Patent examination

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Foreword

This page is about the patent examination process and particularly about the examination of software and business method patents in USA and Europe. I assume that the reader understands words and phrases like patent, business method or prior art. I also assume that the reader knows the structure of a patent and how to search patent applications in the US Patent and Trademark Office (USPTO) and in the European Patent Office (EPO) Web sites. To learn these prerequisites you can read Patent search on this site. I also present an example of patent trial and re−examination in the Business Method page of this site (MercExchange v. eBay) and another one (Eolas v. Microsoft) at the end of this page.

This page contains the following sections:

1. common principles of examination,
2. USPTO examination and re−examination,
3. EPO examination and opposition,
4. examples of re−examination (PanIP and Eolas patents).

Principle

A patent is a property right ("the right to exclude others from making, using, offering for sale, or selling") granted by a government for a limited time (typically twenty years) to reward a "progress of science and useful arts". A patent has a subject matter, claimed in a patent application, like a land has a location.

A patent application must meet three conditions to be a "progress of science and useful arts":

1. To be useful. The invention must have some application or utility or be an improvement over existing products and/or techniques.
2. To be novel. The invention must be demonstrably different from publicly available ideas, inventions, or products (so−called "prior art").
3. To be inventive or, to say it in another way, to not be obvious.

A patent application has two main sections:

1. The claims that point out and distinctly claim the subject matter which the applicant regards as his invention.
2. The description that explains how the invention is working. The description must enable a person of the art to reproduce this invention ("enablement"). The enablement demonstrates that the inventor owns the claimed invention. This is also a disclosure that allows anybody to freely reproduce the invention once the patent has expired.

For the patent system to work the public must be able to check what is patented in order to settle licence agreements with patentees or to design around patents. For this reason patents have to be public. The public has also to think that licences are valid and to be able to determine their scope. Without rules allowing determining from the patent claims whether a process or method infringes a patent the public would not be able to know if they use a patent process or method. And without the presumption of validity a patent would be a legal paper that just says that if you use the patent process or method you may be sued and that a court may find then that the patent is valid.

Therefore patent offices must check that patent application follow writing rules and meet these three patentability criteria (usefulness, novelty and non−obviousness) plus a fourth criterion, patentable subject matter that I present now.

There are subject matters that cannot be patented. The general rule is that "laws of nature, natural phenomena, and abstract ideas" including mathematical algorithms cannot be patented and that patents shall be granted only for technical ideas. This question has been the object of debates in recent years, especially for biology, software and business method patents and particularly in Europe. I discussed this issue in the Patent search page and in the Business Method page. My opinion is that patents shall be granted for "anything under the sun that is made by man" whose usefulness, novelty, non−obviousness and enablement can be effectively appreciated by a patent office. This would exclude subject matters for which patent offices cannot build prior art databases and subject matters that can be found in a couple of days and disclosed in a short e−mail or article.

The patent office checking is called examination. Once it is granted a patent is presumed to be valid. So in case of dispute the burden of proof is on the defendant (the alleged infringer) and not on the plaintiff (the patentee) to the opposite, for instance, of criminal cases.

USPTO

Writing rules

The reference guide for writing a patent is the Manual of Patent Examining Procedure (MPEP). Read in particular the Chapter 2100 Patentability.

A US patent is made of three sections:

1. an abstract,
2. claims defining "in words the boundaries of the invention so that the public will know what the invention is and can avoid infringing it",
3. a description.

Abstract

"A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of basic nature, the entire technical disclosure may be new in the art and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product or composition, the abstract should include the technical disclosure of the improvement. [...] If the new disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

1. if a machine or apparatus, its organization and operation; [...]
2. if an article, its method of making;
3. if a process, the steps."

Claims

The function of claims is explained in 35 USC 112: "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."

Here is an example of claim:

"A computer−implemented method of searching for an item in a plurality of independently operated electronic auctions interconnected by a computer network, each electronic auction having an associated data repository, the method comprising:

- receiving input identifying an item; and
- instructing a software search agent to search for the item on the computer network in the respective data repositories of one or more of the electronic auctions."

It has a preamble and a number of elements (phrases) that describe the claim limitations. There is infringement when another party use a system with each and every limitation of a claim. So the inventor must include the absolute minimal set of elements that differentiate a new invention over what came before. If US patents contain many claims, this is partly to increase the chances to get an optimal claim. When a claim contains many limitations, this is usually because the examiner rejected the first version of the claim for lack of novelty (it was anticipated by prior art) or obviousness and because the applicant added additional limitations to overcome the rejection.

This claim has a function, which is to search "an item in a plurality of independently operated electronic auctions interconnected by a computer network" and two steps:

1. "receiving input identifying an item; and
2. instructing a software search agent to search for the item on the computer network in the respective data repositories of one or more of the electronic auctions."

Such claims are called means or steps plus function claims. They are so important that 35 USC 112 describes them: "An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof."

So the precise scope of such claims is determined by the claim and by the description. There was a trial for infringement of the patent that contains the claim above. The court determined the meaning of words like item and also whether the steps recited a sequence. To learn more about this case you may look at the Business method page. For details about the construction of means plus function claims you may look at http://www.uspto.gov/go/og/con/files/cons089.htm and http://jip.kentlaw.edu/nart/2004/A−2.htm.

As implicitly stated by 35 USC 112 a claim may also recite structure, material, or acts. In this case the claim loses its function limitation. A claim for a popcorn dispenser was rejected because the claimed structure was the same as the structure of an oil can.

As a rule the examiner will give to a claim its "broadest reasonable interpretation consistent with the specification". The reason is that the applicant "always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified." In the same way "the words of the claim must be given their plain [ordinary and customary] meaning unless applicant has provided a clear definition in the specification." The clear definition exception means that an "applicant is entitled to be his or her own lexicographer and may rebut the presumption that claim terms are to be given their ordinary and customary meaning by clearly setting forth a definition of the term that is different from its ordinary and customary meaning."

Description

The description is made of:

- Title: short, brief and specific.
- The field of the invention: a broad statement that should start with something like "The present invention relates to". In case of 5,838,906 it was "This invention relates generally to manipulating data in a computer network, and specifically to retrieving, presenting and manipulating embedded program objects in distributed hypermedia systems."
- Background information: what people will need to understand, search or examine the invention.
- Prior art: Problems that inventors have faced in this area and how they have attempted to solve them.
- Summary of the invention: How the invention solves one or several of these problems. What the applicant is trying to show is how his invention is new and different.
- Drawing and screenshots
- Detailed description: Must describe the invention parts in sufficient detail so that someone could reproduce at least one version (preferred embodiment) of the invention.

Examination

I show examination histories in the Patent search page (PanIP and Eolas) and in the Business Method page (MercExchange).

An examination is a workflow comprising the following steps:

1. The examiner is assigned a patent application.
2. He checks if the application is patentable, and more precisely if the patent application (1) complies with patent writing rules, (2) has a patentable (statutory) subject−matter, (3) enable a person of the art to implement the invention (enablement), and (4) is useful, novel and inventive and (5) if claims are supported by the description (have an adequate written description). If the application does not pass at least one of these tests the examiner makes a rejection, in which he explains the reasons for the rejection and may suggest changes. This is not uncommon that the examiner also suggests abandoning the application.
3. The applicant replies to the rejection in a document usually entitled Remarks. He can also amend the application. The amendment usually consists in claim changes (new claims, modified and cancelled claims) but can also include description or abstract changes.
4. The examiner analyzes the applicant s answer. If he still considers that the application is not patentable the examiner makes another rejection. Then the applicant replies to the rejection and so forth.
5. At a given time the examiner finds that the application is patentable and issues a notice of allowance. Then a patent is granted to the applicant.

Note that the applicant can modify the application after filing and before examination in preliminary amendments.

37 C.F.R. 1.111(b) explains how the applicant should handle a rejection:

"In order to be entitled to reconsideration or further examination, the applicant or patent owner must reply to the Office action. The reply by the applicant or patent owner must be reduced to a writing which distinctly and specifically points out the supposed errors in the examiner's action and must reply to every ground of objection and rejection in the prior Office action. The reply must present arguments pointing out the specific distinctions believed to render the claims, including any newly presented claims, patentable over any applied references. [...] A general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references does not comply with the requirements of this section."

The reference guide of examination is the section 700 of the Manual of Patent Examining Procedure (MPEP). You can download the PDF version or visit the HTML version.

It is useful to differentiate "technical" rejections and rejections for lack of utility, novelty or obviousness.

Technical rejections

Technical rejections are:

1. non−compliance to writing rules like wrong claim numbering,
2. lack of enablement,
3. non−statutory subject matter: nowadays examiners apply again the Toma test, which consists in checking whether the invention is within the technological arts, and whether the invention produces a useful, concrete and tangible result; the MPEP also says: "[a]n invention that is not a machine, an article of manufacture, a composition or a process cannot be patented",
4. lack of adequate written description.

In case of "technical" rejections the examiner just reads the law and the relevant case laws. So the applicant must amend the application to address such rejections. Usually amending the claims is enough. In case of lack of enablement or of adequate written description the applicant may have to amend the description, which is more annoying. A description change may change the application s subject matter. In case of dispute a court may find that the actual priority date is the date at which the change was made and not the date at which the application (or its parent) was filed.

Utility rejections

Utility rejections are governed by MPEP 2107.01. "Deficiencies under the 'useful invention' requirement of 35 U.S.C. 101 will arise in one of two forms":

1. "when an applicant fails to identify any specific and substantial utility for the invention or fails to disclose enough information about the invention to make its usefulness immediately apparent to those familiar with the technological field of the invention",
2. when "an assertion of specific and substantial utility for the invention made by an applicant is not credible".

Utility rejections are close to technical rejections. Applicants amend applications to address such rejections in the same way as they amend applications to address technical rejections.

Novelty rejections

The applicant must list the prior art (patents, printed publications) relevant for the application. Even if the examiner may find other prior art, this is important because (1) "while the presentation at trial of a reference that was not before the examiner does not change the presumption of validity [see 35 USC 282], the alleged infringer s burden may be more easily carried because of this additional reference" (2) a missing reference can raise a substantial question of patentability and therefore allow a re−examination to be ordered. So an alleged infringer can more easily demonstrate that the patent is invalid if the applicant omits relevant prior art in his reference list.

When the examiner finds that a claim is not novel, he writes that this claim is anticipated by a given prior art

(usually a patent or an older patent application). It may be the consequence of a misunderstanding that the applicant can clarify in his answer. If it is not the applicant has no choice but to substantially modify the claim limitations.

Obviousness rejections

The most complex case is the case in which the examiner finds a claim obvious. Then he usually writes that the claim is unpatentable over a given prior art in view of this and this other prior arts. The complexity comes from the fact that obviousness is not so easy to determine for the examiner or to refute for the applicant.

35 USC 103 "Conditions for patentability; non−obvious subject matter" says: "A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made."

To find if a claim is obvious the examiner uses a Graham test that comes from the court reasoning in Graham v. McDeere. The dispute was about a plow effective in rocky or glacial soils. The patent described an apparatus permitting plow shanks to be pushed upward when they hit obstructions. The court first observed that "a number of spring−hinge−shank combinations are clamped to a plow frame, forming a set of ground−working chisels capable of withstanding the shock of rocks and other obstructions in the soil without breaking the shanks" and that "the prior art as a whole in one form or another contains all of the mechanical elements of the parent." Then the court identified two differences between the patent and the closest prior art and found that the essential difference between the patent and prior art results was that the patent allowed the shank to flex under stress for its entire length. The testimony of petitioners' experts showed that the flexing advantages flowing from the patent arrangement were not, in fact, a significant feature in the patent and the court further found that "certainly a person having ordinary skill in the prior art, given the fact that the flex in the shank could be utilized more effectively if allowed to run the entire length of the shank, would immediately see that the thing to do was what the inventor did, i. e., invert the shank and the hinge plate."

The court gave the following demonstration: "Even though the position of the shank and hinge plate appears reversed in the closest prior art, the mechanical operation is identical. The shank there pivots about the underside of the stirrup, which in closest prior art is above the shank. In other words, the stirrup in closest prior art serves exactly the same function as the heel of the hinge plate in the patent. The mere shifting of the wear point to the heel of the patent hinge plate from the stirrup of closest prior art − itself a part of the hinge plate − presents no operative mechanical distinctions, much less non−obvious differences."

So obviousness is shown if a person with ordinary skill in the art and the same motivation (for instance the same problem to solve) as the inventor would (not could) have made the invention, given the prior art.

Negotiation

The examiner and the applicant have different, conflicting objectives:

- The applicant wants to be granted a patent with the widest scope.
- The examiner must allow only legitimate claims.

An examination history is made of rejections, answers and amendments. The combination of conflicting objectives and of a cycle of proposals, rejections and amended proposals clearly denotes that an examination is a negotiation. Though applicants may sometimes misuse the examination procedures to wear out examiners, such negotiation is the simplest way to pass through knowledge and cultural barriers to achieve a common understanding. The patent attorney who represents the inventors may involve his client s experts to address the strongest objections. The examiner also needs the applicant s answers to familiarize with the invention domain.

The examiner and the applicant are required to cite relevant articles.

As we have seen most rejections (lack of adequate written description, lack of novelty, obviousness) relate to claims. In such cases the examiner and the applicant analyze specific claims, may interpret the claim language, and discuss of means plus function claim limitations. For novelty and obviousness rejections the examiner and the applicant also comment, quote and construe prior art.

Estoppel

Using essentially the same means to achieve essentially the same result is counterfeiting. This is called the doctrine of equivalents. However this doctrine of equivalents cannot apply when, to be granted a patent, the applicant amended his claims and gave in his remarks a narrow meaning to some words. This is called estoppel. Generally speaking, if someone states that something is so and, in reliance upon that statement, another person acts in a particular way, possibly to her detriment, then the person who made the statement is prevented, or estopped, from denying the correctness of the statement which she originally made. If the applicant could use without restriction the doctrine of equivalents for an amended claim he would deny the correctness of the amendment, which allowed the examiner to grant the patent.

The consequence is that the doctrine of equivalents widens the patent scope in a way that can be deduced only from the patent reading. To see to which extent a claim can benefit of the doctrine of equivalents the public must also read the examination documents. When they find that the examiner objected to a claim people must appreciate the objection and the claim amendment. If the applicant had to be more specific on some aspect then he is estopped on this aspect, which means that a process or system that only differs from the patent by this aspect does not infringe the patent.

I discussed the doctrine of equivalents in the patent search page and in the business method page.

Final / non−final rejection

A rejection may be non−final or final. A final rejection ends a cycle of examination. When he gets a final rejection the applicant can:

1. abandon the application,
2. request a face−to−face or telephonic interview with the examiner,
3. make a request for continued examination (RCE),
4. file a continuation application,
5. file a continuation in part application,
6. appeal.

Abandon

There are four ways to abandon an application:

1. Formally abandon the application with an express or formal abandonment letter.
2. Fail to take appropriate action at some stage in the prosecution of a non−provisional application. A certain period is given to the applicant to reply to USPTO actions (for instance rejections). The applicant must either reply within the period or ask for an extension of time (in which case he has to pay an extra fee). Otherwise the application is removed from the Office docket of pending applications and therefore abandoned. The examiner should notify the applicant that the application has been abandoned by using Notice of Abandonment form PTOL−1432.
3. Fail to pay a fee
4. Fail to file a non−provisional application less than one year after the filing date of a provisional application.

Interview

The interview procedure is explained in 37 C.F.R. § 1.133(b): "In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office actions as specified in §§1.111 and 1.135."

An interview is the opportunity for the applicant and the examiner to clear up a misunderstanding. Examination interviews exist because of the weaknesses of written formal communication: documents are big, detailed and unable to stress on key points. The examiner and the applicant repeat themselves in their successive rejections and replies. The problem with interviews is that the public (and the parties in a later litigation) has no access to them and cannot appreciate the reasoning and the concessions made by the applicant. In ENDING ABUSE OF PATENT CONTINUATIONS Mark A. Lemley and Kimberly A. Moore wrote: "Unlike the rest of the prosecution history, which involves written correspondence and is therefore carefully documented, the interview is not transcribed and the interview summary that is completed by the examiner is often cryptic and uninformative." For the public this is frustrating. They see little progress toward an agreement throughout the prosecution, up to the interview, in which the application is suddenly allowed for

issuance of a patent.

Filing date

RCEs and continuation applications allow applicants to keep the benefit of the filing date of the first application. 35 U.S.C. 120 says:

"An application for patent for an invention disclosed in the manner provided by the first paragraph of section 112 of this title [35 USC §112] in an application previously filed in the United States, or as provided by section 363 of this title [35 USC §363], which is filed by an inventor or inventors named in the previously filed application shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed before the patenting or abandonment of or termination of proceedings on the first application or on an application similarly entitled to the benefit of the filing date of the first application and if it contains or is amended to contain a specific reference to the earlier filed application."

The US patent system endorses a model in which first an invention is made and then inventors file a patent application for this invention. According to this model, when two persons or two companies make the same invention this is the person or the company which invent first that is granted a patent and not, as in most countries, the person or the company which first filed a patent application.

However, as you can see in the Patent Search page and in the Business Method page, this model does not represent the reality in most cases:

- Individual inventors cannot support the huge development and experimentation costs needed to invent. They rather identify areas uncovered by prior art in rapidly developing domains.
- Corporate inventors want to get patents for significant development efforts and to complement a patent portfolio regardless of the novelty and inventiveness of these efforts (proprietarian model).

The burden of proving that the invention was made at a certain time is on the applicant. The affidavit of a person who has an interest in the invention business is not acceptable. The testimony of a corporate employee or of a contractor who is making a substantial part of his business with the applicant is as reliable as the testimony of a mother in a crime trial. Therefore the applicant usually cannot demonstrate that he made the invention at a certain date and the patent system uses the filing date. The patent system provides two means to address this issue:

1. The grace period. The applicant can publish the invention up to one year before filing the application. To use this method the applicant has to be sure to be able to file the application in the year. Later the publication will be public prior art and he won t be allowed to patent his invention.
2. The provisional application.

Provisional applications are defined in 35 USC 111: "Such application shall include:

1. a specification as prescribed by the first paragraph of section 112 of this title; and
2. a drawing as prescribed by section 113 of this title."

35 USC 111 further says: "A claim, as required by the second through fifth paragraphs of section 112, shall not be required in a provisional application."

These are minimal requirements. A design document or a feasibility study explaining the goal of a product, presenting its components and containing drawings is a valid provisional application for a software or a business method patent. A provisional application requiring almost no work (the applicant just has to fill the cover sheet reproduced at the end of 201.04(b) and to sign a check), a company has no excuse to not file it just after making the invention. Most provisional applications are of this sort. [Provisional applications are therefore useful for business intelligence or to understand the applicant motivation. Note that, for international applications designating a European country, if you do not find the provisional application in the USPTO site, you may try to find the "Priority document" on the EPO site.]

The model assumes that inventions are mind works existing on their own whose implementations cannot cover all the ways of practicing them and specifications are necessarily imperfect. An imperfect specification can be improved. So the US patent system logically provides means to improve specification while keeping the filing date, which are reissues, continuation and division applications. For instance inventors of software patents claimed in 1993 client / server systems. After the Web advent they filed continuation and divisional applications claiming Web application systems. The subject matter of their inventions was to display a certain sequence of forms using certain data and computations to achieve some purpose and not client / server programming which was known art. In Kingsdown Medical Consultants v. Hollister, the Federal Circuit further explained:

"It should be made clear at the outset of the present discussion that there is nothing improper, illegal or inequitable in filing a patent application for the purpose of obtaining a right to exclude a known competitor s product from the market; nor is it in any manner improper to amend or insert claims intended to cover a competitor s product the applicant s attorney has learned about during the prosecution of a patent application. Any such amendment or insertion must comply with all statutes and regulations, of course, but, if it does, its genesis in the marketplace is simply irrelevant and cannot of itself evidence deceitful intent."

I consider the different forms of continuations in the next sections. In this section I consider reissues and division applications.

The section 201.6 of the MPEP says: "A later application for an independent or distinct invention, carved out of a pending application and disclosing and claiming only subject matter disclosed in the earlier or parent application, is known as a divisional application or division." To say it in a different way when the claims of a continuation cover essentially the same scope as the original application in a more appropriate way, a division application consists in reusing the stuff of the application description with claims covering a different scope. For instance MercExchange filed a divisional application that eventually was granted as 6,202,051 for a system "facilitating internet commerce through internetworked auctions" whereas the original application (subsequently 5,845,265) was about a consignment nodes system.

A reissue application is an application for a patent to take the place of an unexpired patent that is defective in some one or more particulars. The maximum term of the original patent is fixed at the time the patent is granted. While the term may be subsequently shortened, e.g., through the filing of a terminal disclaimer, it cannot be extended through the filing of a reissue. 37 CFR 1.173 says: "An application for reissue must contain the entire specification, including the claims, and the drawings of the patent. No new matter shall be

introduced into the application. No reissue patent shall be granted enlarging the scope of the claims of the original patent unless applied for within two years from the grant of the original patent."

RCE

The request for continued examination procedure was created precisely to allow applicants to reopen the examination of an application after a final rejection "by the simple expedient of paying a fee".

Continuation

A continuation application is a "second application for the same invention claimed in a prior non−provisional application and filed before the original prior application becomes abandoned or patented."

Continuation in part

A continuation−in−part application is a new "application filed during the lifetime of an earlier non−provisional application, repeating some substantial portion or all of the earlier non−provisional application and adding matter not disclosed in the said earlier non−provisional application."

Appeal

35 U.S.C. 134 says: "An applicant for a patent, any of whose claims has been twice rejected, may appeal from the decision of the administrative patent judge to the Board of Patent Appeals and Interferences" by filing a notice of appeal. Then the applicant must file an appeal brief as described in 37 CFR 1.192.

The reasoning is as follows. The USPTO makes many decisions of a discretionary nature which the applicant may feel deny him the patent protection to which he is entitled. The differences of opinion on such matters can be justly resolved only by prescribing and following judicial procedures. Where the differences of opinion concern the denial of patent claims because of prior art or material deficiencies in the disclosure set forth in the application, the questions thereby raised relate to the merits, and appeal procedure within the Office and to the courts is handled by a Board of Patent Appeals and Interferences (BPAI) which includes the Director, the Commissioner for Patents, the Commissioner for Trademarks, and administrative patent judges appointed by the Director. If they do not relate to the merits the questions thereby raised are petition−able matters for the Commissioner of Patents.

Re−examination

Re−examination is an alternative to litigation in the Federal Courts, allowing invalidating a patent like a court, but at a cost lower than Court proceedings, and with an expedited procedure.

There are two types of re−examination:

1. Ex parte re−examination called as such because only the patent owner and the USPTO participate to the re−examination. Ex−parte re−examination exists since 1980 and is the most frequently used re−examination procedure.
2. Inter partes re−examination called as such because third parties may participate in re−examination proceedings. Inter partes re−examination exists since 1999.

In this section we focus on ex parte re−examination. The 2201 section of the MPEP contains a flowchart showing its proceedings. 37 C.F.R. 1.510 explains how to request a re−examination: "Any person may, at any time during the period of enforceability of a patent, file a request for reexamination by the Patent and Trademark Office of any claim of the patent on the basis of prior art patents or printed publications."

For a re−examination to be ordered the requester must have raised substantial new questions of patentability notably based on prior patents and printed publications that were not discussed or that were improperly presented in the examination. If the re−examination is ordered the patent owner is expected to make a statement as specified by 37 C.F.R. 1.530 (b) that reads "the order for reexamination will set a period of not less than two months from the date of the order within which the patent owner may file a statement on the new question of patentability including any proposed amendments the patent owner wishes to make" and (c) that says that "any statement filed by the patent owner shall clearly point out why the subject matter as claimed is not anticipated or rendered obvious by the prior art patents or printed publications, either alone or in any reasonable combinations."

The examiner examines the patent in light of the prior art patents or printed publications submitted in the re−examination request. He can issue actions and final actions that are like rejections and final rejections. The patent owner replies to an action like he would reply to a rejection with remarks and amendments. A final rejection closes the prosecution. To avoid the invalidation of the patent (or at least of a part of its claims) the patent owner may use the appeal procedure described above.

Burden of proof

In the patent office, the burden of proof is on the examiner to show why an invention does not deserve patent protection. In court, the burden of proof is on the alleged infringer to prove that a patent is not valid, and in the re−examination, the burden is on the patent office.

EPO

http://www.european−patent−office.org/new_hp/tb_applic/index.htm contains:

- The European Patent Convention. The most important part is IMPLEMENTING REGULATIONS TO THE CONVENTION ON THE GRANT OF EUROPEAN PATENTS.
- Case Law of the Boards of Appeal, in which is explained for instance the inventive step test.
- Guidelines for examination in the EPO, whose function is close to the function of MPEP for USPTO.

The EPO provides a free tool, PatXML to write patent applications.

Writing rules

A European patent must contain:

- a description,
- claims,
- an abstract.

Abstract

According to Article 85 of European Patent Convention, "the abstract shall merely serve for use as technical information; it may not be taken into account for any other purpose, in particular not for the purpose of interpreting the scope of the protection sought nor for the purpose of applying Article 54, paragraph 3".

Rule 33 defines the form and content of the abstract:

1. The abstract shall indicate the title of the invention.
2. The abstract shall contain a concise summary of the disclosure as contained in the description, the claims and any drawings; the summary shall indicate the technical field to which the invention pertains and shall be drafted in a way which allows the clear understanding of the technical problem, the gist of the solution of that problem through the invention and the principal use or uses of the invention. The abstract shall, where applicable, contain the chemical formula which, among those contained in the application, best characterises the invention. It shall not contain statements on the alleged merits or value of the invention or on its speculative application.
3. The abstract shall preferably not contain more than one hundred and fifty words.
4. If the European patent application contains drawings, the applicant shall indicate the figure or, exceptionally, the figures of the drawings which he suggests should accompany the abstract when the abstract is published. The European Patent Office may decide to publish one or more other figures if it considers that they better characterise the invention. Each main feature mentioned in the abstract and illustrated by a drawing shall be followed by a reference sign, placed between parentheses.
5. The abstract shall be so drafted that it constitutes an efficient instrument for purposes of searching in the particular technical field particularly by making it possible to assess whether there is a need for consulting the European patent application itself."

The fifth sub−paragraph relates to the fact that the EPO public site indexes the title and the abstract but not the claims and the description. Therefore you can search for strings in the title or abstract but not in the claims and in the description. On the other hand you can get reliable results in searches for assignee, which is not the case for the USPTO.

Claims

Rule 29 says: "The claims shall define the matter for which protection is sought in terms of the technical features of the invention. Wherever appropriate claims shall contain:

1. a statement indicating the designation of the subject−matter of the invention and those technical features which are necessary for the definition of the claimed subject−matter but which, in combination, are part of the prior art;
2. a characterising portion − preceded by the expression "characterised in that" or "characterised by" − stating the technical features which, in combination with the features stated in first sub−paragraph, it is desired to protect."

Description

Rule 27 defines the content of the description:

"The description shall:

1. specify the technical field to which the invention relates;
2. indicate the background art which, as far as known to the applicant, can be regarded as useful for understanding the invention, for drawing up the European search report and for the examination, and, preferably, cite the documents reflecting such art;
3. disclose the invention, as claimed, in such terms that the technical problem (even if not expressly stated as such) and its solution can be understood, and state any advantageous effects of the invention with reference to the background art;
4. briefly describe the figures in the drawings, if any;
5. describe in detail at least one way of carrying out the invention claimed using examples where appropriate and referring to the drawings, if any;
6. indicate explicitly, when it is not obvious from the description or nature of the invention, the way in which the invention is capable of exploitation in industry;
7. the description shall be presented in the manner and order specified in paragraph 1, unless because of the nature of the invention, a different manner or a different order would afford a better understanding and a more economic presentation."

The description of a European application may contain:

- An invention title, like in a USPTO application. This title should clearly and concisely state the technical designation of the application and should exclude elaborate names. The maximum number of characters allowed is 250.
- A technical field, like in a USPTO application.
- The background art, the same thing as the background information of a USPTO application. Indicates the background art which, as far as known to the applicant, can be regarded as useful for understanding the invention, for drawing up the European search report and for the examination, and, preferably, cite the documents reflecting such art.
- A disclosure of invention. Discloses the invention, as claimed, in such terms that the technical problem (even if not expressly stated as such) and its solution can be understood, and state any advantageous effects of the invention with reference to the background art.
- A description of drawings in a USPTO application.
- A best mode, the same thing as the preferred embodiment of a USPTO application. Describes in detail at least one way of carrying out the invention claimed using examples where appropriate and referring

to the drawings, if any.
- A statement about the industrial applicability of the invention. Indicate explicitly, when it is not obvious from the description or nature of the invention, the way in which the invention is capable of exploitation in industry.

PatXML suggests calling other embodiments "Mode(s) for carrying out an invention".

Prosecution history

Consult the patent search page to see how to display the prosecution history of a European patent.

You should get something like this:

Date	Documents for publication number EPxxxxxxx
2004−03−24	Means of redress
2004−03−24	Grounds for the decision (Annex)
2004−03−24	Decision to refuse the application (Article 97(2) EPC)
2004−02−09	Annex to the communication
2004−02−09	Despatch minutes oral proceedings
2004−02−08	Consultation by phone/personal
2004−02−08	Result of personal/telephone consultation
2004−01−06	Letter pursuant to Rule 71a EPC and all other letters during oral proceedings
2004−09−28	Summons to attend oral proceedings
2004−09−28	Annex to the communication
2004−09−18	Preparation for oral proceedings
2004−05−13	Reply to examination report
2004−05−13	Description
2004−05−13	Claims
2004−05−12	Documents concerning the inventorship
2004−03−26	Annex to the communication
2004−03−26	Examination report
2004−02−24	Request to communicate correct address of inventor
2004−02−13	Request to communicate correct address of inventor
2004−02−11	Communication regarding amendment/payment of CLMS (Rule 109 EPC)
2004−02−10	Letter which had not been notified
2004−01−28	Letter which had not been notified
2004−01−28	Info on forthcoming publication bibliographic data
2003−07−18	Request to enter regional phase (EPCT)
2002−12−05	International publication pamphlet
2002−12−05	Copy of the International Search report
2001−05−30	General authorisation

This prosecution history is actually a merger of two prosecution histories.

As you can see many entries relates to procedures (inventor names, fees). In the case above the examiner made objections in his examination report. Then the applicant amended the claims and description and replied to the examination report. The examiner found that either the applicant answer did not properly address the report objections or that amended claims raised new objections. Next the EPO scheduled oral proceedings. The applicant failed then to convince the examiner. The examiner refused the application.

Search

In Europe the applicant does not have to cite relevant prior art. The EPO lists references in a search report, which is a prerequisite for the examination. This search report is not established and a "Declaration of Non Establishment of International Search Report" is issued if the subject−matter of the application is excluded from patentability under Article 52:

"§1 European patents shall be granted for any inventions which are susceptible of industrial application, which are new and which involve an inventive step.

§2 The following in particular shall not be regarded as inventions within the meaning of paragraph 1

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

§3 The provisions of paragraph 2 shall exclude patentability of the subject−matter or activities referred to in that provision only to the extent to which a European patent application or European patent relates to such subject−matter or activities as such."

Note:

§3 means that you cannot patent a software or a business method invention only when its subject matter is a program, scheme, rule and method for performing mental acts.

"The European search report is drawn up on the basis of the claims with due regard to the description and any drawings. It mentions those documents available to the EPO at the time of drawing up the report which may be taken into consideration in assessing novelty and inventive step."

A report is a table with three columns:

1. The category. The most important categories are X that means "document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone" or "particularly relevant if taken alone" and Y "document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the

document is combined with one or more search documents, such combination being obvious for a person of the art" or "particularly relevant if combined with another document of the same category".
2. The citation, for instance a patent number, the section and the page(s) in the patent specification or the URL of a document on the Web.
3. Relevant to claims no., which lists the claims for which this prior art is relevant.

You may feel that a search report with Xs and Ys is a kind of first non−final rejection, X meaning most of the time a rejection for lack of novelty and Ys paving the way for a rejection for obviousness over Y1 in view of Y2, Y3... When he receives the search report, the applicant can:

- withdraw his application, or
- file a preliminary amendment to the description, claims or drawings, and / or
- file substantive comments on the search report.

However "the European search report does not contain reasons and expresses no opinion whatever as to the patentability of the invention covered by the application." The examiner does not have to follow the search report and he can find other prior art. He also has to give reasons and to express opinion about the patentability of the invention.

Publication

The article 67 (1) of the European Patent Convention says:

"A European patent application shall, from the date of its publication under Article 93, provisionally confer upon the applicant such protection as is conferred by Article 64, in the Contracting States designated in the application as published"

where article 64 says:

"A European patent shall [...] confer on its proprietor from the date of publication of the mention of its grant, in each Contracting State in respect of which it is granted, the same rights as would be conferred by a national patent granted in that State"

and article 93 says:

1. "A European patent application shall be published as soon as possible after the expiry of a period of eighteen months from the date of filing or, if priority has been claimed, as from the date of priority. Nevertheless, at the request of the applicant the application may be published before the expiry of the period referred to above. It shall be published simultaneously with the publication of the specification of the European patent when the grant of the patent has become effective before the expiry of the period referred to above.
2. The publication shall contain the description, the claims and any drawings as filed and, in an annex, the European search report and the abstract, in so far as the latter are available before the termination of the technical preparations for publication. If the European search report and the abstract have not been published at the same time as the application, they shall be published separately."

So the publication of a European patent application is not correlated to the search or to the examination result. It may happen before or after the search and before or after a patent has been granted. Article 64 shows an interesting aspect of EPO: European law does not replace the patent law of member states [litigations are still ruled by the courts of member states]. In the EPO framework a State only has to agree to confer to European patents the same rights as it confers to its national patents. Publication is important for two reasons:

1. It allows other parties to analyze the application. They have sufficient time to prepare an opposition.
2. It confers to the applicant a provisional protection.

Article 93 talks about the date of priority. This date is described in article 88 of the EPC, which says:

"An applicant for a European patent desiring to take advantage of the priority of a previous application shall file a declaration of priority, a copy of the previous application and, if the language of the latter is not one of the official languages [English, French, German] of the European Patent Office, a translation of it in one of such official languages. The procedure to be followed in carrying out these provisions is laid down in the Implementing Regulations.

The applicant may file its application in his national patent office. Then the priority document is made of a form filled by the national patent office that says that the application was filed at a certain date and of this original application. For an American application that is extended to European countries the process is essentially the same. The priority document is made of the first application (for instance a provisional application) and of a form filled by the USPTO that says that this first application was filed at a certain date.

Examination

When he received the search report the applicant files an examination request. This request starts the examination procedure. The guiding principle of this procedure is that a decision on whether to grant a patent or refuse the application should be reached in as few actions as possible.

When the examiner has objections to the application, he sends reasoned communications (written opinions) inviting the applicant to file his observations and, if necessary, to submit amendments to the description, claims and drawings. Reasoned communication is described by the communication with the applicant article of the examination procedure (VI.2.4), which reads: "Taking into account the documents (if any) cited in the search report and any further documents found as the result of the search referred to in VI.2.3 above, and taking account also of any amendments proposed, or comments made, by the applicant, the examiner should identify any requirements of the EPC which, in his opinion, the application does not satisfy. He will then write to the applicant giving reasons for any objections he raises and inviting the applicant within a specified period to file his observations or submit amendments."

When the applicant has replied, the examiner will then re−examine the application. If re−examination shows that there are good prospects of bringing the proceedings to a positive conclusion, i.e. in the form of a decision to grant and there are still objections to be met, the examiner must consider whether they can best be resolved by a further written communication, a telephone discussion or a personal interview. When the telephone is used to settle outstanding matters, a note must be made in the prosecution file, giving particulars and identifying the matters discussed and any agreements reached. Any matters on which agreement was not

reached should also be noted and the arguments adduced by the applicant should be summarised. Such telephone discussions and personal interviews are informal procedures to not confuse with oral proceedings.

The applicant may at any time request oral proceedings. Article 116 EPC says: "Oral proceedings shall take place either at the instance of the European Patent Office if it considers this to be expedient or at the request of any party to the proceedings." The conduct of oral proceedings is described in the examination guidelines III.8.

The rest of the examination procedure is well described in the Part one of the Guide of applicant (http://www.european−patent−office.org/legal/guiapp1/pdf/g1en_net.pdf) which reads:

- "[161] The examiner may seek the advice of other members of the examining division whenever he sees fit. At the latest he will refer the application to them when a decision [grant or refuse) has to be taken."
- "[162] If the examining division is of the opinion that a European patent cannot be granted, it will refuse the application." The decision is issued by the examining division and not by the examiner only.
- "[163] If the application and the invention to which it relates meet the requirements of the Convention, the examining division will decide to grant a European patent provided that the requisite fees have been paid in due time and a translation of the claims in the other two official languages of the EPO has been filed in due time."

Note:

Now applicants also have the option of foregoing detailed preliminary examination. In such cases, the same examiner will carry out the search and the examination and the written opinion will be based on the examiner's search notes. The written opinion will therefore confine itself to core issues of novelty, inventive step and industrial applicability. The applicant will, however, have the opportunity of requesting a more detailed international preliminary examination if it chooses and this can be done up to the date for responding to the written opinion.

We list now the most important objections.

Amendment objections

The article 123 EPC says:

1. "The conditions under which a European patent application or a European patent may be amended in proceedings before the European Patent Office are laid down in the Implementing Regulations. In any case, an applicant shall be allowed at least one opportunity of amending the description, claims and drawings of his own volition.
2. A European patent application or a European patent may not be amended in such a way that it contains subject−matter which extends beyond the content of the application as filed.
3. The claims of the European patent may not be amended during opposition proceedings in such a way as to extend the protection conferred."

Note:

Part C VI.5 of the Guideline for examination describes amendments. The most interesting section is VI.5.3 Additional subject matter, which says:

- "There is normally no objection to an applicant introducing, by amendment, further information regarding prior art which is relevant; indeed this may be required by the examiner (see II, 4.3 and II 4.18). Nor will the straightforward clarification of an obscurity or the resolution of an inconsistency be objected to."
- "An amendment should be regarded as introducing subject−matter [...], and therefore unallowable, if the overall change in the content of the application (whether by way of addition, alteration or excision) results in the skilled person being presented with information which is not directly and unambiguously derivable from that previously presented by the application, even when account is taken of matter which is implicit to a person skilled in the art."

Obviousness objections

"Determining whether or not the invention involves an inventive step depends on the specific details of each patent application and in particular the subject−matter of each claim. According to the circumstances, various factors are taken into account, such as:

- the unforeseen technical effect produced by a new combination of known elements,
- selection of particular operating conditions within a known range,
- the degree of difficulty the person skilled in the art must overcome when combining several known documents,
- and secondary considerations such as the fact that the invention solves a long−standing technical problem which there have been many attempts to solve."

The examiner uses a "problem−and−solution approach". In this approach, there are three main stages:

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.

"The closest prior art is that combination of features, disclosed in one single reference, which constitutes the most promising starting point for an obvious development leading to the invention. In selecting the closest prior art, the first consideration is that it should be directed to a similar purpose or effect as the invention or at least belong to the same or a closely related technical field as the claimed invention. In practice, the closest prior art is generally that which corresponds to a similar use and requires the minimum of structural and functional modifications to arrive at the claimed invention."

The objective technical problem means the aim and task of modifying or adapting the closest prior art to provide the technical effects that the invention provides over the closest prior art. This problem may not be what the applicant presented as "the problem" in his application. To establish the technical problem to be

solved the examiner studies the application, the closest prior art and the difference, also called "the distinguishing feature(s)" of the invention, in terms of features (either structural or functional) between the invention and the closest prior art. Features which cannot be seen to make any contribution, either independently or in combination with other features, to the solution of a technical problem are not relevant for assessing inventive step.

The examiner can reject an application just because its distinguishing features contribute to the solution of a problem in a field excluded from patentability. This means that it is not enough for an application to belong to a patentable field. The delta between the application and the closest prior art must also belong to a patentable field.

To check if the claimed invention, starting from the closest prior art and the objective technical problem, would have been obvious to the skilled person, the question to be answered is not whether the skilled person could have arrived at the invention by adapting or modifying the closest prior art, but whether he would have done so because the prior art incited him to do so in the hope of solving the objective technical problem or in expectation of some improvement or advantage. This is called the Could−would approach.

Chapter IV of the Examination guidelines gives "Examples relating to the Requirement of Inventive Steps". These examples are illustrative, their list is not exhaustive and examiners are said to "avoid attempts to fit a particular case into one of these examples if it is not clearly applicable." These examples are entitled:

1. Application of known measures? An inventive step is recognized when a known working method or means when used for a different purpose involves a new, surprising effect or when a new use of a known device or material involves overcoming technical difficulties.
2. Obvious combination of features? An inventive step is recognized when the combined features mutually support each other in their effects to such an extent that a new technical result is achieved.
3. Obvious selection? An inventive step is recognized when the invention involves special selection in a process of particular operating conditions within a known range, such selection producing unexpected effects in the operation of the process or the properties of the resulting product.
4. Overcoming a technical prejudice? There is an inventive step if the prior art leads the person skilled in the art away from the procedure proposed by the invention.

Novelty objections

With the problem−and−solution approach lack of novelty is usually the special case in which the invention is identical to the closest prior art. However this is not always true.

The content of European patent applications filed prior to the date of filing or priority date and published on or after that date is considered as comprised in the state of the art and therefore prejudicial to novelty but not for inventive step. The content of the earlier application(s) as disclosed is referred to for assessing novelty but is not considered in deciding whether there has been an inventive step in the later application.

Opposition

A document entitled EPO OPPOSITIONS reads: "The European Opposition system provides a central inter partes revocation mechanism for revoking, or limiting, European patents in all designated states, after grant. [...] An unsuccessful Opposition does not usually close the possibility of a further attack in each designated state, but a successful Opposition is final and cannot be overturned in the designated states." The opposition procedure is described in the part V of the European Patent convention.

Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. There can be more than one opponent. Opponents are parties to the opposition proceedings as well as the proprietor of the patent. In that respect inter partes re−examinations are like oppositions.

In the event of an opposition to a European patent being filed, any third party who proves that proceedings for infringement of the same patent have been instituted against him may, after the opposition period has expired, intervene in the opposition proceedings, if he gives notice of intervention within three months of the date on which the infringement proceedings were instituted. The same shall apply in respect of any third party who proves both that the proprietor of the patent has requested that he cease alleged infringement of the patent and that he has instituted proceedings for a court ruling that he is not infringing the patent [Art 105(1) EPC].

Grounds for opposition are listed in the Article 100 EPC:

1. "the subject−matter of the European patent is not patentable within the terms of Articles 52 to 57 [patentability];
2. the European patent does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art [enablement];
3. the subject−matter of the European patent extends beyond the content of the application as filed, or, if the patent was granted on a divisional application or on a new application filed in accordance with Article 61, beyond the content of the earlier application as filed. [~ adequate written description]"

The opponent gives notice of opposition in a written reasoned statement that states at least one ground for opposition under Article 100 and indicates the facts, evidence and arguments presented in support of the ground. After receiving the notice of opposition, the EPO communicates it to the proprietor and checks that it is admissible. Then the patent proprietor is invited to file observations and, where appropriate, amendments. The opposition works the same way as the examination with differences related to the fact that instead of two parties (the applicant and the examiner) an opposition involves at least three parties (the proprietor, the opponent and the examiner):

- The examiner, opponent and the proprietor send reasoned communications (written opinions).
- The proprietor may submit amendments to the description, claims and drawings.

But

- Informal procedures such as telephone discussions and personal interviews are forbidden. Parties can only use the formal oral proceeding procedure.
- Amendments are allowed only if they are occasioned by grounds for opposition, including grounds

not invoked by the opponent.

At the end of the opposition procedure, if the Opposition Division is of the opinion that

1. the grounds for opposition prejudice the maintenance of the European patent, it revokes the patent;
2. the grounds for opposition do not prejudice the maintenance of the patent un−amended, it rejects the opposition;
3. taking into consideration the amendments made by the proprietor of the patent during the opposition proceedings, the patent and the invention to which it relates meet the requirements of this Convention, it maintains the patent as amended.

Appeal

The appeal procedure is described in the part VI of the European Patent convention. Appeals are handled by a Board of Appeal whose members are independent. There are actually different types of board of appeals:

- The technical boards of appeal are responsible for appeals against decisions of the examining divisions concerning the refusal of European patent applications or the granting of European patents and for appeals against decisions of the opposition divisions. They normally consist of three members (two technically qualified and one legally qualified).
- The legal board of appeal deal with appeals against decisions of the Receiving Section and the Legal Division. They consist of three legally qualified members.
- The Enlarged Board of Appeal deal with cases referred by the other boards of appeal to ensure uniform application of the law and rule important points of law.

Any party to proceedings [the most important proceedings being the examination and the opposition] adversely affected by a decision may appeal. Any other parties to the proceedings shall be parties to the appeal proceedings as of right [in case of opposition appeal the proprietor and the opponent are parties to the appeal] [Article 107 EPC]. Notice of appeal must be filed in writing at the European Patent Office within two months after the date of notification of the decision appealed from. Within four months after the date of notification of the decision, a written statement setting out the grounds of appeal must be filed. An appeal has suspensive effect, which means that the contested decision does not yet become final and its effects are suspended.

In the examination of the appeal, the Board of Appeal invite the parties, to file observations. Like examination and opposition appeals are mostly conducted by written procedure prompting parties to send reasoned communications.

Burden of proof

The general rule is that "if a material fact is not or cannot be proven, a decision is taken on the basis of who carries the relevant burden of proof: the fact that the real position cannot be established operates to the detriment of the party which carries the burden of proof for this fact."

It means that:

1. In examination proceedings, if the applicant showed sound reasons for doubting whether a cited document belonged to the state of the art, the examiner should not pursue the matter further when any further investigation did not produce evidence sufficient to remove that doubt.
2. In opposition proceedings, "the patent proprietor is given the benefit of the doubt if the parties make contrary assertions regarding facts barring patentability which they cannot substantiate and, furthermore, the EPO is unable to establish the facts of its own motion.
3. In appeal proceedings, "the party's status as opponent makes no difference when it comes to assigning the burden of proof." So while in opposition proceedings, the burden of proving that the objections [...] have been substantiated lay with the opponent [...], once the opposition division had decided to revoke the patent, the burden shifted to the proprietor of the patent, who had to demonstrate on appeal that the reasons for revoking the patent were not sound."

Divisional application

"The usual reason for filing a European divisional application is that the parent application does not satisfy the requirements as to unity of invention and the applicant is not content with limiting it [Guide for applicants 199].

"A divisional application may be filed only for subject−matter which does not extend beyond the content of the parent application as filed. [...] It is deemed to have the same date of filing and priority date as the parent application [Guide for applicants 199]."

Differences with USPTO

Unity of invention

Rule 30 says "Where a group of inventions is claimed in one and the same European patent application, the requirement of unity of invention referred to in Article 82 shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" shall mean those features which define a contribution which each of the claimed inventions considered as a whole makes over the prior art."

Rule 29 further says "Without prejudice to Article 82, a European patent application may contain more than one independent claim in the same category (product, process, apparatus or use) only if the subject−matter of the application involves one of the following:

1. a plurality of inter−related products;
2. different uses of a product or apparatus;
3. alternative solutions to a particular problem, where it is not appropriate to cover these alternatives by a single claim.

This means in practice that European patent applications have fewer claims than their American counterparts and typically only one independent claim. If an application has unrelated independent claims the search examiner finds it, performs a prior art search only for the first independent claim and suggests to the applicant to file divisional applications if he wants to protect the subject matter of the other independent claims.

Inventorship

The American law endorses the principle that inventions are made by people and not by companies. An American patent lists inventors, their city and state but the assignee name and address are not necessarily the name and address of the company. They are commonly the name and address of the patent attorney. In Europe inventions are made by companies rather than by people. In a European patent the name of the company is necessarily correct. The list of inventors is usually as good as an American inventor list because European patents are usually also filed as PCT applications designating USA, and therefore include the inventor list that will be later used in USA.

Prior art disclosure

In USA the applicant must list the prior art (patents, printed publications) relevant for the application. Even if the examiner may find other prior art, this is important because (1) "while the presentation at trial of a reference that was not before the examiner does not change the presumption of validity [see 35 USC 282], the alleged infringer s burden may be more easily carried because of this additional reference" (2) a missing reference can raise a substantial question of patentability and therefore allow a re−examination to be ordered. So an alleged infringer can more easily demonstrate that the patent is invalid if the applicant omits relevant prior art in his reference list. Furthermore "patent applicants owe a duty of candor and good faith to the patent office and this duty exists throughout the entire prosecution of the patent. Breaching this duty may constitute inequitable conduct, which includes affirmative misrepresentation of a material fact, failure to disclose material information, or submission of false material information, coupled with an intention to deceive."

In Europe the prior art is listed in a search report produced by the patent office. So the applicant does not have to disclose the result of his prior art search. However, at the same time, the outcome of his application prosecution depends essentially on the closest art found by the office and on the difference between this closest prior art and his application.

Objective technical problem

A European examiner must establish the objective technical problem solved by the invention. The objective technical problem means the aim and task of modifying or adapting the closest prior art to provide the technical effects that the invention provides over the closest prior art. The objective technical problem is made of the distinguishing features and represents the remaining novelty of the invention. The objective technical problem may be the ground of two types of objections:

1. objections because the distinguishing features contribute to the solution of a problem in a field excluded from patentability;

2. obviousness objections.

In the American system there is no equivalent to the former type of objection. For obviousness the European and the American systems are quite similar. The American examiner also determines the remaining novelty. Then the European examiner uses a could−would approach, not very different from the Graham−Mc Deere test, to determine if the invention is obvious: "the question to be answered is not whether the skilled person could have arrived at the invention by adapting or modifying the closest prior art, but whether he would have done so because the prior art incited him to do so in the hope of solving the objective technical problem or in expectation of some improvement or advantage."

Refusal or grant

The article 97 of EPC says:

1. "The Examining Division shall refuse a European patent application if it is of the opinion that such application or the invention to which it relates does not meet the requirements of this Convention, except where a different sanction is provided for by this Convention.
2. If the Examining Division is of the opinion that the application and the invention to which it relates meet the requirements of this Convention, it shall decide to grant the European patent for the designated Contracting States..."

In Europe the decision to refuse a patent application or to grant a patent is taken by the examining division. In USA the examiner can issue a final rejection or a notice of allowance but this is not exactly the same thing. In Europe like in USA, there is an appeal procedure to cancel a refusal / final rejection but the American applicant also has several continuation procedures to continue a prosecution after a final rejection.

Opposition / re−examination

In EPO wording a re−examination is the task performed by the examiner after an applicant has replied to a written opinion / reasoned communication. The EPO procedure that is the closest to a USPTO re−examination is the opposition. However the European opposition and the American re−examination are different.

"The European opposition system is adversarial, initiated by any third party, usually a competitor. The patent may be challenged on any patentability grounds: novelty, inventive step, or industrial application and there is no limit on the kinds of evidence admissible. A European opposition is actually a peer review, which almost automatically (oppositions are more likely to be filed against important patents) ensures that the appropriate effort is made to check the quality of patents. It is not necessarily worth spending a large amount of time on each application when most will not be used and a patent office has limited resources (time, prior art databases...) to appreciate the novelty and inventiveness of a patent application. A European opposition has to be filed shortly after the patent grant (9 months) and its proceedings delay litigations. The idea is that a patent that faced oppositions and whose oppositions failed is almost necessarily a good quality patent.

"Any person may, at any time during the period of enforceability of a patent, file a request for reexamination by the Patent and Trademark Office of any claim of the patent on the basis of prior art patents or printed

publications." But as you can see in the examples below of ex parte re−examinations (PanIP and Eolas) the requester role is just to raise substantial new questions of patentability notably based on prior patents and printed publications that were not discussed or that were improperly presented in the examination. The only admissible evidence is prior patents and publications and the requestor cannot challenge a decision of the examiner (for instance in the Eolas re−examination, the requestor could not reuse the OLE patents and prior art). A re−examination may happen after a court decision. Then the requestor cannot challenge this decision either (for instance, again in the Eolas re−examination, the requestor could not reuse a Wei browser that could have anticipated the invention.) Then only the patent owner and the USPTO participate to the re−examination [ex parte re−examination].

About this issue you may also read

- "Post−Issue Patent Quality Controls : A Comparative Study of U.S. Patent Re−examinations and European Patent Oppositions", a PowerPoint presentation by Stuart Graham, Bronwyn H. Hall, Dietmar Harhoff and David Mowery;
- "The Global Nature of Intellectual Property: Discussion" by Bronwyn H. Hall.

Litigations

The EPO system looks superior. However, to put things in perspective I must briefly mention trials. The USPTO system is weaker partly because it has a strong litigation back end. The EPO has a very different background. In Europe:

- patent litigations are ruled by the courts of the member states according to their national law;
- a trial is much cheaper than in USA and usually passes unnoticed;
- the plaintiff, who does not expect to be awarded substantial damages, aims to stop the alleged infringer from using the patented invention.

PanIP re−examinations

These re−examinations were requested by the PanIP Group Defense Fund (PGDF) and by Debrand Fine Chocolates which was the most active member of the PGDF.

5,576,951

This re−examination takes place with an application number 90/006,625.

Request

The requesters found that claims 1−4 and 5−10 of 5,576,951 were anticipated by printed publications:

- an article "Comp−U−Store system could change retail economics" published in July 1983 in Direct Marketing, available in the prosecution history of 90/006,623 (see 6,289,319 re−examination);
- the conference records of a "Globecom 82 IEEE Global Telecommunications conference", published in December 1982, available in the prosecution history of 90/006,623 (see 6,289,319 re−examination);
- "Discount Store news, the Newspaper of the Discount Department Store Industry", published in February 1983, probably available in the prosecution history of 90/006,623 (see 6,289,319 re−examination);
- "Electronic Retailing − Emerging methods & Markets" by Walter Forbes, Comp−U−Card International, published in May 1983;
- "How Video will change the sale" by Ellen Kleinberg, Industrial Marketing, published in April 1981. Available in the prosecution history of 90/006,623 (see 6,289,319 re−examination).

I found this detailed list in a notice of references cited. These printed publications are not in the prosecution history of 90/006,625. I discuss their content in the section about the re−examination of 6,289,319.

Though 5,576,951 was filed on March 16, 1994 its priority date was May 24, 1984 because it was a continuation−in−part of a continuation of a continuation−in−part of a continuation−in−part of a continuation−in−part of an application. 5,576,951 contains 10 claims, two independent claims 1 and 10 and eight claims depending on claim 1. So requesters focused on claims 1 and 10 and compared elements of claims 1 and 10 to the corresponding structures in the cited printed publications. They found that all publications described all elements in claim 1 and 10.

Claim 1 claims a "computer search system for retrieving information, comprising:

- means for storing interrelated textual information and graphical information;
- means for interrelating said textual and graphical information;
- a plurality of entry path means for searching said stored interrelated textual and graphical information, said entry path means comprising:
- textual search entry path means for searching said textual information and for retrieving interrelated graphical information to said searched text;
- graphics entry path means for searching said graphical information and for retrieving interrelated textual information to said searched graphical information;
- selecting means for providing a menu of said plurality of entry path means for selection;
- automatic data processing means for executing inquiries provided by a user in order to search said textual and graphical information through said selected entry path means and for fetching data as a function of other data;
- indicating means for indicating a pathway that accesses information related in one of said entry path means to information accessible in another one of said entry path means;
- accessing means for providing access to said related information in said another entry path means; and
- output means for receiving search results from said processing means and said related information from said accessing means and for providing said search results and received information to such user."

Claim 10 claims a "computerized system for selecting and ordering a variety of information, goods and

services, which comprises:

- a plurality of computerized data processing installations programmed for processing orders for said information, goods and services;
- at least one computerized station, said station including:
- a micro−processor;
- a device for displaying graphical and textual material;
- at least one mass memory device controlled by said micro−processor;
- means for addressing at least one of said computerized data processing installations, and for sending thereto and receiving therefrom, coded messages and batches of data;
- program means for controlling the display on said display device of inquiries and acceptable answers;
- user operated means for selecting at least one of said acceptable answers;
- means for accumulating a set of said acceptable answers;
- automatic data processing means for processing said set of answers as a function of other data;
- means for storing in said mass−storing device, interrelated textual information and graphical information;
- means for interrelating said textual and graphical information;
- a plurality of entry path means for searching said stored interrelated textual and graphical information;
- means, responsive to said means for processing, for executing inquiries provided by said user and for searching said textual and graphical information through said selected entry path means;
- said means for executing and searching, including means for addressing at least one of said installations and for retrieving data related to said answer; and
- means responsive to said means for processing, for transferring orders for said information, goods and services to said installations."

Non−final action

The re−examination was ordered and subsequently the examiner issued a non−final action. He found that another printed publication, "Implications of consumer information processing for the design of consumer information systems" by Gabriel Biehal, The Journal of consumer affairs, Vol 17, No 1 published in 1983, anticipated claims 1−4 and 6−10. The examiner further found that claim 5 was obvious over Biehal in view of the Globecom conference record.

6,289,319

This re−examination takes place with an application number 90/006,623.

Request

The requesters found that claim 1 was anticipated by printed publications:

- Electronic Mall. The printed publication is a reference guide for electronic mall merchants published by the Advanced Media Group (AMG). The Electronic Mall was a service of Compuserve using

Videotex.
- Comp−U−Store. An interview of E. Kirk Shelton (president of Consumer Electronic Services, a division of Comp−U−Card) for Direct Marketing Magazine.
- Discount Store News. Vol 22 No 3. Article about a Canadian company, Consumer Distributing that created an electronic catalog for Videotex users.

The requesters found that claims 3−6 were obvious over printed publications:

- Electronic Mall. See above.
- Comp−U−Store. See above.
- GlobeCom. '82 IEEE Global Communication Conference. Conference record. Vol 3 of 3.
- Discount Store News. See above.

in view of the following printed publications:

- Prestel. A Prestel manual. Prestel was a UK videotext service.
- Kleinberg. An article entitled "How the video will change the sale" by Ellen Kleinberg.
- Ivis. A manual about IVIS.
- P−o−p videodisk. An article entitled "p−o−p disk videodisks help clerks to sell more products" by Michael Gerry, published in January 1984.
- Browning. A story by Graeme Browning about a Videospond device. This device is like today kiosks with a stress on video.
- Improving Retail Productivity. The agenda of a conference.

At the time of writing all these documents and more were public:

- the Electronic Mall document,
- papers from a Viewdata conference,
- the interview of E. Kirk Shelton about Comp−U−Store for Direct Marketing Magazine, entitled "Comp−U−Store system could change retail economics",
- the Globecom '82 IEEE Global Communication Conference. Conference record. Vol 3 of 3,
- an article of Discount Store News Vol 22 No 3 about a Canadian company, Consumer Distributing, which created an electronic catalog for Videotex users,
- samples from a Prestel manual, including some screenshots,
- an article entitled "How the video will change the sale" by Ellen Kleinberg, published by Industrial Marketing in April 1981,
- a manual about a Digital product called IVIS and entitled "IVIS put the power of sight, sound, and touch in information picture." The scan is terrible. The IVIS program was running on VAX. It could use a DECtouch touch screen color monitor and a videodisk player,
- an article entitled "p−o−p disk videodisks help clerks to sell more products" by Michael Gerry, published in January 1984,
- a story of United Press International by Graeme Browning about a Videospond device,
- the agenda of a conference entitled "Improving Retail Productivity", with a subtitle "How retailers and suppliers can improve their use of stocks, space, staff and systems" on October 20th, 2003.

These written publications relate:

1. for the online aspect to the first end−consumer online service to be widely used, the Videotex,
2. for the video to presentation of video devices.

The Videotex was a standard that used to be popular in France (Teletel) and substantially less in UK (Prestel) and elsewhere. The reason was that the French Telco, France Telecom gave a Videotex device, the Minitel, for free to its subscribers. The Minitel differed from the Web in the following ways:

1. It was easy for a provider to make money with Minitel. France Telecom was collecting the money from the subscriber (this was on his phone bill).
2. The use cost of the Minitel was quite high for the subscriber (sometime $1 per minute.)
3. Graphics were terrible and screens were displaying 40 characters per line.

Though Videotex had fewer users than the Web it was providing essentially the same service and designers had to solve essentially the same problems.

Technically Videotex was involving the following equipment:

1. a central computer, typically an IBM mainframe (S370) running a transaction monitor connected to a database, with a network front−end (3725) or a minicomputer (VAX) connected to an X25 public network,
2. the public X25 network,
3. a Packet Assembler/Disassembler (PAD) to convert between X25 and asynchronous,
4. a dumb device with typically a 75/1200bps modem (V23).

The complication of the apparatus came from the necessity to minimize the bandwidth need and the device cost. However the main components, a public network, servers and clients were the same as for the Web. Usually Videotex inventions were not patented. However there is not so much public prior art for the following reasons:

1. lack of easy−to−use authoring tools and of standardized document formats;
2. tedious publication process and secrecy policy, the rare documents were kept secret;
3. lack of archiving and indexing means due to the cost of hardware and especially of hard disks.

On the other hand articles, presentations and guides were explaining the systems designs in more details than today for the following reasons:

1. people were not Intellectual Property aware;
2. there were no technical writers and no experience in the art of explaining just what is needed to use a system;
3. early adopters were technicians that had to convinced of the value of the implementation, a vendor had to explain how its system was working.

Requesters relied precisely on such documents.

Though 6,289,319 was filed on November 30, 1994 its priority date was May 24, 1984 because it was a continuation of a continuation of a continuation of a continuation of a continuation−in−part of an application.

6,289,319 contains 6 claims, the independent claim 1 and five dependent claims. So requesters focused on claim 1 and compared elements of claim 1 to the corresponding structures in the cited printed publications. They found that the following references described all elements in claim 1:

- Comp−U−Store.
- Discount Store News.
- GlobeCom.

Requesters further found that the Electronic Mall document described all elements in claim 1 and that claim 1 was obvious over the Comp−U−Store, GlobeCom, Discount Store News and Electronic Mall documents.

Claim 1 reads:

"An automatic data processing system for processing business and financial transactions between entities from remote sites which comprises:

- a central processor programmed and connected to process a variety of inquiries and orders transmitted from said remote sites;
- said central processor including:
- means for receiving information about said transactions from said remote sites;
- means for retrievably storing said information;
- at least one terminal at each of said remote sites including a data processor and operational sequencing lists of program instructions;
- means for remotely linking said terminal to said central processor and for transmitting data back and forth between said central processor and said terminal;
- said terminal further comprising means for dispensing information and services for at least one of said entities including:
- a video screen;
- means for holding operational data including programming, informing, and inquiring sequences of data;
- means for manually entering information;
- means for storing information, inquires and orders for said transactions entered by one of said entities via said means for manually entering information, and data received through and from said central processor;
- on−line means for transmitting said information, inquiries, and orders to said central processor;
- on−line means for receiving data comprising operator−selected information and orders from said central processor via said linking means;
- means for outputting said informing and inquiring sequences on said video screen in accordance with preset routines and in response to data entered through said means for entering information;
- means for controlling said means for storing, means for outputting, and means for transmitting, including means for fetching additional inquiring sequences in response to a plurality of said data entered through said means for entering and in response to information received from said central processor;
- said informing sequences including directions for operating said terminal, and for presenting interrelated segments of said operational data describing a plurality of transaction operations;
- said programming sequences including means for interactively controlling the operation of said video

screen, data receiving and transmitting means; and for selectively retrieving said data from said means for storing;
- said means for storing comprising means for retaining said operational sequencing list and means responsive to the status of the various means for controlling their operation;
- said central processor further including:
- means responsive to data received from one of said terminals for immediately transmitting selected stored information to said terminal; and
- means responsive to an order received from a terminal for updating data in said means for storing;

whereby said system can be used by said entities, each using one of said terminals to exchange information, and to respond to inquiries and orders instantaneously and over a period of time.

The requesters further explained why they found that claims 3−6 were obvious over printed publications.

Re−examination ordered

The examiner found that the requester raised a substantial question of patentability, and ordered the re−examination.

Eolas re−examination

The re−examination of 5,838,906 takes place with an application number 90/006,831.

Claims

5,838,906 has ten claims. Claim 1 and 6 are independent. Claim 1 reads:

"A method for running an application program in a computer network environment, comprising:

- providing at least one client workstation and one network server coupled to said network environment, wherein said network environment is a distributed hypermedia environment;
- executing, at said client workstation, a browser application, that parses a first distributed hypermedia document to identify text formats included in said distributed hypermedia document and for responding to predetermined text formats to initiate processing specified by said text formats; utilizing said browser to display, on said client workstation, at least a portion of a first hypermedia document received over said network from said server, wherein the portion of said first hypermedia document is displayed within a first browser−controlled window on said client workstation, wherein said first distributed hypermedia document includes an embed text format, located at a first location in said first distributed hypermedia document, that specifies the location of at least a portion of an object external to the first distributed hypermedia document, wherein said object has type information associated with it utilized by said browser to identify and locate an executable application external to the first distributed hypermedia document, and wherein said embed text format is parsed by said browser to automatically invoke said executable application to execute on said client workstation in

order to display said object and enable interactive processing of said object within a display area created at said first location within the portion of said first distributed hypermedia document being displayed in said first browser−controlled window."

Claim 6 reads:

"A computer program product for use in a system having at least one client workstation and one network server coupled to said network environment, wherein said network environment is a distributed hypermedia environment, the computer program product comprising:

- a computer usable medium having computer readable program code physically embodied therein, said computer program product further comprising:
- computer readable program code for causing said client workstation to execute a browser application to parse a first distributed hypermedia document to identify text formats included in said distributed hypermedia document and to respond to predetermined text formats to initiate processes specified by said text formats;
- computer readable program code for causing said client workstation to utilize said browser to display, on said client workstation, at least a portion of a first hypermedia document received over said network from said server, wherein the portion of said first hypermedia document is displayed within a first browser−controlled window on said client workstation, wherein said first distributed hypermedia document includes an embed text format, located at a first location in said first distributed hypermedia document, that specifies the location of at least a portion of an object external to the first distributed hypermedia document, wherein said object has type information associated with it utilized by said browser to identify and locate an executable application external to the first distributed hypermedia document, and wherein said embed text format is parsed by said browser to automatically invoke said executable application to execute on said client workstation in order to display said object and enable interactive processing of said object within a display area created at said first location within the portion of said first distributed hypermedia document being displayed in said first browser−controlled window."

Both claims describe ActiveX and Java applets. This snippet shows the HTML code used to call a Macromedia player to play a Flash file in Internet Explorer:

<object id="myflash" classid="clsid:D27CDB6E−AE6D−11CF−96B8−444553540000" width="400" height="300">

<param name="movie" value="myflash.swf" />

</object>

Here the external executable application is the program whose CLSID is D27CDB6E−AE6D−11CF−96B8−444553540000, the Macromedia player. A browser component parses the document to find the name of the remote file to play, myflash.swf, and calls the external application with this "movie" parameter. The external application utilizes the browser to interactively play the myflash.swf file in the browser window.

This is not very different from the way to display an image:

<img src="myimage.ext" width="400" height="300">

Browsers supported at the time of the invention plug−ins, which are external applications able to display a file identified with its extension. The novelty of 5,838,906 consists in two parts:

1. Allowing the page author to specify the browser application and parameters in a way more flexible than an extension. We may observe that extensions are a legacy of early Windows versions. On 1984 Mac Intosh a file already had a program and a data part. Given the difficulty to manage new file formats it was logical to specify in the page the application name and parameters along with the object to show, play or use.
2. Allowing in−place activation and interaction of the browser application. The in−place activation and interaction of special applications called controls (VBX and OLE for instance) in graphical applications (developed for instance in Visual Basic) was known at the time of the invention.

Trial

The re−examination documents include data about the trial that I present first. These data include:

1. a Markman order;
2. an order ruling against summary judgement on issues of inequitable conduct and non−infringement;
3. an order ruling on inequitable conduct, not analyzed here because it discuss the ViolaWWW browser like 2;
4. a jury verdict;
5. a judgment order;
6. a order consolidated rulings on post−trial motions.

Eolas and the University of California were the plaintiff and Microsoft the defendant.

Markman order

See the business method page for an explanation of Markman hearings.

The judge found that claims 1 and 6 use the same terms and focused on claim 6. The parties disputed the meaning of "said object has type information associated with it utilized by said browser to identify and locate an executable application external to the first distributed hypermedia document."

Eolas defined "executable application" as "program code for causing the display of the object and enabling interactive processing of that object" whereas Microsoft proposed that executable application refers to standalone program. The judge followed Eolas and concluded that an "executable application is any computer program code, that is not the operating system or a utility that is launched to enable an end user to directly interact with data." His reasoning is quite interesting.

He first observed that "executable application" did not have a plain and ordinary meaning to someone skilled in the art of computer science. He read application as a "computer program that is not the Operating System or a utility, that is designed to help an end−user to perform some specific task." He found that, though the preferred embodiment did not use DLLs or components as the executable application, the inventors repeatedly said that the preferred embodiment was but one possibility of the invention in practice. He further found that the patent claims and specification are focused on function, not jargon. For instance the claims and specification were not concerned with memory allocation. Then he considered the prosecution history.

The patent examiner rejected the patent three times for obviousness:

1. He found that it would have been obvious to combine the prior art made of HTTP, HTML, clients, servers and browsing software with the teaching of Hansen s "Enhancing documents with embedded programs: How Ness extends insets in the Andrew toolkit." However, in rejecting the patent, the examiner agreed with the inventors that the disclosed prior art by itself "does not have embedded controllable application [executable/ interpretable/ 'launchable'/ program instructions/codes] in the hypermedia document." Therefore the judge read the file history to begin with a broad definition of executable application, inclusive of componentization.
2. The examiner found that the invention was an obvious combination of Mosaic and 5,206,951 from Wang. 5,206,951, entitled "Integration of data between typed objects by mutual, direct invocation between object managers corresponding to object types", describes a "system including an extensible set of object types and a corresponding set of object managers wherein each object manager is a program for operating with the data stored in a corresponding type of object. 5,206,951 further says that "a mechanism is provided for linking data from one object into another object. An object catalog includes both information about objects and about links between objects. Data interchange services are provided for communicating data between objects of different types, using a set of standard data interchange formats." With a priority date of Aug. 21, 1987, 5,206,951 describes functions of the later Object Linking and Embedding (OLE) and foundation framework, COM and therefore an Operating System feature. In my view it does not make obvious "said object has type information associated with it utilized by said browser to identify and locate an executable application external to the first distributed hypermedia document" because it describes an operating system and not a browser feature. We know that inventors persuaded the examiner that their invention was not an obvious combination of Mosaic and 5,206,951 but unfortunately we do not how.
3. The examiner found that the invention was an obvious combination of the prior art made of HTTP, HTML, World Wide Web with 5,581,686 from Microsoft. 5,581,686, entitled "Method and system for in−place interaction with contained objects", describes a "method and system for interacting with a containee object contained within a container object." With a priority date of Dec. 1, 1992, 5,581,686 describes OLE. It relates to relationships between the inner and the outer application in an environment, the graphical componentized user interfaces, which was more demanding than browsers. The inventors responded to the rejection with two arguments (1) 5,581,686 did not teach the automatic invocation of an external function; (2) 5,581,686 did not allow for the editing of data that 5,838,906 specifically sought to accomplish. They use excerpts from "Inside OLE" [the reference book about OLE written by Kraig Brockschmidt] in their reasoning to persuade the examiner. [I used to be a COM programmer. Though I have never been an OLE expert, I also read "Inside OLE". I think that (1) OLE/ COM can do anything and everything (2) OLE was not portable because of its complexity and bias toward Windows, Office products and Visual Basic whereas 5,838,906 is portable.]

The judge found that the file history did not limit the term "executable application" to standalone applications [though he implicitly acknowledged that OLE allowed the automatic invocation of external functions and the editing of data.]

I think that the judge decision was correct. In 1994 browsers were used as much on Unix workstations as on Windows. Microsoft DLLs were of common use in Windows environments in 1994. On Unix their equivalent, shared libraries, were much less used. Reasons were that, on Unix, the creation of processes was inexpensive and that inter−process communication was fast and easy to implement. So Unix programmers preferred to use separate processes, notably for robustness. An error in a DLL breaks the process whereas an error in a child process does not break the parent process. Mosaic had a Mosaic External Application Program Interface (MEAPI) to communicate with an external application much in the same way as the NCSA HTTP server had a CGI interface. These were very logical choices in 1994. I further think that:

- Assimilating executable to .EXE versus .DLL is terribly Microsoft centric. Microsoft further said that a component (a routine, a library or a module) could not be the executable application. This is true but not in the way pointed by Microsoft. Unix users called routine or module a piece of source code or an object and library an archive and used "shared library" to unequivocally name a binary unit that could be loaded by an executable.
- In a discussion about the standalone nature of "executable application" we do not have to consider if the executable application can be launched but whether this execution can give useful results. A CGI can run standalone but, because it may read its standard input and necessarily writes into its standard output, it can give useful results only when called from an HTTP server.

According to Microsoft "type information" meant data type or extension. The claims of 5,838,906 say nothing about the type nature and the specification contains examples like "application/x−vis" or "video/mpeg", suggesting that inventors had in mind type = MIME type [MIME stands for Multipurpose Internet Mail Extension]. So the judge rejected the Microsoft construction.

Microsoft found that "utilized by said browser to identify and locate" means that the browser and not the Operating System is utilizing, identifying and locating the type. This is almost necessarily the case for any portable embodiment, Operating Systems not necessarily implementing the needed function. This is not the case for Internet Explorer that delegates the tasks of identifying and locating the type to the COM API. However to practice the invention a person of the art needs to store somewhere (type, path of the executable application) pairs. If the browser parses these pairs from a text file everyone will probably agree that this is the browser that identifies and locates the type. But the browser may use a database (even a simple embedded database like Berkeley DB) that provides the same function as the Windows registry. I think that most people will find that this is still the browser that identifies and locates the type. The issue is not only a technical matter. This is also a matter of abstraction layer. Internet Explorer may ignore the type meaning because it forwards the request to COM. If a browser uses a database it must instantiates the application but it can ignore parsing issues; to know how to instantiate the application it just has to make select path from table where type=?.

For this reason I would disagree with Microsoft without the prosecution history. In attempting to overcome the 5,581,686 rejection inventors said that, in 5,581,686, "the actual linking mechanism between the container document and the containee server application is coordinated by the operating system s registry database." Because of that I think that the judge rightfully construed "utilized by said browser to identify and locate" as

utilized by said browser and not by the Operating System as in 5,581,686 to identify and locate.

Summary judgment

Inequitable conduct

Microsoft alleged that the main inventor of 5,838,906, Dr Doyle

1. intentionally withheld from the USPTO information regarding a Web browser, ViolaWWW created by Pei−Yuan Wei that had the capability to display interactive objects embedded in a Web page;
2. knowingly made false representation to the USPTO that he had demonstrated his invention to the Netscape founders and to Sun engineers.

The judge reminded that "all patent applicants owe a duty of candor and good faith to the USPTO and this duty exists throughout the entire prosecution of the patent. Breaching this duty may constitute inequitable conduct, which includes affirmative misrepresentation of a material fact, failure to disclose material information, or submission of false material information, coupled with an intention to deceive."

"In determining whether a failure to disclose information to the USPTO rises to the level of inequitable conduct, there is a three step analysis in which the court must determine:

1. whether the withheld information or misrepresentation meets a threshold level of materiality;
2. whether a threshold level of intent has been shown by the evidence;
3. if these [both] thresholds are satisfied, whether the equities warrants the conclusion that inequitable conduct occurred."

"Thus, for a failure to disclose to constitute inequitable conduct, there must be clear and convincing proof of:

1. prior art or information that is material;
2. knowledge chargeable to the applicant of this prior art or information and of its materiality;
3. failure of the applicant to disclose the art or information resulting from an intent to mislead the USPTO."

Materiality is defined by Rule 56 of the USPTO, which states the following:

"Information is material to patentability when it is not cumulative to information already of record in the application, and

1. it establishes by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
2. it refutes or is inconsistent with a position the applicant takes in I. Opposing an argument of unpatentability relied on by the office, or II. Asserting an argument of patentability."

"The test of materiality is whether a reasonable examiner would have considered this information important, not whether the information would conclusively decide the issue of patentability."

So to answer to the materiality question the judge focused his inquiry on whether the information possessed by Dr Doyle was something the examiner should have been told.

On August 24, 1994 Dr Doyle posted an announcement on a mailing list which stated that "researchers of the University of California have created software for embedding interactive program objects within hypermedia documents." Dr Wei replied the same day: "I don t think this is the first case of program objects being embedded in docs and transported over the WWW. ViolaWWW has had this capability for months and months now." Dr Doyle asked: "How many months and months? We demonstrated our technology in 1993." Dr Wei said: "Definitely by May 8, 1993 we had demonstrated a plotting demo to visitors of a certain computer manufacturer." And so forth. Dr Doyle and Dr Wei never agreed about who was the first.

Microsoft rightfully observed that if Dr Wei was right two things are possible:

1. Dr Doyle demonstrated the 5,838,906 invention before May 8, 1993. Then 5,838,906 was novel but could not be patented because it was made public more than one year (grace period) before the date at which 5,838,906 was filed (October 17, 1994).
2. Dr Doyle demonstrated the 5,838,906 invention after May 8, 1993. Then 5,838,906 could not be patented because it was not novel.

However it seems reasonable that the invention of a system embedding interactive program objects within hypermedia documents was not made in one day. We can imagine that in a first step the apparatus to invoke an external program and display an embedded image was defined and that in a second step the way to embed an interactive program object was progressively developed. We may think that Dr Doyle was reluctant to analyze ViolaWWW because he thought that he had a better technology and did not want to expose to copy accusations. The solution of Dr Doyle (compiled program objects) and the solution of Dr Wei (interpreted program objects) were different. Dr Doyle disclosed Java and could feel that a ViolaWWW disclosure would have been cumulative (redundant). Dr Doyle was the respected expert in the e−mail discussion. Dr Wei, with his inferior English skills (pitilessly reproduced by the judge) was looking for an agreement and maybe even for a kind of recognition. The discussion sounded like the debate between Andrew Tanenbaum and Linus Torvalds, in which Linus Torvalds desperately tried to defend his Operating System, Linux.

Though "applicants are not conscripted to serve as an investigative arm of the USPTO", "one should not be able to cultivate ignorance, or disregard numerous warnings that material information or prior art may exist, merely to avoid actual knowledge of that information or prior art." This case was close and the judge logically found that the materiality of the ViolaWWW disclosure had to be decided at trial and that a summary judgment on the issue of intent was inappropriate at this time.

Microsoft also alleged Dr. Doyle sworn declaration to the USPTO that the "the applicant initially demonstrated the first Web plug−in and applet technology to founders of Netscape and engineers employed by Sun Microsystems" was not only false, but that Dr. Doyle knew that this statement was false when he made it. The patentee clarified later. The statement was based upon a phone conversation with Joseph Hardin (not involved in founding Netscape) during which Dr. Doyle believed Mark Andressen, the famous Netscape founder, was listening in. "Founders of Netscape" rather meant "members of the Mosaic development team in NCSA." Said that way, this is quite possible. When Netscape was founded there was no power distance between Dr. Doyle and Netscape founders. In the same way Dr. Doyle never said that he presented his invention to Sun s top executives. The judge found that he could not decide whether Dr Doyle statement was

untrue, a deliberate misrepresentation or a reasonable mistake and thus denied summary judgment. He made the following comments:

- "The filing of a false declaration is sufficient to state a claim of inequitable conduct, since the Federal Circuit has held 'affidavits are inherently material, even if only cumulative. The affirmative act of submitting an affidavit must be construed as being intended to be relied upon.'"
- "To find inequitable conduct on this ground, 'a holding of unenforceability based on the filing of a false oath requires that the oath is false, and made with knowledge of the falsity.'"
- "Summary judgement for inequitable conduct is generally rare because, as in the present case, the motive and intent are central to the claim, and there is rarely direct evidence of deceitful conduct."

Note

I found an old document co−authored by Dr Doyle that strongly suggests that he worked with Sun.

Early bench trial

Microsoft requested that a separate bench trial on its inequitable conduct claim be held before a jury trial on the issues of infringement and invalidity. Because this relates to American law I need to provide some background data.

The defense of inequitable conduct is equitable in nature and is therefore an issue for a court (judge) and not for a jury. Note that in the past such cases were decided by a special court, called a court of equity. See the business method page for an explanation of the difference between equity, fact and common law. A bench trial is a trial in front of a judge instead of a jury. The US Constitution also has a Seventh Amendment that says: "In Suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury, shall be otherwise re−examined in any Court of the United States, than according to the rules of the common law." Some equity issues are necessarily ruled before the trial (preliminary injunction) but most of them are ruled after the trial (permanent injunction, inequitable conduct...) The Supreme Court has held that "only under the most imperative circumstances... can the right to a jury trial of legal issue be lost through a prior examination of equitable claims."

What the judge had to decide was "whether a prior trial on the issue of whether the patent is unenforceable for inequitable conduct would resolve factual issues common with factual issues reserved to the jury." The judge found that the question of materiality and the question of prior art were intertwined and therefore that there was commonality of factual issues in the case. So he denied the motion for an early bench trial.

Microsoft motions for Summary judgment

Microsoft filed motions for summary judgment of non infringement:

- with respect to support of applets,
- with respect to support for ActiveX controls,
- with respect to the object display function,
- for invalidity.

The judge decision is particularly interesting because:

1. the judge discussed prosecution history estoppel and doctrine of equivalents,
2. the Supreme Court vacated the Festo decision after the parties had filed their brief and before the judge decided this issue. The Supreme Court notably held that the reach of prosecution history estoppel "requires an examination of the subject matter surrendered by the narrowing amendments." The judge read that it implied that "if the amendment does not narrow the scope of a particular subject matter [...] prosecution history estoppel does not bar a claim under the doctrine of equivalents with respect of this particular subject matter."

Microsoft argued that

1. "the applicants narrowing amendments to the claims... and
2. the applicants arguments distinguishing prior art OLE systems to secure allowance of their claims prevent application of the doctrine of equivalents to cover the distinguished operations of OLE"

give rise to prosecution history estoppel according to Festo. Plaintiffs answered that "the doctrine of equivalents is unnecessary given that Microsoft s products literally perform the claim element of having the browser identify and locate an executable application," and that much of Microsoft s argument "relies upon Microsoft s faulty premise that the inventors disclaimed any use of the operating system in performing the claimed elements."

This is essentially the same discussion as in the Markman hearing. An amendment of 5,838,906 specified that it was the browser that utilized type information to identify and locate an executable application. The applicants also distinguished their invention from systems in which the operating system linked an object identifier and an executable application.

The judge first considered the motion for summary judgment of non infringement with respect to support of applets. Applets are written in Java, so in a language whose compiler generates a code that must be interpreted by a Java Virtual Machine (JVM). The Microsoft JVM is an ActiveX control called msjava.dll. When Internet Explorer encounters the APPLET tag in a Web page it uses COM to identify load and call msjava.dll. To find the location of msjava.dll COM uses the Windows registry. The JVM interprets the Java program pointed by applet tags. Consider the following example:

<applet archive="myarchive.zip" code="myclass.class" width="500" height="500">

</applet>

Here Internet Explorer downloads myarchive.zip from the page site. The JVM runs myclass.class that presumably calls other classes contained in myarchive.zip. A first question is whether the executable application is msjava.dll or the archive (myarchive.zip here).

We may note that for Internet Explorer the applet tag is just a short name for <object classid="...">. Internet Explorer can run other ActiveX controls to interpret other sorts of intermediate code. In the example below Internet Explorer calls a Macromedia control to run a Flash file.

<object id="myflash" classid="clsid:D27CDB6E−AE6D−11CF−96B8−444553540000" width="400" height="300">

<param name="movie" value="myflash.swf" />

</object>

In his Markman order the judge defined an executable application as "any computer program code, that is not the operating system or a utility, that is launched to enable an end−user to directly interact with data." Microsoft contended that a JVM does not allow an end−user to directly interact with data. This was a tough question:

- Intermediate code interpreters can be implemented in hardware and microcode. A computer could include a Java processor and/or a Flash processor even if the cost of developing and producing processors make such processors impractical today. So an intermediate code interpreter like a JVM is a special program like an operating system or a utility.
- Without an appropriate interpreter the intermediate code cannot produce a useful effect. So an interpreter enables an intermediate code to produce a useful effect. The JVM enables Java code to provide a means allowing an end−user to directly interact with data.
- Claim 6 discloses an "embed text format, located at a first location in a first distributed hypermedia document, that specifies the location of at least a portion of an object external to the first distributed hypermedia document, wherein said object has type information associated with it utilized by said browser to identify and locate an executable application external to the first distributed hypermedia document, and wherein said embed text format is parsed by said browser to automatically invoke said executable application to execute on said client workstation in order to display said object and enable interactive processing of said object ." So the object and the executable application are two different things. The object can be the instantiation of a Java class performed by a JVM, which is the executable application. Then it is correct to say that the JVM enable interactive processing of this object and harder to say that the JVM displays this object. [Note that the judge could not decide at this point if the end product, namely the image projected on a web page was the only thing that can be considered as an object or if the object can encompass the image s coding.]

The judge experts avoided to answer to this question and repeated that an executable application could be a DLL. The judge wrote: "If I construe all reasonable inferences in favor of the plaintiffs, which I must for the purpose of this motion, then I accept that a JVM is an executable application, and consequently, it becomes just another ActiveX control."

The judge considered the motion for summary judgment of non infringement with respect to support of ActiveX controls. The question to answer was "is it the browser or the operating system that identifies and locates executable applications?" In his Markman order the judge found that the browser, not the operating system, does the "heavy lifting" of identifying and locating, reading the claim language "to mean that the browser identifies and locates the executable application and that is able to perform these functions because it is armed with the knowledge of type information." Microsoft said that Internet Explorer merely determines type information and passes it on to the operating system, which then utilizes this type information to identify and locate the executable application. Plaintiffs said that Internet Explorer "utilizes type information in the text of the web page that it parses to identify and locate the executable application." The judge found that

whether Microsoft or plaintiffs are correct was a question for a jury to decide after seeing the detailed evidence. Therefore the judge denied Microsoft s motion and, because he earlier found that a JVM is another ActiveX control, he also denied the applet motion.

The judge considered the motion for summary judgment of non infringement with respect to the object display function. The question to answer was "what displays the object, the browser or the executable application?" The key sentence is "is parsed by said browser to automatically invoke said executable application to execute on said client workstation in order to display said object and enable interactive processing of said object." Plaintiffs believed that 5,838,906 allows for both possibilities. Microsoft thought that "the language of the claims is indefinite in that it is unclear whether the browser or an executable application displays [...] on the screen, and the only saving construction of the claims is that the browser displays the object, which is fundamentally different from Internet Explorer, in which the executable application does the displaying."

The judge found that:

1. the purpose of an executable application was to enable a user to interact directly with data;
2. it did not make sense that "to enable a user to interact directly with data has nothing to do with displaying that data."

Regarding indefiniteness a case law says "the test of definiteness is whether one skilled in the art would understand the bounds of the claim when read in light of the specification." The judge found that allowing both the browser and the executable application to display the object does not expend the number of programs displaying an object to the point of indefiniteness. The judge denied Microsoft motions for non infringement with respect to the object display function and for invalidity because of indefiniteness. Note that the consequence of the judge decision is not the same for the invalidity motion and for the other motions. Invalidity is a matter of law. So the judge ruled the invalidity motion. For the other motions he just found that they related to matters of fact to be decided by the jury.

Discovery and pleading motions

Plaintiffs filed a motion relating to discovery to find evidence of wilful infringement of 5,838,906. The judge broke down this motion in two separate issues:

1. production of Microsoft patent applications;
2. discovery relating to Windows server products.

Microsoft said that it "had no pre−complaint knowledge of 5,838,906 or the patent application that resulted in the 5,838,906 patent." The plaintiff disagreed and requested in the first part of the motion that Microsoft produce all of its patent applications that cite 5,838,906, which Microsoft opposed.

I found that 5,838,906 was cited by 115 patents on October 31, 2004. 16 of these patents were filed by Microsoft, which is a lot, but barely more than the number of patents filed by IBM (15). Note that 115 qualifies 5,838,906 as a very good patent. The Microsoft patents are:

Patent #	Title	Priority date / Issue	First inventor

		date	
6,049,671	Method for identifying and obtaining computer software from a network computer	April 18, 1996 / April 11, 2000	Slivka
6,073,214	Method and system for identifying and obtaining computer software from a remote computer	Nov. 27, 1995* / June 6, 2000	Fawcett
6,101,510	Web browser control for incorporating web browser functionality into application programs	Jan. 29, 1997 / August 8, 2000	Stone
6,148,304	Navigating multimedia content using a graphical user interface with multiple display regions	March 19, 1997 / Nov. 14, 2000	De Vries
6,188,401	Script−based user interface implementation defining components using a text markup language	March 25, 1998 / Feb. 13, 2001	Peyer
6,256,668	Method for identifying and obtaining computer software from a network computer using a tag	April 18, 1996 # / July 3, 2001	Slivka
6,327,617	Method and system for identifying and obtaining computer software from a remote computer	Nov. 27, 1995 § / Dec. 4, 2001	Fawcett
6,347,398	Automatic software downloading from a computer network	Dec. 12, 1996 £ / Feb. 12, 2002	Parthasarathy
6,363,404	Three−dimensional models with markup documents as texture	June 26, 1998 / March 26, 2002	Dalal
6,381,742	Software package management	June 19, 1998 / April 30, 2002	Forbes
6,401,099	Asynchronous binding of named objects	Dec. 6, 1996 / June 4, 2002	Koppolu
6,415,326	Timeline correlation between multiple timeline−altered media streams	Sept. 15, 1998 / July 2, 2002	Gupta
6,460,058	Object−oriented framework for hyperlink navigation	Dec. 6, 1996 / Oct. 1, 2002	Koppolu
6,545,691	Client−side control of controls loaded by a browser	June 12, 1998 / April 8, 2003	Vallejo
6,622,171	Multimedia timeline modification in networked client/server systems	Sept. 15, 1998 / Sept. 16, 2003	Gupta
6,802,061	Automatic software downloading from a computer network	Dec. 12, 1996 $ / Oct. 5, 2004	Parthasarathy

* continuation of 08/562,929 that was issued as 5,845,077 and that does not refer to 5,838,906.

divisional of 08/634,390 that was issued as 6,049,671 (first patent in the list).

§ continuation of 09/149,993, issued as 6,073,214 (second patent in the list), which is a continuation of 08/562,929 filed Nov. 27, 1995, issued as 5,845,077.

£ continuation of 08/764,040, filed Dec. 12, 1996 now abandoned.

$ continuation of 09/436,185 filed Nov. 8, 1999 (presumably issued as 6,347,398, eighth patent in the list), which is a continuation of 08/764,040 filed Dec. 12, 1996 now abandoned.

For each patent we give two dates:

1. the date at which the patent application or its parent was filed;
2. the date at which the patent was issued (granted).

The list includes all patent applications that were granted but not applications that are not yet granted or which were abandoned. Between these two dates Microsoft provided an Information Disclosure Statement including 5,838,906, possibly because the examiner informed Microsoft that they had to include 5,838,906.

5,838,906 was filed on October 17, 1994 and granted on November 17, 1998. Shortly after, Eolas and the University of California notified Microsoft that they were infringing 5,838,906. As you can see Microsoft may have known about "5,838,906 or the patent application that resulted in the 5,838,906 patent" in

- the prosecution of any of these patents
- the prosecution of 5,845,077 or 08/764,040
- the prosecution of other patents I have not identified
- a patent watch (an analysis of published patents in areas of interest for Microsoft).

I do not know what search means were between 1994 and 1998. I started to use the USPTO site only in December 1999. In my opinion it would be hard to believe that, in 2000 or later, a patent or patent application on a given subject matter could be unnoticed by all people in a corporation having a dozen of ongoing patent applications on the same subject matter. This is also reasonable to think that in term of patent watch and business intelligence related to computing Microsoft is the second best company in the world, the first one being IBM and that Microsoft had the way to effectively monitor patent applications in 1994. Therefore someone in Microsoft probably read 5,838,906 soon after it was made public. However the knowledge of a company is not the sum of what all people working for this company have heard about:

1. Patent analysis requires knowing both the patent system and the domain to which the invention pertains. This job requires experience. The analyst misses many things if he was not working in the patent domain when the patent was filed.
2. For an organization that publishes many complex products, there are many patents that cannot be safely eliminated without an analysis.
3. Patent analysis takes time, three hours to report a first impression, one week to check if a process or method may infringe the patent. An opinion of counsel (the opinion of a third party attorney) may cost $15,000 and more.
4. So companies do not have the resources to analyze all patents and patent applications of interest. They actually concentrate their effort on competitors patents for two reasons: (1) The risk is higher in case of infringement of a competitor patent; a competitor can more easily demonstrate that it suffers non−monetary damage harm and be granted an injunction or even a preliminary injunction. (2) The analysis of competitors patents returns business intelligence data. This analysis gives useful results in any case.

The judge denied a first plaintiffs request for discovery explaining that he saw it "as a useless endeavor." He

added that "given the practice of citation before the Patent Office, particularly in Interference proceedings, I am unlikely to attach a great deal of weight to the fact that somebody has actually cited a patent." The judge observed that "in the application that resulted in US Patent No. 6,049,671, the [US]PTO sent Microsoft a rejection of its application, one of its grounds being a citation to the 5,838,906 patent as prior art. What this document shows is that the examiner found some prior art not relied upon in the application that was 'considered pertinent to the applicant s disclosure', and it included a citation of 5,838,906 patent as disclosing 'that self−extracting data objects are known in the art.'"

The judge denied the part of the plaintiffs motion relating to the production of Microsoft patent applications because it would "exert a fair amount of burden and cost to Microsoft," the number of applications to produce being more than 100 and the time to review an application being of three hours.

About the second part of the motion (discovery relating to Windows server products), Microsoft said that "these server products have never been accused, and to include these products in the list of accused products would substantially expand the case due to the fundamental difference between client and server products." Plaintiffs said that they were seeking "garden−variety spreadsheet summary data regarding licenses, revenue and profitability of accused server versions of Windows 2000 and Windows NT operating system software with Internet Explorer." The judge understood that plaintiffs complaint pointed toward all Microsoft products that incorporate or integrate Internet Explorer and said that "whether the difference between server and client software places server software outside the scope of plaintiff s complaint is a question of facts for the jury to decide". So the judge granted this part of the motion.

Plaintiffs filed another motion to compel Microsoft s response to wilfulness issues. The judge understood that Microsoft position was that "it did not know of the patent (as opposed to press releases about the patent), had no legal concern about whatever it did know, had no reason to seek opinion of counsel, and thus did not receive any advice from counsel concerning the patent prior to the filing of the complaint." He said that if Microsoft "did have knowledge of the patent and does have opinions of counsel (in−house or outside) then it must disclose those facts and provide a log of those opinions to plaintiff." The plaintiffs showed the following evidence that Microsoft had a pre−suit knowledge of 5,838,906:

1. a mail from the president of Spyglass technology to a Microsoft employee to which a press release referring to the 5,838,906 patent application was attached;
2. instructions to a Microsoft in−house lawyer to not answer certain questions on ground of attorney−client privilege during her deposition.

Therefore plaintiffs asked the judge decision ("disclose those facts and provide a log of those opinions to plaintiff") to be executed. This is the same issue as for pending patent applications. The judge observed that "knowledge in the context of wilfulness issues in this case must constitute more than being aware that something exists." The Microsoft employee admitted forwarding the Spyglass mail to the in−house lawyer but he also explained that he was "at a fairly low level at the company" and needing to keep his boss informed. Neither Spyglass nor the employee analyzed 5,838,906. The in−house lawyer was instructed not to answer. The testimony does not prove that the in−house lawyer gave legal counsel.

[It is entirely possible that the in−house lawyer never read 5,838,906. A mail forwarded by a low level employee and informing about a patent is a prompt and not an obligation to act. A lawyer, presumably also at a low level asks her supervisor for instruction and when the supervisor says to do nothing she happily follow

the instruction. On the other hand Microsoft paid a royalty to Spyglass to use their browser technology and people allowed to talk with partners usually do not have a so low level at a company.]

The judge found that the plaintiff evidence did not indicate that Microsoft knew more than the existence of the application and therefore denied the plaintiff motion.

Microsoft filed a motion to enforce a protective order. The judge previously entered the following protective order: "all discovery material (and the information contained therein) whether designated as confidential or not so designated, shall be used by each party receiving it solely for the prosecution or defense of the claims in this litigation or any appeal therefrom and shall not be used by this party for any business, commercial, competitive, personal or other purpose." Microsoft alleged that plaintiffs, or more precisely the firm that represents them, had violated the protective order. This firm was working on two cases against Microsoft. An attorney working on both cases noticed that some documents disclosed by Microsoft for the Eolas case could also be useful for the other case and alerted attorneys working on this other case, and these attorneys sent a letter to Microsoft asking for these documents. However there is no indication that these attorneys knew what was contained in the documents. They wrote that they aware of the protective order and had no intention of using in the other case documents produced in the Eolas case. The judge held that this is not a violation of the protective order and denied the motion.

Verdict

The jury answered yes to the two questions:

1. Did Eolas and the University of California prove, by a preponderance of the evidence, that Microsoft has infringed claim 1 of the 5,838,906 patent?
2. Did Eolas and the University of California prove, by a preponderance of the evidence, that Microsoft has infringed claim 6 of the 5,838,906 patent?

The jury held the 5,838,906 patent valid and infringed.

Judgment order

The judgement order notably says that

1. "Defendant [Microsoft] has infringed claim 1 and 6 [the two independent claims] of the 5,838,906 patent and induced United States users of Internet Explorer to infringe claim 1of the 5,838,906 patent.
2. Defendant has not shown by clear and convincing evidence that claim 1 or claim 6 of the 5,838,906 patent is invalid.
3. Defendant has not shown by clear and convincing evidence that the 5,838,906 patent is unenforceable as a consequence of unequitable conduct.
4. Plaintiffs are awarded a royalty for defendant s infringement of the 5,838,906 patent at a rate of $1.47 per unit [2.5% of the selling price] of the infringing products. Defendant infringement for the period from 17 November 1998 through 30 September 2001, as decided by the jury, entitles plaintiffs to an award for damages against defendant in the amount of $520,262,280."

In my view the most interesting paragraph is §7 that says:

"beginning 17 weeks after entry of this judgement and order, any new version of Microsoft s Windows operating system [...] containing Internet Explorer technology [...] shall not enable to display interactive objects embedded in Web pages received over the Internet in a manner that would infringe claim 6 of the 5,838,906 patent."

This judgment order motivated the steps to address Eolas Patent Ruling. On October 6 Microsoft announced the following changes on the <object>, <applet> and <embed> tags:

- By default when an Active X control is loaded the user must acknowledge a message box that displays: "Press OK to continue loading the content of this page". The reason for this message is that 5,838,906 describes a method for the browser to automatically execute a program. If it requires the user to acknowledge the Microsoft browser no longer automatically executes a program and therefore no longer infringes the patent.
- There are three solutions to avoid the message box. The first one is to use DHTML to dynamically insert the control stuff. The second solution is to define the <object>, <applet> or <embed> element without any attribute or <param> child that could specify a URI. The third solution is to add a new attribute NOEXTERNALDATA attribute to the <object> element. We understand that this also applies for <embed> and <applet>. NOEXTERNALDATA is remarkable: it declares that the control does not make network accesses and prevents the control from receiving URI data from page parameters. However technically nothing can prevent a control written in a native language from networking.

Microsoft appealed the verdict and made the following statement: "It s important to note that the court has already rejected claims that there was any wilful infringement. We believe the evidence will ultimately show that there was no infringement of any kind, and that the accused feature in our browser technology was developed by our own engineers based on pre−existing Microsoft technology.

Post−trial order

Microsoft filed post−trial motions:

- For judgment as a matter of law and for a new trial (denied). The judge found that this motion rehearsed a series of arguments that failed the first time around. He reminded that he had to consider "whether the evidence presented [...] is sufficient to support the verdict when viewed in the light most favourable to the party against whom the motion is directed."
- For a new trial with respect to damages or, in the alternative, for remititur (denied).
- To exclude foreign sales (denied).
- To stay entry of judgment and all further proceedings (denied). The judge made an interesting comment about re−examination: "The [US]PTO rarely uses this power [to order a re−examination], and when it does, it is usually not good news for the patent holder because a high percentage of such re−examinations end in cancellation or amendment." The judge chose to deny the motion because "if its patent is finally found valid and infringed, it [Eolas] will have waited more than half a decade to be paid."

Eolas filed post−trial motions:

- For injunction (granted but stayed). The judge seems to have chosen to stay the injunction pending resolution or abandonment of appeal or a decision to not appeal [Microsoft appealed], primarily because of the public interest: "an injunction [...] with respect to a product so widely used and deeply integrated into society, as this one, presents a policy problem." Then Microsoft wrote: "Given the present legal status as well as requests made by partners and customers, Microsoft will, for the time being, not move ahead with the modest steps it intended to take to modify Windows and Internet Explorer."
- For a determination of prejudgment interest (granted).
- For an equitable accounting (granted).

Re−examination

Order

The examination of 5,838,906 was ordered by the Director of the USPTO. This is a relatively unusual procedure. The USPTO guidelines "provide that the policy of the Director is to order reexaminations when it is apparent, after a review of the prosecution history, that there is a compelling reason to order reexamination [...]. Circumstances that can meet the compelling reason requirement include: (1) an examining practice, policy or procedure was not followed before the grant of a patent which resulted in a failure to consider patents and/or printed publications which prima facie make any claim(s) unpatentable, and/or (2) a significant concern about the patentability of the claimed subject matter has been expressed by a substantial segment of the industry, and/or there is substantial media publicity (e.g. the Internet or the news services) adverse to the patent alleging conspicuous unpatentability of the claims."

The concern expressed by a widespread segment of the industry about 5,838,906 created an extraordinary situation for which a Director ordered re−examination was an appropriate remedy.

This guideline raises an issue. "A significant concern about the patentability of the claimed subject matter" is expressed by a segment of an industry or by media only when the claimed subject matter harms this industry. The interest of the industry segment is clearly to invalidate the patent. Industry representatives and media are not experts expressing an independent opinion about the claims patentability. Though a re−examination order does not imply a patent invalidation, the guideline implies that the patent will come under scrutiny and practically needs to meet a higher standard than less harmful patents to stand.

The Director of the USPTO determined that the prior art discussed below raises a substantial new question of patentability as to claims 1−3 and 6−8 of 5,838,906.

The Director found that "the prior art does not teach as in claim 1 of 5,838,906, the particular steps used by the browser in order to process and display the hypermedia page. To summarize the prior art does not teach a method wherein the browser application parses a first distributed hypermedia document to identify text formats included in the distributed hypermedia document and for responding to predetermined text formats to initiate processing specified by the text format." However the Director found that it could be argued that "it

would have been readily apparent to a skilled artisan to combine (1) the teachings of Berners−Lee [the main inventor of HTML and HTTP] regarding the processing of HTML documents performed by a browser, with (2) the HTML browser of the patent admitted prior art in light of the statement made by the prior art that its hypermedia system is designed to handle hypermedia documents according to the HTML markup standard."

The Director noted that the patentee found that the prior did not teach:

- "said first distributed hypermedia document includes an embed text format, located at a first location in said first distributed hypermedia document, that specifies the location of at least a portion of an object external to the first distributed hypermedia document" and
- "said embed text format is parsed by said browser to automatically invoke said executable application to execute on said client workstation in order to display said object and enable interactive processing of said object within a display area created at said first location within the portion of said first distributed hypermedia document being displayed in said first browser−controlled window."

Non final action

Claims 1−3 and 6−8 were rejected as being obvious over the admitted prior art of 5,838,906 and the following new prior art:

1. a IETF draft about HTML by Tim Berners−Lee;
2. a document about HTML+ by Dave Raggett (Raggett I);
3. a posting in a W−WW−TALK mailing list by Dave Raggett (Raggett II).

I present here the reasoning of the examiner for claim 1 from which follows the rejection of claims 2−3 and 6−8. He found that the admitted prior art did not teach the following portions:

1. "said first distributed hypermedia document includes an embed text format, located at a first location in said first distributed hypermedia document, that specifies the location of at least a portion of an object external to the first distributed hypermedia document";
2. "said object has type information associated with it utilized by said browser to identify and locate an executable application external to the first distributed hypermedia document";
3. "said embed text format is parsed by said browser to automatically invoke said executable application to execute on said client workstation in order to display said object and enable interactive processing of said object within a display area created at said first location within the portion of said first distributed hypermedia document being displayed in said first browser−controlled window".

The examiner also found that:

1. the IETF draft makes the first portion obvious;
2. Raggett taught "the object has type information associated with it utilized by said browser to identify and locate an executable application external to the first distributed hypermedia document, and wherein said embed text format is parsed by said browser to automatically invoke said executable application to execute on said client workstation in order to display said object", so the second portion and the first part of the third portion.

The examiner further found that Raggett I taught that the browser could link to external editors for creating or revising embedded data, which allowed the user to interactively process the data within the browser window [the last part of the third portion].

Claims 4−5 and 9−10 were rejected as being obvious over the admitted prior art of 5,838,906 in view of the IETF draft, Raggett I and II and the following new prior art:

1. an article of Unix Review about X11R6 entitled "The rumored changes" by Reichart that teaches a a Fresco toolkit allowing the linking and embedding of object components, where the objects can be distributed between processes on a single machine or across the network;
2. a book entitled "Object oriented programming: an evolutionary approach" by Cox.

[I did not find the examiner s reasoning very convincing for the last part of the third portion and for claims 4−5 and 9−10.]

HTML+

I did not find the aforementioned HTML+ document but I found an HTML+ discussion document of November 8, 1993. "HTML+ is designed for use in the World Wide Web as a non−proprietary delivery format for wide−area hypertext. It embodies a pageless model making it suitable for efficient rendering on a wide range of display types including VT100 terminals, X11, Windows 3.1 and the Macintosh. HTML+ is based upon SGML and represents document elements at a logical level. Authors may choose to create HTML+ documents directly or to use filters to convert from other formats such as LaTeX, Framemaker, and Word for Windows."

The document refers to the IMG tag and its use to insert images in a document as characters.

HTML+ was not implemented as such but was probably influential. "HTML+ is a superset of HTML and designed to allow a gradual roll over from the earlier format, with features like tables, captioned figures and fill−out forms for querying remote databases or mailing questionnaires. Large documents can be split into a number of smaller nodes for reduced latency, with explicit or implicit navigation links. This draft also includes a proposal to add support for mathematical formulae. Authors can include limited presentation hints, and further control may eventually be possible via associated style sheets." HTML+ was cited in Netscape documentation in 1995−1998. However many functions were implemented in a different way. For instance Raggett proposes to use an IMAGE tag like this:

<IMAGE src="myimage.gif">alternate text</IMAGE>

Today to get the same result we write:

Raggett presents many font style elements. Today we prefer to use Cascading Style Sheets and, when we want to give different semantic values to things that are displayed in the same way, we write documents in the easier to parse and more flexible XML that we transform for display into HTML with an XSL style sheet.

Raggett also presents a way of including mathematical equations in HTML documents. For instance to represent $H(s) = \int_0^\infty e^{-st} h(t)\, dt$

HTML+ uses:

<math>

H(s) = +₀ e^{−st} h(t) dt

</math>

Interview request

The applicants (Eolas...) completed an Applicant Initiated Interview Request Form, in which they explained that the references of the examiner did not disclose or teach the features cited in claims 1 and 6.

More precisely they found that:

1. the rendering application and external editing application of Raggett operate in completely different ways to perform different functions;
2. the browser of Raggett could link to an external editing application whereas 5,838,906 automatically invokes an executable application in order to display the object and to enable in−place interactions;
3. Raggett said about the external editor that "you may want to be able to pop up a kind of editor for mathematics which might have menus" [the external editor seems similar to the equation editor of Microsoft, a plug−in which is or was external to Word]

Interview summary

The inventor made a presentation. It was agreed that the applicant would file a written response incorporating the presented arguments.

The interview summary contains:

- the presentation;
- various definitions from the Microsoft Press Computer Dictionary.

I only consider here the presentation slides.

The applicant defines:

- the scope of claims 1 and 6 as "Executable application is automatically invoked when an embed text format is parsed by the browser, in order to display the object and allow in−place interaction while the web page is displayed;"

- the Berners Lee reference as a specification of the HTML language;
- the Raggett references as a specification of static inline images;

He says that the external rendering application of Raggett references "would cease execution as it returned a static image to the browser, prior to the image being displayed to the user." For me this is a key point. The HTML/HTTP principle, which was also the principle of dumb terminal protocols like SNA/3270, is that to change the display and interact with the web site the user has to move to another page, the browser like the dumb terminal having only a viewer capability. 5,838,906 teaches away of this principle. The user stays on the same page, in which a graphical application is inserted.

I do not find the explanation entirely convincing. The applicant says that Raggett references teach implementing rendering application through Unix pipes, these pipes being treated as files by the calling program [the browser?] and that in this context, reading the data stream from a pipe is like reading from a file. [The rendering application can implement an interactive behavior if both pipe streams are kept opened and if the rendering application loops reading its input stream.] The written response (see below) is more precise. It says that the rendering application of Raggett receives the foreign data (for instance an equation), transforms the data into a static image, returns the image to Mosaic, and terminates prior to the image being displayed to the user.

Written response

The applicant said that the combination of the admitted prior art, cited in 5,838,906 and including Mosaic and OLE, of the IETF draft about HTML and of the Raggett references does not show the claimed features of 5,838,906. "There is no suggestion or teaching in Raggett I or II, singly or in combination, of modifying Berners−Lee and/or applicant admitted prior art to automatically invoke an external application to execute on a client computer, when an embed format is parsed, to display and interactively control an object in a display window in a document being displayed in a browser−controlled window on the client computer. [...] The secondary consideration of failure of others to follow Raggett references to implement the claimed technology and professional approval (presentations and a cover article in Dr Dobbs journal) further supports the conclusion of non obviousness."

In the detailed argument the applicant defines a Person Having Ordinary Skill in the Art (PHOSA) as "a person who is just graduating from a good computer science program at a college or a university, not a star student but just a typical, average student, or a person who has gained equivalent knowledge in the industry. The person knows how to do things in a conventional way but does not exhibit an unusual level of innovative thinking." This definition comes from an independent expert, the Professor Edward W. Felten, Professor of Computer Science at Princeton University.

In 1994, the PHOSA is familiar with:

1. Mosaic;
2. HTML;
3. the inline images as supported by the IMG tag.

The PHOSA "would be aware from using the IMG tag that image data can be maintained separately from the

HTML source page and can be referenced by a URL included in the IMG tag. [This is still the way it works today. In 1998 Brian Wilson called IMG "the main method for including multimedia content in an HTML document, accomplished via in−line graphics." The IMG tag turned to be able to accommodate video and VRML as well as images.] Thus, the PHOSA would understand that the statement in Raggett II that foreign data can be put in a separate file referenced by a URL is merely a restatement of the technique previously used by the IMG tag to create inline images inserted into the text."

Professor Felten further found that "the teaching in Raggett I and II to use Raggett s proposed EMBED tag within the FIG tag requires that Raggett s proposed EMBED tag return a static and non−interactive image."

The FIG element is a deprecated form of the IMG element "to define an image, with optional overlays, text elements and 'hotzones', to be inserted within a document. The structure of the contents of the FIG element expects a series of optional overlay images defined by OVERLAY elements, followed by an optional CAPTION element, followed by text to be presented as an alternative to the image(s) and which may contain normal text elements as well as hypertext links defined by A elements with SHAPE attributes to identify "hotzones" on the image, finally completed by an optional CREDIT element." It was typically used like in this example:

<FIG SRC=" pola.jpg">

<P>Select between:

<UL>

<LI><A HREF="../polaris/pol−pola.html#toc2" SHAPE="rect 20,276,217,392">Login control</A>

<LI><A HREF="../polaris/pol−pola.html#toc7" SHAPE="rect 243,277,741,457">ShoppingBasket control</A>

<LI><A HREF="../polaris/pol−pola.html#toc4" SHAPE="rect 16,484,202,506">Commit control</A>

</UL>

</FIG>

Today we rather use maps like this:

<map name="pola">

<area shape="rect" coords="20,276,217,392" href="../polaris/pol−pola.html#toc2" alt="Login control" target="_blank" />

<area shape="rect" coords="243,277,741,457" href="../polaris/pol−pola.html#toc7" alt="ShoppingBasket control" target="_blank" />

<area shape="rect" coords="16,484,202,506" href="../polaris/pol−pola.html#toc4" alt="Commit control" target="_blank" />

</map>

Professor Felten gave this rather convincing demonstration:

"The requirement that Raggett s proposed EMBED tag return only a static image is further reinforced by the discussion in Raggett 1 of active areas at page 13. The ISMAP attribute described with respect to he FIG tag causes the browser to send mouse clicks on a figure back to the server using a selected coordinate scheme. [...] The Web page author thus creates a semantic correspondence between areas of the figure and Web pages that can be retrieved by clicking over the various areas. If the figure displayed were to be interactively changed then this semantic correspondence would be destroyed. Further, a mouse click can have only a single function. Since the ISMAP feature causes the browser to send mouse clicks to the server, the mouse click cannot be utilized to interact with the image and the image must be static."

In the HTML 3 documentation the W3C describes the ISMAP attribute in the following way:

"An image map is a graphical map by which users can navigate transparently from one information resource to another. The ISMAP attribute identifies an image as an image map. The IMG element can then be used as part of the label for a hypertext link (see the anchor element). When the user clicks on the image the location clicked is sent to the server designated by the hypertext link." The W3C gives the following example:

<A HREF="http://machine/htbin/imagemap/sample">

<IMG SRC="sample.gif" ISMAP></A>

Therefore the applicant objected:

"The majority of 'impermissible hindsight' case law concerns situations where bits and pieces of the prior art are patched together utilizing the claims as a roadmap. Here the bits and pieces do not even exist but must be fundamentally changed before being pieced together. Accordingly, the prior art itself, without utilizing the teachings of the 5,838,906 patent to modify the teachings of the prior art, does not suggest or make obvious claims 1 and 6."

The applicant further observed that

1. the World Wide Web Talk Group eventually recommended to abandon the EMBED tag for technical reasons;
2. a paper entitled "Inserting objects into HTML", edited by Raggett and including Berners−Lee as an author defined the <OBJECT> tag to allow an HTML author to specify the data to be inserted into HTML documents as well as the code that can be used to display/manipulate that data. [This was in 1996, so after the 5,838,906 filing and the <APPLET> tag.]

This may mean that for Raggett EMBED and OBJECT were different things.

Dr Dobbs article

This article was mentioned by the applicant to show the professional approval of 5,838,906. It was published in February 1996 and entitled "Proposing a standard Web API". Its summary says:

"At last count, there were nearly a dozen APIs vying for hearts and home pages of Web developers. Our authors propose a standard API that leverages the concept of embedded executable content for interactive application development and delivery."

The authors are Dr Doyle, Cheong Ang and David Martin, the co−founders of Eolas. Dr Doyle and Cheong Ang also co−authored a paper entitled "Polymap: A Versatile Client−Side Image Map for the Web" that propose a mechanism (Polymapping) that stores the hot−spot information in an otherwise unessential part of the image file −− the application−specific field of existing common image formats. [Quite interestingly, Doyle seemed to have worked on mapping issues before moving to embedded objects − a bit like Raggett. In both cases Dr Doyle was probably on the leading edge and one of the first to patent. The hotspot patent of Dr Doyle is 4,847,604.]

"Proposing a standard Web API" teach us the genesis of the 5,838,906 invention. In the late 1980s, the National Library of Medicine began a "Visible Human Project" to create a standard database of human anatomy. Doyle group worked on solving problems related to both allowing interactive control of Visible Human data and distributing access to the system to scientists anywhere on the Internet. Medical visualization was demanding in file size, memory and processor power. In early 1993 Dr Doyle, Cheong Ang and David Martin saw Mosaic for the first time in a demo made by the NCSA director. [Mosaic was probably still alpha]. They were so impressed that they chose to integrate Mosaic in their medical visualization system. They meet the four conditions to make a significant invention:

1. an early knowledge of an innovation;
2. a motivation, which was to facilitate the access to Visible Human data;
3. the resources; their group had money and time presumably thank to the US government;
4. a feasible task of enhancing an existing program in order to practice the invention because (1) Mosaic sources were available (2) these sources were reasonably easy to read and modify by people having ordinary skill in the art.

They "designed and implemented an API for embedded inline applets that allowed a Web page to act as a container document for a fully interactive remote−visualization application, allowing real−time volume rendering and analysis of huge collections of 3−D biomedical volume data, where most of the computation was performed by powerful remote visualization engines."

"This work was shown to several groups in 1993, including many that were later involved in projects to add APIs and applets to Web browsers at places such as NCSA, Netscape, and Sun."

Their enhanced version of Mosaic, called WebRouser:

1. implemented an EMBED tag [different from the Raggett one], through which inline plug−in "Weblet" applications are supported in Web pages;
2. supported "Weblet" applications conforming to an Eolas Distributed Hypermedia Object Embedding

(DHOE);
3. supported the NCSA common client interface (CCI) to allow "Weblets" to drive the browser.

"DHOE and CCI collectively made up the Eolas Web API (WAPI) as supported in WebRouser." WAPI "exploits both the efficiency of X−events for communication of interaction events and graphic data and the flexibility of socket−based messaging for browser remote control and HTML rendering of Weblet−generated data." The impression I got from reading the example and the article was that WAPI was probably efficient and flexible but also as cumbersome as the X API.

Declaration by Doyle

Dr Doyle declared that the earliest demonstrations of the 5,838,906 technology given in late 1993 and early in 1994 "were very enthusiastically received by the scientific and technical community", including:

- the Director of the National Library of Medicine and Director of the National Coordination Office for High Performance Computing and Communication (HPCC);
- SIGWEB, a special interest group for the World Wide Web founded by Dr Doyle and including Xerox PARC, Sun Microsystems, SCO and Silicon Graphics;
- Silicon Graphics;
- a "Medicine meets Virtual Reality" conference;
- universities of Michigan and Pennsylvania.

Second non−final action

The examiner rejected again all claims for obviousness.

In this communication the examiner agreed that the combination of the admitted prior art, of the IETF draft of Berners−Lee and of the Raggett references did not explicitly teach "a method that enables interactive processing of said object". But he found a new ground of rejection, a document by G. Toye and others entitled "A Methodology and Environment for Collaborative Product Development, Proceedings, Second Workshop on Enabling Technologies: Infrastructure for Collaborative Enterprises, 1993, IEEE, pp. 33−47" published on April 22, 1993. The examiner found that this document discloses a distributed hypermedia system in which the hypermedia browser allows a user to interactively process an object embedded within a distributed hypermedia document and makes obvious the claims of 5,838,906.

In response to the improper hindsight reasoning argument, the examiner explained that "any judgment about obviousness is in a sense necessarily a reconstruction based on hindsight reasoning. But so long as it takes into account only knowledge that was within the level of ordinary skill at the time the invention was made, and does not include knowledge gleaned only from the applicant s disclosure, such a reconstruction is proper."

The examiner commented the declaration of Dr Doyle in this interesting way:

"Although the Doyle declaration describes the reaction of various audiences and experts as favorable, the

declaration usually states these reactions were favorable without explaining what these reactions were and the reason they were favorable. There are many possible explanations for the favorable reactions. [...] The favorable reactions may have been due to the inventors allocation of resources to implement an obvious function that the WWW community had so far been unable to devote resources to implementing."

I think that the examiner is correct in saying that (1) the Doyle declaration usually states these reactions were favorable without explaining what these reactions were (2) there many possible explanations for the favorable reactions. However I disagree with the idea that the WWW community would have been unable to devote resources to implementing an obvious function. The examiner is correct in saying that system design is incremental but the rule in this industry is to write first a bogus version including everything that can be envisioned and then to enhance the first version. A very high development cost could deter a community to implement a function that appears as useful and obvious but it does not seem the case here. We read in the Dr Dobbs article that the inventor saw Mosaic for the first time early in 1993 and demonstrated the invention late in 1993. So he had no time to design and implement something costly. We also know that the first implementation was leveraging on X−events and on the Mosaic CCI and was relatively simple.

Toye paper

I know "A Methodology and Environment for Collaborative Product Development, Proceedings, Second Workshop on Enabling Technologies: Infrastructure for Collaborative Enterprises, 1993, IEEE, pp. 33−47" only from the applicant response.

The applicant says that:

- "Toye is a paper describing a SHARE project that seeks to apply information technologies in helping design teams gather, organize, re−access, and communicate both informal and formal design information to establish a shared understanding of the design and design process."
- SHARE has a component called NoteMail that includes a notebook. "Any application that displays through an X−server can insert its output (audio, video or graphics) dynamically into a notebook page through a dynamic window. [...] First, after a data object or file is selected by a user for inclusion in a notebook, the system will invoke the appropriate application for display in the notebook. Subsequently selecting the displayed data with the mouse will restart the original application so that data can be edited or updated without leaving the network environment."

[If I understand correctly, NoteMail implements something like the structured storage and clipboard subset of OLE combined with remote database persistence.]

Applicant s response

The applicant reminded that "the establishment of a prima facie case of obviousness requires that the claimed combination cannot change the principle of operation of the primary reference or render the reference inoperable for its intended purpose." Then he said that the combination of Toye with the combination of the admitted prior art, of the IETF draft of Berners−Lee and of the Raggett references would change the operation of the latter combination and render it inoperable for its intended purpose.

The applicant explained that the Mosaic, Berners−Lee, Raggett I and II combination teaches a distributed model "in which static pages can be published by everyone, on a server anywhere in the world, and read by everyone. The pages are connected by simple, unidirectional links that are used only to navigate from one page to another. A page is created and edited by its authors, using a separate editing application, and is viewed, but not modified, by its readers using a separate browser application." The applicant found that, in contrast, Toye teach the use of a centralized database for storage of a workgroup s documents. The applicant concludes that "any attempt to combine the centralized storage of referenced objects taught by Toye with the Mosaic, Berners−Lee, Raggett I and II combination would change the basic principle of operation of the combination."

[I find the applicant reasoning interesting albeit unconvincing. The examiner considered the NoteMail component of SHARE in his action whereas the applicant s argument is based on another component, called Distributed Information Services (DIS), which is, according to the applicant, "a centralized information storage and management service for all the data associated to a design." And the question is not whether the whole SHARE system combined by the Mosaic, Berners−Lee, Raggett I and II combination make 5,838,906 obvious but whether the SHARE system discloses functions, which make 5,838,906 obvious when combined with the Mosaic, Berners−Lee, Raggett I and II combination. I also think that the Mosaic, Berners−Lee, Raggett I and II combination describes a system in which pages can be static or dynamically generated by servers. For instance Raggett describes an ISMAP attribute that identifies an image as an image map. When the user clicks on the corresponding image the location clicked is sent to the server designated by the hypertext link. This piece of information is useful only if the hypertext link points out a server program or script. However the applicant s reasoning is interesting because the combination teaches that the only way to change what is displayed is to call a server whereas 5,838,906 not only allows but also forces the user to stay on the same page to interact with the embedded application. So, in one way, 5,838,906 changes the basic principle of operation of the combination and, hence, any attempt of the examiner to combine the combination with other prior art will also change the basic principle of operation of the combination, which may mean that the only relevant prior art is the prior art that teaches the same change.]

The applicant also found that:

1. Toye does not disclose a distributed hypermedia system in which the hypermedia browser allows a user to interactively process an object embedded within a distributed hypermedia document. [The applicant uses the same reasoning as above for the "distributed" term. For the "hypermedia" term I tend to agree with the applicant who essentially says that, to be combined with the Mosaic, Berners−Lee, Raggett I and II combination a system must use a multimedia format functionally (inline images, links) and technically (textual) close to HTML.]
2. There is no motivation or teaching in the admitted prior art, IETF draft, and Raggett and Toye references to combine the references to make the claimed invention obvious. The applicant says [rightfully in my opinion] that "the fundamentally different problems solved by the Mosaic, Berners−Lee, Raggett I and II systems (HTML browser) and the Toye system teach away from a combination that would make the claimed invention obvious. A possible source for a motivation to combine references is the nature of the problem to be solved. MPEP 2143.01. Here the Mosaic, Berners−Lee, Raggett I and II combination and the Toye system solve problems of a completely different nature and have structures and implementations that are fundamentally incompatible."