies. These monopolies are described in the claims (so "claim" = "monopoly").

These claims must be based on your invention, but can be broader/more generic than the invention itself (because otherwise someone can work around your monopoly by changing a small detail in your invention). In the case of program claims, this allows people to obtain monopolies on, among other things, classes of computer programs. This is even the case if one makes sure that computer programs can not fulfill the tests of patentability.

1.3 Program claims allow per definition software patents

If we rewrite article 5.2 of the Council proposal without the double negations, we get:

> A claim on a computer program on its own is allowed if this computer program, when executed by a computer, realises a product or process that is claimed elsewhere in the same patent.

A concrete example: suppose you invent a new chemical reaction by adding together elements A and B, waiting 5 minutes and then adding element C. If program claims are allowed, then based on this (real) invention you can ask for a monopoly on "a computer program that adds two things together, waits for a while and then adds another thing" ("a while" instead of "5 minutes", because of the earlier mentioned fact that claims can always be more general than then invention itself).

The reason is that a computer program does not know anything about chemical substances: a computer program that is used to control the machinery which is used to perform this chemical reaction, kan be used without a change in a bread making machine and then work with flour, water and leaven instead of with the elements A, B and C. In a steel mill, it could work with ore, coal and water.

This is due to the fact that a computer can work internally only with numbers. What these numbers represent, are worries for others. A monopoly on a "computer program on its own" however allows one to discard those "others", which means that you are left with the monopolisations of only some calculations on a computer. Even the execution of such a program on a computer without any external hardware, will cause an infringement on such a program claim.

As such, program claims allow patent monopolies on general principles/methods executed on computers, even if you would make sure that computer programs themselves can never fulfill the conditions of patentability. Note that its not just a monopoly on the program as written by the patent owner (that's covered by copyright), it's a monopoly on all programs that perform the claimed steps (regardless of how they are written).

1.4   Program claims do not only forbid usage, but also publication

This follows from the same article 5.2:

> *A claim to a computer program, either on its own or on a carrier, [is allowed if ...]*

This means you have received a monopoly on a computer program (either on its own, or on a carrier). When a computer program is for example placed on a website, then is present on a (magnetic) carrier at the internet provider. In fact, a computer program is always present on a carrier, you can't store a computer program on "nothing" (and even if that were the case, then the fact remains that the monopoly granted on the computer program "on its own" as well).

The consequence is that the mere publication of such a program constitutes an infringement of the patent, instead of only its use: after all, you placed the program on a carrier and allowed for its distribution, while the patent owner has a monopoly on this action and that kind of programs.

This also goes entirely against the basic patent principles. The intention of the system is after all precisely the publication of information, by promising an invention a monopoly on the use of the invention described in this information.

Program claims however grant a monopoly on this same information which is supposedly given to the public, which causes the whole system to block. It is the same as if when someone patents a new engine, he would also be able to obtain a monopoly on all books which describe the inner workings of this engine. After all, a computer program is nothing but a (mathematical) description of something, in a format that a computer can understand.

A practical consequence is that an internet provider whose customer offers a program (which infringes on a patent) for download, can be sued based on "contributory infringement": after all, he facilitates the publication of the program, which is forbidden.

2   TRIPs

2.1   Relevant articles/recitals

Based on supposed "TRIPs incompatibilities", The Council proposal discards article 3 of the European Parliament (along with several others):

> *"Member States shall ensure that data processing is not considered to be a field of technology within the meaning of patent law, and that innovations in the field of data processing are not considered to be inventions within the meaning of patent law."*

2.2   Compatibility of this article with TRIPs

This article was introduced exactly to show that the directive as amended by the European Parliament does not contract the TRIPs treaty. The reason is that this treaty states in article 27:

> *"Patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step andare capable of industrial application. "*

This text explicitly uses terms which are defined nowhere else in the treaty (like "invention", "field of technology" and "inventive step"), so that signing members can define these terms themselves in such a way that they fit best in their existing laws.

According to article 52 of the the European Patent Convention, a computer program can never constitute an invention (which is again repeated in the Parliament text), and this article makes sure that innovations in computer programs (= in the field of data processing) can never belong to a field of technology.

This way, computer program can be excluded from patentability without causing even the slightest conflict with the TRIPs treaties.

2.3   TRIPs explicitly forbids software patents

Article 10 of the TRIPs treaty states:

> *"Computer programs, whether in source or object code, shall be protected as literary works under the Berne Convention (1971)."*

As opposed to what a first reading would suggest, namely that this simply means that copyright protection must be available for computer programs, this article goes further. The WTO states on its website ([1]) regarding article 10.1 that:

> ***The obligation to protect computer programs as literary works means e.g. that only those limitations that are applicable to literary works may be applied to computer programs.***

Since patent protection is unavailable for literary works, it can't be available for computer programs either according to TRIPs. Proponents of software patents often counter this using their interpretation of "computer program as such", which turns "computer programs with a further technical effect" into "computer-implemented inventions", which in turn would not be affected by this exclusion.

This interpretation is however invalid due to article 4 of the EU Software Copyright directive from 1991. This article states that a computer program as literary work includes the following (emphasis mine):

> *"... the permanent or temporary reproduction of a computer program by any means and in any form, in part or in whole. Insofar as loading, displaying,* ***running***, *transmission or storage ..."*

---

[1] http://www.wto.org/english/tratop_e/trips_e/intel2_e.htm#copyright

The WIPO Copyright Treaty also contains applicable clauses (article 10 [2]):

(1) Contracting Parties may, in their national legislation, provide for limitations of or exceptions to the rights granted to authors of literary and artistic works under this Treaty in certain special cases that do not conflict with a normal exploitation of the work and do not unreasonably prejudice the legitimate of the author.

(2) Contracting Parties shall, when applying the Berne Convention, confine any limitations of or exceptions to rights provided for therein to certain special cases that do not conflict with a normal exploitation of the work and do not unreasonably prejudice the legitimate interests of the author.

Software patents prevent a software author from exercising several author's rights (such as the "normal exploitation of the work", because a software patent can prevent him from selling his work), and as such conflict with this treaty. Article 1 of the TRIPs treaty contains a similar wording.

3 Technical invention and related concepts

3.1 Relevant articles/recitals

The Council discards article 3 of the European Parliament and reinstates article 2 of the JURI Committee. Both texts are quoted later on.

The definitions of the European Parliament here are necessary to make sure that "software executed on a computer" cannot fulfill the definition of "invention", and that "mathematical or business method described in software" cannot fulfill the definition of "technical contribution".

3.2 A short overview of the European Patent Convention

Article 52(1) of this convention lays down the conditions for patentability. This article states that "something" is patentable if it i) is an invention, and if this invention is ii) new, iii) contains an inventive step and iv) industrially applicable.

The article does not define what exactly constitutes an "invention", but does define in art 52(2) several things which cannot constitute an invention (and which thus can never be patentable, even if they fulfill all other conditions of patentability). A number of those things are "aesthetic creations", "mathematical methods", "rules for presentation of information" and "computer programs".

Article 52(3) however notes that these exclusions only pertain to the mentioned subject-matter and activities "as such". The European Patent Office (EPO) has decided somewhere halfway the eighties that a "computer program executed by a computer" is no longer "a computer program as such", but a technical proces and thus not excluded from patentability.

This way, they try to make patent law applicable to the only useful use of computer programs (their execution by a computer). Claiming that this means that computer programs as such are still excluded from patentability, would be like claiming that aesthetic

---

[2]http://www.wipo.int/clea/docs/en/wo/wo033en.htm#P84_10623

creations are still excluded from patentability if patents on drawing styles were allowed (because the interaction of a pencil with paper is a technical/physical process).

The original interpretation was simply that computer programs (executed by a computer or not) can never constitute inventions (regardless of how new and inventive they may be), but that at the same time a perfectly patentable invention (like a fuel injection technique) cannot be rendered unpatentable by that fact that you need a computer and a computer program to realise it.

It the the latter interpretation that the European Parliament wants to confirm, while the Council wants to codify the one of the EPO.

3.3 The version of the Council

Article 2:

> a *"computer-implemented invention" means any invention the performance of which 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 or computer programs;*
>
> b *"technical contribution" means a contribution to the state of the art in a field of technology which is not obvious to a person skilled in the art. The technical contribution shall be assessed by consideration of the difference between the state of the art and the scope of the patent claim considered as a whole, which must comprise technical features, irrespective of whether or not these are accompanied by nontechnical features.*

Suppose we want to patent the usage of a way to sort numbers in a new, fast way in computer programs.

Given the interpretation of the EPO in point 3.2, a "computer program executed by a computer" fulfills the definition of "computer-implemented invention" in art 2a: it's then an "invention" whose "performance" includes the use of a computer and all of its "features" are realised by a "computer program". So our number sorting program fulfills this definition as well.

A "computer program as such" can fulfill the given definition of "technical contribution" in art 2b, if "technical field" is not defined properly or even at all (as is the case in the proposal of the Council). After all, it can then be considered a contribution in a "technical field" ("informatics" or something like that), and it's quite possible that our sorting method is not obvious.

As far as the second part of art 2b is concerned, a very big problem is that it takes the "claims as a whole". The reason is that unless program claims are allowed, computer programs are usually monopolised as

> *"a computer with a central processing unit and memory, which executes the following steps: [description of what your method does]"*

This means that the claims as a whole contain on the one hand a (generic, existing) computer and on the other hand your (new) method embedded in a computer program. The difference between the claims as a whole and the "state of the art" (what is already known) thus boils down to just your method (embedded in a computer program). The

claims as a whole also contain "technical features" (the computer), and thus article 2b has been fulfilled.

Conclusion: a "computer program executed by a computer" fulfills the definition of "computer-implemented invention"and "a computer program containing a new (mathematical) method" fulfills the definition of "technical contribution".

Then there is still article 4, which lays down extra conditions to the computer program (the technical contribution), but it can fulfill all of these conditions as well. The reason is that the EPO currently interprets "technical" as, among others, "it makes the computer work faster", "it offers large scale benefits" (which means also business methods implemented in computer programs can be "technical"), "physical data" is processed (e.g. a picture), ... Also things like "the number of required mouse clicks" can be a technical contribution.

These interpretations are not invalidated by the proposal of the Council.

3.4 The version of the Parliament

Article 2a in their version is:

> a *"computer-implemented invention" means any invention within the meaning of the European Patent Convention the performance of which involves the use of a computer, computer network or other programmable apparatus and having in its implementations one or more non-technical features which are realised wholly or partly by a computer program or computer programs, besides the technical features that any invention must contribute;*

This definition boils down to "a computer-implemented invention is the same as any other invention, but which requires a computer or computer program to use it". This means the Parliament excludes software (software is after all not an invention according to the European Patent Convention), but at the same time make sure that computer-controlled inventions do not become unpatentable.

De limiting factor in this amendment is the last sub clause "besides the technical features that any invention must contribute". As long as "technical" is defined properly (which is done in article 2c), this excludes "computer programs executed by a computer" as well.

Article 2b is:

> b *'technical contribution', also called 'invention', means a contribution to the state of the art in a field of technology. The technical character of the contribution is one of the four requirements for patentability. Additionally, to deserve a patent, the technical contribution has to be new, non-obvious, and susceptible of industrial application. The use of natural forces to control physical effects beyond the digital representation of information belongs to a field of technology. The processing, handling, and presentation of information do not belong to a field of technology, even where technical devices are employed for such purposes;*

"Technical contribution" is defined here as synonym of "invention" (which is a change from the current practice of the EPO and which restores their former practice). The

reasoning is that if you invent something, this invention is your (technical) contribution to society.

The juridical reason is that EPO only split off the "technical contribution" from the "(computer implemented) invention" to make computer program patentable. After all, as shown earlier, this allows you to use the "software executed by a computer" to avoid the "computer program as such exclusion" (if this interpretation weren't invalid because of article 4 of the EU Software Copyright directive, at least), and next use the computer program itself (in the form of a "technical contribution") to pass the other tests of patentability, such as novelty and inventive step.

Art 2c:

> c 'field of technology' means an industrial application domain requiring the use of controllable forces of nature to achieve predictable results. 'Technical' means 'belonging to a field of technology';

The extremely important definitions of "field of technology" and "technical", which are form the foundation of the definitions of what is patentable and what not in the rest of the directive.

Art 2d:

> d 'industry' within the meaning of patent law means the automated production of material goods.

This is an extra safeguard. Currently, "industrial applicability" is interpreted by the EPO as "it can be used to make money". This amendment ensures that innovations in the realms of accounting (the "financial industry"), the "music industry" etc. are already excluded. Patent law dates from the 15th century and was never meant for monopolisation of immaterial goods (it doesn't work there either, copyright and certain sui generis rights are much more suited for that kind of assets).

4 Interoperability

4.1 Relevant articles/recitals

Article 6a (9 after renumbering) of the Parliament is discarded by the Council:

> "Member States shall ensure that, wherever the use of a patented technique is needed for a significant purpose, such as ensuring conversion of the conventions used in two different computer systems or networks so as to allow communication and exchange of data content between them, such use is not considered to be a patent infringement."

4.2 The version of the Council

The proposal of the Council wants to guarantee interoperability in recital 17:

> " The provisions of this directive are without prejudice to the application of art. 81 and 82 of the Treaty, in particular where a dominant supplier refuses to allow the use of a patented technique which is needed for the sole purpose of

ensuring conversion of the conventions used in 2 different computer systems or networks so as to allow communication and exchange of data content between them.”

This simply means that patents cannot be used to violate the antitrust laws of the EU.

There are two problems with this:

i As the recent procedure of the Commission against Microsoft has show, such procedures can take years to complete, and if Microsoft appeals, it will take several years more. An SME who is hindered by this, has gone bankrupt long before such procedures have concluded. This clearly demonstrates the need for ground rules which thwart attempts at such abuse from the start.

ii A second problem is that property law is currently still assigned to the member states. European courts have decided that by analogy this applies to Intellectual property too. There are big restrictions on how European-level procedures can affect areas still reserved for Member States' law. This means the EU antitrust authorities have to take a lot of care in what they do concerning intellectual property, unless they can show direct impacts in another area where they are allowed to take action. This was the reason why they had so much trouble in the IMS case, and why they are being so careful in the Microsoft case.

4.3   The version of the European Parliament

The proposal of Luxembourg in the Council is equivalent to the version of the Parliament (the wording is somewhat more strict, but it achieves the same goal). Since this is a directive, the article would be translated into national law, so there would be no problem of different jurisdictions.

Interoperability is so important in the communications and computer world because of the so-called “network effects”: if we don't want to force everyone to work with exactly the same programs (e.g. Internet Explorer vs. the Netscape web browser) or even the same brands or types of devices (PC vs. mobile phone), then it must be possible for all these devices and programs to communicate with each other and other programs/devices in the broadest sense of the word.

Additionally, also because of these networking effects, the software and communication branches already have much larger natural tendency to the formation of monopolies or cartels. Extra stimulation by allowing patents to be used to make it even more difficult for others to compete with these established companies, is not a desirable goal.