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# APPELLANT'S BRIEF

2006- 1371

# IN THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

## in re PETRUS A.C.M. NUIJTEN

APPEAL FROM THE BOARD OF PATENT APPEALS AND INTERFERENCES OF THE UNITED STATES PATENT AND TRADEMARK OFFICE
APPEAL No. 2003-0853 (Patent Application 09/211,928)

**PRINCIPAL BRIEF OF APPELANT Petrus A.C.M. Nuijten**

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# CERTIFICATE OF CORPORATE INTEREST

The undersigned attorney certifies as follows:

1. The full name of every party or amicus represented by me is Petrus A. C.M. Nuijten.
2. The name of the real party in interest is U.S. Philips Corporation.
3. All parent corporations and publicly held companies that own 10 percent or more of the stock of the party represented by me are:
    a. Philips Holding U.S.A., Inc.
    b. Koninklijke Philips Electronics N.V. (aka Royal Philips Electronics NV)
4. The names of all law firms and partners or associates that appeared for the party now represented by me in the agency below, or are expected to appear in this court are:
    a. Jack E. Haken
    b. Larry Liberchuk
    c. Aaron Waxler
    d. Schmeiser, Olsen & Watts LLP

e. Jack P. Friedman

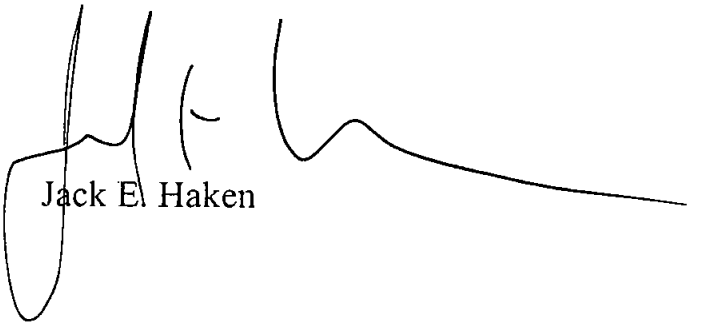
f. Michael E. Belk

g. Michael M. Marion

h. Algy Tamoshunas

Briarcliff Manor, New York

July 6, 2006



Jack E. Haken

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## Jurisdictional Statement

This is an appeal from a final decision of the Board of Patent Appeals and Interferences (hereinafter "the Board") of the United States Patent and Trademark Office. The United States Court of Appeals for the Federal Circuit has jurisdiction pursuant to 35 U.S.C.141. The Decision of the Board was mailed on January 24, 2006. Appellant timely filed a notice of appeal with the USPTO and this Court on March 17, 2006.

## Statement of the Issues

The issues in this appeal are whether the Board erred when it affirmed the Patent Examiner's final rejections of Claims 14 and 22 – 24 of Mr. Nuijten's patent application under 35 U.S.C. 101 as being directed to non-statutory subject matter. More specifically the Court must decide whether the invention of a signal, which is otherwise patentable when stored on a physical storage medium, is in and of itself patentable subject matter. Mr. Nuijten asserts that signals *per se,* as described in those claims, constitute patentable subject matter under the U.S. patent statutes.

## Statement of the Case

Petrus A.C.M. Nuijten filed United States Patent Application serial number 09/211,928 on December 15, 1998 for his invention "Embedding Supplemental Data in an Encoded Signal". The U.S. Patent Application claimed priority under 35 U.S.C. 119 of a European Patent Application number 97204056.2, which was filed on December 22, 1997. The U.S. Patent Application is assigned of record to U.S. Philips Corporation.

The Patent Examiner made a final rejection of application claims 14, 15 and 22-24 on the basis that those claims were directed to non-statutory subject matter [A78]. The Examiner also finally rejected Claims 1, 5, 6, and 11 –24 under the judicially created doctrine of double patenting.

Mr. Nuijten duly appealed from the Examiner's final rejection to the Board. On January 24, 2006 the Board mailed its Decision on Appeal. The Board reversed the Examiner's rejections for double patenting as well as the Examiner's rejection that Claim 15 was directed to non-statutory subject matter. The Board affirmed the rejection of Claims 14 and 22-24 and found that such claims were not directed to statutory subject matter under 35 U.S.C. 101 [A18].

## Statement of Facts

The invention described and claimed in Mr. Nuijten's patent application is a technology for identifying and protecting property rights in audio, video, electronic documents and similar works, of the type that is commonly known as signal watermarking. Watermarks (sometimes also referred to as "labels", "tags" or "signatures") take the form of supplemental data that are intimately embedded, for example, in audio and video signals and electronic documents to identify the source or copyright status of the programs and content. Watermark technology can be used to provide legal proof of copyright ownership, allows tracing of piracy and supports the protection of intellectual property rights [A21].

Watermarks have typically been embedded in electronic signals that are to be recorded as physical structures in CD, DVD and magnetic media and they remain embedded as those signals are stored, retrieved, transmitted by broadcast, Internet communications etc. and decoded for play-back.

Prior art watermarking technology embedded watermarks as extra digital data words that were mixed into encoded multimedia data signals. Under optimal conditions, the watermark data should be imperceptible to a user who listens to audio or views video programs. However, Mr. Nuijten's

patent application teaches that added watermark data can manifest as noise in the program sound or picture and that prior art techniques for watermarking would generate noise at levels that would severely degrade the quality of high resolution sound and picture transmissions [A22].

Mr. Nuijten discovered a technique for compensating the noise that is generated when watermark information is mixed with a signal. His invention adds additional compensating data ahead of a digital watermark in a manner that cancels-out and thus reduces some of the noise from the following watermark that would otherwise cause problems when the signal is decoded for playback.

Claims 1, 5, 6 and 16-18 describe Mr. Nuijten's invention as a conventional process while Claims 11-13 and 19-21 describe the same invention in terms of apparatus [A119–A121]. These claims are thus directed to traditional, statutory subject matter and have already been found to be allowable over the prior art and otherwise in compliance with the statutory requirements for patentability.

Independent Claim 14, which is the subject of this appeal, is directed to an encoded signal that includes a sequence of samples that represent information[1]:

> "14. **A signal** with embedded supplemental data, **the signal being encoded** in accordance with a given encoding process and selected samples of the signal representing the supplemental data, and at least one of the samples preceding the selected samples is different from the sample corresponding to the given encoding process. [emphasis added]"

Claims 22 –24 depend from independent claim 14 and respectively describe that the types of information carried by the claimed signal are a watermark data pattern, video and audio.[2]

Claim 15, which the Board held to be patentable, describes Mr. Nuijten's invention as a storage medium, on which is stored precisely the

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[1] The patent specification describes preferred embodiments of the invention where the encoded information represents the voltage level of electrical audio or video signals and the samples are binary values of sequential bits of digital data [A27, A28].

[2] The preamble of each of dependent claims 22 –24 starts with the phrase "the method of claim 14". Neither the patent examiner nor the Board objected to this nomenclature and they both treated these claims as being directed to the same class of subject matter as was claim 14. We take the same approach in this brief with the expectation that, if Claim 14 is found to define patentable subject matter, any informality in claim preambles will be corrected before a patent issues.

same signal that is claimed, *per se*, in rejected claim 14. Thus, the only contested issues in this case flow from the form the claims presented.

## Summary of the Arguments

The Board argued that signals do not fall within the four categories enumerated in 35 U.S.C. 101 and furthermore that they are excluded under the judicially created "abstract idea" exception to patentability. Both arguments are wrong as a matter of law. There is no basis in the statutes or case law to deny U. S. patent protection for novel and unobvious signals.

The claimed signals are man made products and have technical applicability. They are not abstract ideas.

The law does not require that all patentable inventions need to be pigeonholed into one of four express categories enumerated in Section 101.

The Board has applied artificial and arbitrary boundaries to the categories enumerated in §101. Claims 14 and 22 – 24 can fairly be characterized as describing a machine, an article of manufacture and/or a process.

The Patent and Trademark Office policy regarding patentability of signals is confused, arbitrary and capriciously applied.

## Argument

**The applicable standard of review:**

The Court reviews legal conclusions as to whether patent claims are directed to statutory subject matter *de novo*. (*Arrhythmia Research Tech. v Corazonix,* 958 F.2d 1053).

**1. The claimed signals are man made products and have technical applicability. They are not abstract ideas.**

The Supreme Court has construed §101 broadly, noting that Congress intended statutory subject matter to "include anything under the sun that is made by man". Despite this seemingly limitless expanse, the Court has specifically identified three categories of unpatentable subject matter: "laws of nature, natural phenomena, and abstract ideas." (*AT&T Corp. v. Excel Communications, Inc.* 172 F. 3d 1368, (Fed. Cir. 1999) citing *Diamond v Chakrabarty* 447 U.S. 303 (1980) and *Diamond v. Diehr* 450 U.S. 175 (1981)).

In a single sentence and without any logical or legal argument, the Board postures that the signal of Claims 14 and 22-24 must be abstract ideas because they have no "physical attributes". This is a novel and inappropriate

test. Neither the Supreme Court nor this Court has ever advocated that the presence or absence of physical attributes is a proper test to decide if a patent claim is only directed to an abstract idea.

Furthermore, this Court's predecessor has held that "the view that there is nothing necessarily physical about signals is incorrect" (*Arrhythmia (supra)* citing *In re Taner* 681 F.2d 787, 790, (CCPA 1982)). The CCPA recognized the physical nature of signals in the computing and communications arts (Analyzing the Patentability of "Intangible" yet "Physical" Subject Matter, Sam S. Han; 3 Colum. Sci. & Tech. L. Rev. 2; citing *In re Musgrave*, 431 F.2d 882, 893 (C.C.P.A. 1970) and *In re Foster* 438 F.2d 1011 (C.C.P.A. 1971)).

This Court has examined the abstract idea exception at length in the context of patent claims that include mathematical algorithms. The fundamental principle of those cases is that a mathematical concept is nothing more than a law of nature or an abstract idea until it has been reduced to some practical application, rendering it useful. (*AT&T Corp. v. Excel Communications, Inc. supra*). It is not necessary that the idea be applied to perform a physical transformation or conversion of subject matter from one state to another. The Supreme Court has noted that physical

transformation is one example of a patentable application of an abstract idea, but it is not an exclusive requirement for patentability. (*AT&T*, explaining *Diamond v. Diehr*).

The Patent and Trademark Office also teaches its Examiners that a computer-related process that affects a practical application of the technological arts is patentable. The M.P.E.P. (Patent and Trademark Office, U.S. Department of Commerce, Manual of Patent Examining Procedure § 2106; 8th edition rev. 2; May 2004) specifically mentions a process of digital filtering to remove noise from a signal as an example of a practical application of a technological art.[3]

Transformation of values of signals from one form to another to yield a number that has a specific meaning yields a concrete, tangible result. It is not an abstract idea and thus is a patentable process (*Arrhythmia Research Tech. v Corazonix Corp.*, 958 F.2d at 1059).

The requirement for a "tangible result" does not necessarily mean that a claim must either be tied to a particular machine or apparatus or that it

[3] M.P.E.P. 2106 (IV. B. 2.(b)) **Statutory Process Claims – Safe Harbors:** states. "Examples of this type of claimed statutory process include the following: ... – A digital filtering process for removing noise from a digital signal comprising the steps of calculating a mathematical algorithm to produce a correction signal and subtracting the correction signal from the digital signal to remove the noise."

must operate to change articles or materials to a different state or thing. However, the tangible result requirement does mean that the claim must recite more than a Section 101 judicial exception (Interim Guidelines for Examination of Patent Applications for Subject Matter Eligibility, United States Patent and Trademark Office OG Notices: 22 November 2005 at Page 11).

Likewise, the requirement for a "concrete result" is whether the outcome of the claimed invention is predictable or repeatable. (Interim Guidelines, *supra,* citing *In re Swartz* 232 F. 3d 862, 864 (Fed. Cir. 2000).

The physical limitation requirement was integral to the old Freeman-Walter-Abele test for patentable mathematical subject matter. (*In re Abele* 684 F 2d. 902, 907 (C.C.P.A. 1982)) That test has now been abandoned by this Court (*State Street Bank & Trust Co. v Signature Financial Group, Inc.* 149 F.3d 1368, 1374 (Fed. Cir. 1998), *AT&T Corp. v. Excel Communications, Inc., supra*).

The Board's reliance upon a physical attribute test is incorrect as a matter of law. As demonstrated below, claims 14 and 22-24 describe subject matter that is a practical and useful application of a technological art and the claimed invention is thus patentable subject matter.

The Board has not made a *prima facie* case that the result of the appealed claims is unpredictable or falls within a judicially created exception to patentability.

**2. The law does not require that all patentable inventions need to be pigeonholed into one of four express categories enumerated in §101.**

The Board further held that the appealed claims were unpatentable because they did not fall within the rigid boundaries of a series of tests that the Board suggests as definitions of the four §101 categories. Again, the Board's analysis is improper as a matter of law. This Court recognizes that it is often difficult to determine which of the categories are included in claimed subject matter and has held that the question of whether a claim encompasses statutory subject matter should not focus on which of the four categories a claim is directed to –process, machine, manufacture or composition of matter – but rather on the essential characteristics of the subject matter, in particular, it practical utility (*State Street Bank & Trust Co. v Signature Financial Group, Inc* 149 F.3d at 1375).[4]

[4] Of course, any conclusion of law that a particular claim satisfies the requirements of §101would necessarily imply that the invention falls into at least one of the enumerated categories. (*v.* footnote 9 in *State Street Bank and Trust Company v. Signature Financial Group, Inc.;* 149 F3d. at 1375).

As demonstrated below, the appealed patent claims fairly describe a machine, an article of manufacture and/or a process. They define patentable subject matter notwithstanding that they may span, or even fall between the postulated boundaries of the §101 categories.

**3. The Board has applied artificial and arbitrary boundaries to the categories enumerated in Section 101.**

The Board's decision applied an arbitrary set of tests to determine whether the claimed subject matter was a process, machine, manufacture or composition of matter. The Board's tests are again unsupported by law or logic. Even if it were correct to test claims for rigid compliance with the four categories, which it is not, the Board's tests are arbitrary and improper.

**Process:**

The definition and legal application of the term "process" has a confused history in American patent law. The case law should be considered and applied with careful attention to a changing statutory framework. The Patent Act of 1793 (Patent Act of Feb 21, 1793, ch. 11, s1, 1 Stat. 318) defined statutory subject matter as "any new and useful **art**, machine, or composition of matter or any new or useful improvement [thereof]"

(emphasis added). Not until the patent laws were recodified in 1952, did Congress replace the word "art" with the word "process". Although the term "process" was not added to 35 U.S.C. 101 until 1952, a process historically enjoyed patent protection because it was considered a form of "art" as the term was used in the 1793 Patent Act (*Diamond v. Diehr* 450 U.S. at 163).

Congress expressly and expansively defined the term "process" in the 1952 Act (35 U.S.C. 100(b)). That definition:

> "(b) The term 'process' means any **process**, art or method, and includes a new use of a known **process**, machine, manufacture, composition of matter, or material." [emphasis added]

at first appears to be circular; but as P.J. Federico explained in his Commentary on the New Patent Act, (35 U.S.C.A., Vol. 1, p.25 (1954); reprinted in 75 J. Pat. & Trademark Off. Soc'y 161 (March 1993)) :

> "[§101] closely follows the wording of the corresponding part of the old statute with the exception that ... the word "process" is used in place of the word "art" that appeared in the old statute. The word "art" in the corresponding section of the old statute had been interpreted by the courts as being practically synonymous with process or method. ... The word "process" has been used in the section 101 as its meaning is more rapidly grasped than "art" which would here require some interpretation. The first part of the definition of "process" in section 100(b) states that the word means process or method, as those terms have long been interchangeably used in the patent law, and

> through some superabundance of caution by someone who feared that there might possibly be some loss of a shade of meaning in dropping the word "art", it was restored in the definition."

Thus prior to the 1952 recodification, the term "process" was used to refer to one form or species of the broader, catch-all category ""arts"[5] while after 1952 the same term was given no less than the broad definition previously associated with the word "arts", "technological arts" or "useful arts". The pre-1952 case law needs to be read in this context.[6]

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[5] The Board's reliance on dicta in *Corning v. Burden* (56 U.S. 252 (1853)) is misplaced, the claims at issue in *Corning* were directed to the function of a machine, but the case is historically instructive. Justice Grier explained:

> "a process, *eo nomine*, is not made the subject of a patent [under the Patent Act of 1836 Ch. 357, 5 Stat. 117 (July 4, 1836)]. It is included under the general term "useful art". An art may be one or more processes or machines in order to produce certain result or manufacture. The term machine includes mechanical device or combination of mechanical powers or devices to perform some function and produce a certain effect or result. But when the result or effect is produced by chemical action, by the operation or application of some element or power of nature, or of one substance to another, such modes, methods or operations are called processes. ... It is when the term processes is used to represent the means or methods of producing a result that it is patentable, and it will include all methods or means which are not effected by mechanism or mechanical comnations" (*Corning* at 267-268.)

[6] Justice Grier gave further explanation of the historic meaning of the term "art" in his dissent to the Supreme Court's holding in *O'Reilly v. Morse* (56 U.S. 62 at 130,131 (1853)

Without citing any authority, the Board postures that a process must comprise "a series of acts" and concludes that the claims do not recite acts. The Board is wrong on two counts:

First, there is no support for the proposition that a process, as defined in the current patent statutes, must include an act or series of acts. As used in the patent statutes, a process is an expansive inventive category, broadly defined by Section 100(b) to include not only a series of acts (traditional processes), but also arts and new uses for known machines, manufacture compositions of matter and materials.

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> "It is not easy to give a precise definition of what is meant by the term 'art' as used in the acts of Congress – some, if not all, of the traits which distinguish an art from the other legitimate subjects of a patent, are stated with clearness and accuracy by Mr. Curtis, in his Treatise on Patents " The term art, applies", says he, "to all those cases where the application of a principle is the most important part of the invention, and where the machinery, apparatus, or other means, by which the principle is applied, are incidental only and not of essence of his invention . It applies also to all those cases where the result, effect or manufactured article is old, but the invention consists of a new process or method of producing such result, effect, or manufacture [original citation omitted]."

Recall that the majority found Morse's broad, final patent claim for the electric telegraph invalid because it was overly broad (akin to a modern rejection under 35 U.S.C. 112), and not because it contained unpatentable subject matter of the character seen in a §101 rejection.

Furthermore, claim 14 does describe acts that have been performed upon the signal (i.e. encoding in accordance with an encoding process and embedding supplemental data.).

Thus Claims 14 and 22 -24 describe a process and meet the literal statutory requirements of §101.

**Machine:**

The Board's view that machines must have "physical structure or substance" is likewise unsupported by law.

The Board entirely relies on two mid-nineteenth century cases, *Burr v. Duryee* 68 U.S. 531 (1863) and *Corning v. Burden* 56 U.S. 252 (1853) to support its argument, but those cases, founded in mechanical technologies of the industrial revolution, are inapplicable to the questions in the present case and even the Board's opinion recognized that the language quoted in support of its position[7] simply does not make any sense when applied to twenty first century electrical and computer-based machinery. The questions before the Court in both cited cases related to the propriety of functional claiming under the 1836 Patent Act and the language that the Board relies on is only *dicta*.

[7] "The term machine includes every mechanical device or combination of mechanical powers and devices ... ." (Decision on Appeal at p.8.[A8])

The signal of Claims 14 and 22 -24 may fairly be characterized as a machine because it effects the technological result of storing and transmitting the encoded content (music, video programs, documents etc.) and thus the claims meet the literal requirements of §101.

**Manufacture:**

The Board argues [Decision on Appeal at p.9.[A9]] that the definition of "manufacture" adopted by the Supreme Court in *Diamond v. Chakrabarty* (444 U.S. 303, 308) requires a tangible article prepared from materials. However, this Court should appreciate that neither the dictionary definition referenced in *Chakrabarty* nor the Supreme Court's analysis, makes any mention of the tangible physical nature of either the articles of manufacture or the materials from which they are produced. To the contrary, Diamond found that "manufacture" in §101 was an "expansive term" modified by the term "any" and that Congress plainly contemplated that through its use the patent laws would be given wide scope.

The plain and ordinary meaning of the term "materials" (which is found both in the abovementioned *Chakrabarty* definition of "manufacture" and in §100(b) of the 1952 patent statutes) does not require either tangibility or physical substance

> **material** 1. what a thing is, or may be made of; elements, parts or constituents: as raw material. 2. ideas, notes, observations, sketches, etc that may be worked up or elaborated: data 3 [cloth or fabric]. 4 tools, implements, articles, etc needed to make or do something." (Webster's New World Dictionary of the American Language, College Edition The World Publishing Company 1951-1957).

It also seems that the drafters of the 1952 patent statutes considered "material" to have a different and presumably broader meaning than a composition of matter. Note the juxtaposition of the terms in §100(b).

> "(b) The term 'process' means any process, art or method, and includes a new use of a known process, machine, manufacture, **composition of matter**, or **material**." [emphasis added]

The signal of Claims 14 and 22 – 24 is a material because it is a tool or implement needed to reproduce the recorded or transmitted content and the claims thus meet the literal requirements of §101.

**4. A signal is a process.**

As explained above, the prior U.S. Patent Acts of 1793, 1836, 1870 and 1874 defined statutory subject mater as "any new or useful art, machine, manufacture or composition of matter or any new and useful improvement [thereof]". The Patent Act of 1952 adopted the current "process, machine, manufacture or composition of matter" terminology of §101, but through 35

U.S.C. 100(b), the 1952 statutes expansively define the term "process" and thus capture all that had been patentable under the historic statutes.

Signaling and signals are technological arts[8]. The signals defined by the appealed claims are creations of man, encoded by a process and then further modified by adding additional information to achieve a technologically useful, concrete and tangible result; i.e. noise reduction. They represent the essence of technological creativity and are process within the meaning of Sections 100 and 101.

[8] **art** 1. human ability to make things; creativeness. 2. skill,. 3. any specific skill or its application. ... 6. products of creative work. . (Webster's New World Dictionary of the American Language, College Edition, The World Publishing Company 1951-1957)

**5. The Patent and Trademark Office policy regarding patentability of Signal Claims is confused, arbitrary and capriciously applied.**

The USPTO has, for more than ten years, permitted, and even advocated signal claims as patentable subject matter. Former Assistant Commissioner Stephen Kunin tells us (Patent Eligibility of Signal Claims, 87 Pat. & Trademark Off. Soc'y 991, 996 (December 2005)):

> "Training materials were distributed by the PTO to teach the application of [The Patent & Trademark Office's 1996 Examination Guidelines (The Examination Guidelines for Computer-related Inventions 61 Fed. Reg. 7478 (1996))] and inside these training materials, which were published on March 28, 1996, there was a new kind of claim listed as Example 13 under Automotive Manufacturing Plant. It was 'A computer data signal embedded in a carrier wave comprising ... an encryption segment'. The example was accompanied by an analysis of the claim and the signal claim was determined to be statutory subject matter. In Appeal 2,002-1554 in the case *Ex parte Rice* [Application 08/003,996, (USPTO B.P.A.I. 2003 unpublished)] the BPAI reversed the examiner's rejection of signal claims as directed to non-statutory subject matter under 35 U.S.C. 101 holding that electromagnetic signals, although "transitory and ephemeral in nature" are statutory subject matter."

The patentability of signal claims was and still is also supported by the USPTO Manual of Patent Examining Procedure (M.P.E.P.) (Patent and Trademark Office, U.S. Department of Commerce, Manual of Patent

Examining Procedure § 2106; 8th edition rev. 2; May 2004) and was widely reported in the legal and engineering press[9].

On November 22, 2005, The USPTO published new Interim Guidelines for Examination of Patent Applications for Subject Matter Eligibility (OG Notices 22 November 2005) that purportedly adopts USPTO policy to this Court's decisions in *State Street Bank & Trust Co. v Signature Financial Group, Inc* and *AT&T v Excel Communications*. However the Interim Guidelines also contained a Section labeled Annex IV(c) [Addendum b1-b2] that, without reference to any recent case law[10], or opportunity for public comment[11], arbitrarily reversed the USPTO's

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[9] Patenting Signals; Richard H. Stern; IEEE Micro March/April 1988 page 6; A New Frontier in Patents: Patent Claims to Propagated Signals, Jeffrey R. Kuester et al, 17 J. Marshall J. Computer & Info. L. 75 (1988); Patenting Propagating Data Signals: What Hath God Wrought; Gregory A. Stobbs, IEEE Communications Magazine July 2000, page 98; Analyzing the Patentability of "Intangible" Yet "Physical" Subject Matter; Sam S. Han; 3 Colum. Sci & Tech. L. Rev. 2 (2002).

[10] The most modern case cited in Annex IV(c) of the Interim Guidelines is *Diamond v Chakrabarty (1980)*.

[11] Approximately one month after issuing the Interim Guidelines, The USPTO sought public comment on those guidelines. ((Request For Comments on the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility 70FR 74451 December 20, 2005). This request for comments again casts doubts on the Agency's conviction that the analysis in Annex IV(c) of the Interim Guidelines and the parallel

policy in regard to signal claims and advised them to be non-statutory. Annex IV(c) has been referenced and largely paraphrased in the Board's analysis in this case: that signals do not fit into any of the four enumerated categories of section 101, and suffers from the same deficiencies noted above.

Significantly, even the authors of Annex IV(c) recognize that there are counterarguments to their position:

> "On the other hand, from a technological standpoint, a signal encoded with functional descriptive material is similar to a [patentable] computer-readable memory encoded with functional descriptive material, in that they both create a functional interrelationship with a computer. In other words, a computer is able to execute the encoded functions, regardless of whether the format is a disk or a signal.
>
> These interim guidelines propose that such signal claims are ineligible for patent protection because they do not fall within any of the four statutory classes of Sec. 101. Public comment is sought for further evaluation of the question." (Interim Guidelines for Examination of Patent Applications for Subject Matter Eligibility (OG Notices 22 November 2005 at page 27 of 28)

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analysis of the Board in this case is correct. Question 5 of the Request for Comments asks the public:

> "(5) Annex 4 to the Patent Subject Matter Interim Guidelines explains why the USPTO considers claims to signals per se, whether functional descriptive material or non-functional, descriptive material, to be nonstaturory subject matter. Does the USPTO analysis represent a reasonable extrapolation of relevant case law? .... ."

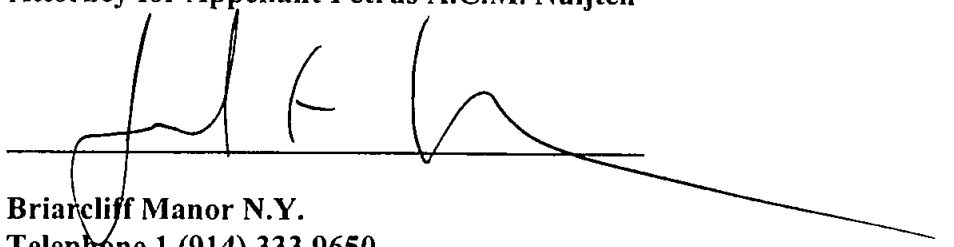
In the absence of clear direction in the form of controlling precedents from this Court, the abrupt reversal of PTO policy, as mirrored in the decision of the Board is arbitrary and capricious and has the effect of a denial of due process of law. It should be reversed.

## Conclusions

The signals set forth in Claims 14 and 22 – 24 are patentable matter. This Court should reverse final rejection of the Patent Examiner and the Decision of the Board and find that the claims on appeal are patentable.

Respectfully Submitted,

**Jack E. Haken**
**Attorney for Appellant Petrus A.C.M. Nuijten**



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**July 7 , 2006**

# ADDENDUM - DECISION OF THE USPTO B.P.A.I.

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES



Ex parte PETRUS A.C.M. NUIJTEN

Appeal No. 2003-0853
Application 09/211,928[1]

ON BRIEF

HAIRSTON, BARRETT, and MacDONALD, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 1, 5, 6, and 11-24. Claims 2-4 and 7-10 are objected to.

We affirm-in-part.

[1] Application for patent filed December 15, 1998, entitled "Embedding Supplemental Data in an Encoded Signal," which claims the foreign filing priority benefit under 35 U.S.C. § 119 of European Patent Office (EPO) Application 97204056.2, filed December 22, 1997.



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## BACKGROUND

The invention relates to a method and arrangement for embedding supplemental data in a signal, a signal with embedded supplemental data, and a storage medium having stored thereon a signal with embedded supplemental data.

Claims 1, 14, and 15 are reproduced below.

1. A method of embedding supplemental data in a signal, comprising the steps of:

encoding the signal in accordance with an encoding process which includes the step of feeding back the encoded signal to control the encoding; and modifying selected samples of the encoded signal to represent the supplemental data prior to the feedback of the encoded signal and including the modifying of at least one further sample of the encoded signal preceding the selected sample if the further sample modification is found to improve the quality of the encoding process.

14. A signal with embedded supplemental data, the signal being encoded in accordance with a given encoding process and selected samples of the signal representing the supplemental data, and at least one of the samples preceding the selected samples is different from the sample corresponding to the given encoding process.

15. A storage medium having stored thereon a signal with embedded supplemental data, the signal being encoded in accordance with a given encoding process and selected samples of the signal representing the supplemental data, and at least one of the samples preceding the selected samples is different from the sample corresponding to the given encoding process.

REFERENCES

The examiner relies on the following references:

| | | |
|---|---|---|
| Bender et al. (Bender) | 5,689,587 | November 18, 1997 |
| Bruekers et al. (Bruekers) | 6,157,330 | December 5, 2000 (filed January 26, 1998) |

THE REJECTIONS

Claims 14, 15, and 22-24 stand rejected under 35 U.S.C. § 101 as being directed to nonstatutory subject matter.

Claims 1, 5, 6, and 11-24 stand rejected under the judicially created doctrine of obviousness-type double patenting over claims 1-3, 8, 10, 11, 12, 15, 17, and 19-25 of Bruekers in view of Bender.

We refer to the final rejection (Paper No. 11) (pages referred to as "FR__") and the examiner's answer (Paper No. 16) (pages referred to as "EA__") for a statement of the examiner's rejection, and to the brief (Paper No. 15) (pages referred to as "Br__") and reply brief (Paper No. 17) (pages referred to as "RBr__") for a statement of appellant's arguments thereagainst.

OPINION

Nonstatutory subject matter

The examiner states that the claims are directed to nonstatutory subject matter because (FR3): "The recitation of the data characteristics of a signal is not a practical application within the technological arts. The recited characteristics are a



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description of the signal itself and not a process that can be performed by a computer when imparted with the requisite functionality."

Appellant argues that the examiner has not provided any reference or other support for his position and without such reference or other support, the rejection is legally insufficient and thus improper (Br4). It is noted that MPEP § 2106 IV.B.1(c) states that "a signal claim directed to a practical application is statutory regardless of its transitory nature." Appellant argues that the signal is humanly designed and cannot be considered a nonstatutory natural phenomenon (Br4). It is argued that the signal is directed to a practical application (Br5).

The examiner responds that (EA3): (1) "[T]he claims are directed to a signal and not a process"; (2) "Even if the process is statutory, by claiming the signal per se, applicant is seeking to patent an abstract idea or a form of an abstract idea.... The signal claimed is a representation of an abstract idea. It is an idea of how to describe an abstract manipulation."; (3) "The claims do not seek the protection of a physical product or manufacture, but the idea expressed by the term 'signal with embedded supplemental data.'"; and (4) "The signal does not represent functional descriptive language that if imparted to a computer would cause a computer to implement a process or become a specialized machine."

Appellant replies that arguments (2) and (3) are new grounds of rejection which are improper, but appellant nevertheless replies to all four arguments. It is argued that argument (1) is not an argument but rather a restatement of the issue (RBr3). It is argued with respect to argument (2) that a signal is not abstract, but "[s]aid signal comprises energy, is detectable, and measurable ... [and] is as physical and tangible as a table or a baseball" (RBr4) and is not naturally occurring. It is argued with respect to argument (3) that "the signal of claims 14 and 15 is not an idea but is tangible, detectable, measurable, and humanly created" (RBr4). It is argued with respect to argument (4) that the examiner has not provided any reference or other support for his contention (RBr4). Appellant again asserts that the relevant criterion is that "a signal claim directed to a practical application is statutory regardless of its transitory nature," MPEP § 2106 IV.B.1(c).

Claims 14 and 22-24

First, we must interpret the claims. Claim 14 is directed to a "signal" having certain characteristics. A man-made signal represents coded information. A signal can be an abstract quantity describing the information or a physical quantity (e.g., the fluctuations of an electrical quantity, such as voltage), which can be measured. See In re Walter, 618 F.2d 758, 770,

205 USPQ 397, 409 (CCPA 1980) ("The 'signals' processed by the inventions of claims 10-12 may represent either physical quantities or abstract quantities; the claims do not require one or the other"). The signal of claim 14 is not recited to have any specific physical form, i.e., it is not expressly or impliedly an electrical or electromagnetic signal or a signal transmitted or stored in a physical medium. The signal could simply be a string of +1 and -1 sample values representing an encoded signal z, e.g., -1, +1, -1, +1, +1, -1, etc. for the encoded signal z in appellant's Fig. 4, but the representation of the signal is not claimed. Claim 14 merely recites the abstract properties of the signal. Appellant's assertion that "[s]aid signal comprises energy, is detectable, and measurable ... [and] is as physical and tangible as a table or a baseball" (RBr4) is not supported by any claim limitations.

The same interpretation applies to claim 22, which merely defines the data. Claim 23 recites that "the signal is a video signal" and claim 24 recites that "the signal is an audio signal." The terms "video" and "audio" are considered statements of intended use for the signal and while the terms imply some additional formatting for use in video and audio devices, they do not clearly specify any physical properties. In any case, it is not clear that a physical signal per se is patentable.

We conclude that the signal of claims 14 and 22-24 is nonstatutory subject matter because (1) it is an abstract idea, and (2) it does not fall within one of the four statutory categories of subject matter under 35 U.S.C. § 101. These roughly correspond to the examiner's arguments (2) and (3), respectively. The examiner's refers to "technological arts," but technological arts is not a separate test for statutory subject matter. See Ex parte 76 USPQ2d 1385 (Bd. Pat. App. & Int. 2005). This not to say that there are no limits on patentable subject matter. See id. at 1389-1432 (APJ Barrett, concurring-in-part and dissenting-in-part) (inventions protected under the "useful arts" of the Constitution are specified by Congress in the classes of § 101, as those classes are defined by the caselaw, not by some undefined "technological arts" test).

Abstract idea

One of the three judicially recognized exceptions is an "abstract idea." Diamond v. Diehr, 450 U.S. 175, 185, 209 USPQ 1, 7 (1981). The signal of claims 14 and 22 has no physical attributes and merely describes the abstract characteristics of the signal and, thus, it is considered an "abstract idea." Claim 23, which recites that "the signal is a video signal," and claim 24, which recites that "the signal is an audio signal," are interpreted as reciting the type of

information contained in the signal, video or audio, and not any particular physical properties, such as an electrical signal. Accordingly, the signal of claims 14 and 22-24 is nonstatutory subject matter as an "abstract idea."

Not within a § 101 category

The categories of statutory subject matter are "process, machine, manufacture, or composition of matter." 35 U.S.C. § 101. "[N]o patent is available for a discovery, however useful, novel, and nonobvious, unless it falls within one of the express categories of patentable subject matter of 35 U.S.C. § 101." Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 483, 181 USPQ 673, 679 (1974).

A "process" is a series of acts and, since claim 14 does not recite acts, it is not a process.

The three product classes of machine, manufacture, and composition of matter have traditionally required physical structure or substance. "The term machine includes every mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result." Corning v. Burden, 56 U.S. 252, 267 (1854); see also Burr v. Duryee, 68 U.S. 531, 570 (1863) (a machine is a concrete thing, consisting of parts or of certain devices and combinations of devices). In modern parlance, electrical circuits and devices,

such as computers, are referred to as machines. The signal of claim 14 has no concrete tangible physical structure, and does not itself perform any functions that produce useful, concrete and tangible results. Therefore, a signal does not fit within the definition of a "machine."

A "manufacture" and a "composition of matter" are defined in Diamond v. Chakrabarty, 447 U.S. 303, 308, 206 USPQ 193, 196-97 (1980):

> [T]his Court has read the term "manufacture" in accordance with its dictionary definition to mean "the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery." American Fruit Growers, Inc. v. Brogdex Co., 283 U.S. 1, 11 (1931). Similarly, "composition of matter" has been construed consistent with common usage to include "all compositions of two or more substances and ... all composite articles, whether they be results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders or solids." Shell Development Co. v. Watson, 149 F. Supp. 279, 280 (D.C. 1957) (citing 1 A. Deller, Walker on Patents § 14, p. 55 (1st ed. 1937). [Parallel citations omitted.]

The signal is not composed of matter and is clearly not a "composition of matter."

A "manufacture" is the residual category for products. 1 Chisum, Patents § 1.02[3] (2004) (citing W. Robinson, The Law of Patents for Useful Inventions 270 (1890)). If a signal falls within any category of § 101, it must fall within this category. The definition of "manufacture" from Diamond v. Chakrabarty requires a tangible article prepared from materials. The other



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cases dealing with manufactures also require a tangible physical article. The CCPA held in In re Hruby, 373 F.2d 997, 153 USPQ 61 (CCPA 1967) that there was no distinction between the meaning of "manufacture" in § 101 and "article of manufacture" in § 171 for designs. The issue in Hruby was whether that portion of a water fountain which is composed entirely of water in motion was an article of manufacture. The CCPA relied on the analysis of the term "manufacture" in Riter-Conley Mfg. Co. v. Aiken, 203 F. 699 (3d Cir.), cert. denied, 229 U.S. 617 (1913), a case involving a utility patent. The CCPA stated in Hruby:

> The gist of it is, as one can determine from dictionaries, that a manufacture is anything made "by the hands of man" from raw materials, whether literally by hand or by machinery or by art.

373 F.2d at 1000, 153 USPQ at 65. The CCPA held that the fountain was made of the only substance fountains can be made of--water--and determined that designs for water fountains were statutory. Articles of manufacture in designs manifestly require physical matter to provide substance for embodiment of the design. Since an "article of manufacture" under § 171 has the same meaning as a "manufacture" under § 101, it is inevitable that a manufacture under § 101 requires physical matter.

Some further indirect evidence that Congress intended to limit patentable subject matter to physical things and steps is found in 35 U.S.C. § 112, sixth paragraph, which states that an

element in a claim for a combination may be expressed as a "means or step" for performing a function and will be construed to cover the corresponding "structure, material, or acts described in the specification and equivalents thereof." "Structure" and "material" indicate tangible things made of matter, not energy.

The signal of claim 14 does not have any physical structure or substance and does not fit the definition of a "manufacture" which requires a tangible object. The signal of claims 14 and 22-24 is considered an "abstract idea," as discussed supra. The more interesting question is presented with respect to dependent claims 23 and 24, to the extent these claims might be construed to imply an electrical signal: Is a physical electrical signal, not embodied or stored in a tangible medium, a "manufacture"? An electrical signal does not fit the Diamond v. Chakrabarty definition of a manufacture because it is not an object prepared from material and, thus, the answer seems to be that a signal, even if claimed as a measurable physical quantity, such as a voltage, is not patentable. See In re Bonczyk, 10 Fed. Appx. 908 (Fed. Cir. 2001) (unpublished) ("fabricated energy structure" does not correspond to any statutory category of subject matter and it is unnecessary to reach the alternate ground of affirmance that the subject matter lacks practical utility). This analysis is consistent with the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility,

1300 Off. Gaz. Patent and Trademark Off. (O.G.) 142, 152 (Nov. 22, 2005), in the section entitled "Electro-Magnetic Signals." Rather than invent reasons why this different type of subject matter may be statutory and open up a whole new type of subject matter for patenting, we leave it to our reviewing court, the U.S. Court of Appeals for the Federal Circuit to make this decision. In summary, the signal of claims 14 and 22-24 is also unpatentable subject matter because it does not fall within any category of § 101.

Appellant relies on the following statement in MPEP § 2106 IV.B.1(c) (8th ed., Rev. 1, Feb. 2003): "However, a signal claim directed to a practical application of electromagnetic energy is statutory regardless of its transitory nature. See *O'Reilly*, 56 U.S. at 114-19; *In re Breslow*, 616 F.2d 516, 519-21, 205 USPQ 221, 225-26 (CCPA 1980)." To the extent this statement suggests that a claim to a signal per se is statutory subject matter, it is in error. Neither O'Reilly v. Morse nor Breslow are to the contrary: O'Reilly was to a method and Breslow was to a chemical composition of matter. It is noted that the rejection in this case is based principally on the fact that the signal, as claimed, is abstract and is not recited to be an electromagnetic signal or a signal stored in a physical medium. Nevertheless, we hold that an electrical signal per se does not fit within any of the statutory categories of 35 U.S.C. § 101 until told otherwise

by the Federal Circuit. As to the statement in the MPEP, the MPEP is a manual of examining procedure and its legal interpretations of the case law are not binding on the Board. The practical application of a signal in a process or manufacture may be statutory, but here the claims recite a signal per se.

The assignee of this application should be familiar with the signal analysis. A rejection of a signal per se was affirmed by the Board in Koo, U.S. Patent 5,568,202, issued October 22, 1996, and assigned to U.S. Philips, the assignee of the present application. In Koo, after a premature appeal to the Federal Circuit, the claims were allowed after the claim was amended to recite "wherein said reference signal is embodied in a processor readable memory" following the holding in In re Lowry, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994), wherein claims to a data structure stored in memory were held to be statutory subject matter. No memory or other physical structure is claimed here and our decision is not controlled by Lowry.

As to the examiner's statement that "[t]he signal does not represent functional descriptive language that if imparted to a computer would cause a computer to implement a process or become a specialized machine" (EA3). This is apparently a reference to the distinction between "functional descriptive material" and "nonfunctional descriptive material" in MPEP § 2106 IV.B.1. This

rationale is relevant to claim 15, but is not necessary for claim 14, which does not recite a memory or storage medium.

Claim 15

Claim 15 recites "a storage medium having stored thereon a signal with embedded supplemental data." This claim depends on the distinction between "functional descriptive material" and "nonfunctional descriptive material" described in MPEP § 2106 IV.B.1. "'Nonfunctional descriptive material' includes but is not limited to music, literary works and a compilation or mere arrangement of data." Id. While the signal may represent "nonfunctional descriptive material," music or a movie, claim 15 is not trying to claim the content of the material itself. The storage medium in claim 15 nominally puts the claim into the statutory category of a "manufacture" and the signal is "functional" because it can be used by a machine to produce a useful result, as with the "data structure stored in memory" in Lowry. Accordingly, we conclude that claim 15 is statutory subject matter. The rejection of claim 15 is reversed.

Obviousness-type double patenting

The examiner finds that assignee's patent to Bruekers claims the claimed invention except for the limitation of modifying at least one further sample of the encoded signal preceding the selected sample if the further sample modification is found to

improve the quality of the encoding process and the limitation that at least one of the samples preceding the selected samples is different from the sample corresponding to the given encoding process (FR3-4). The examiner finds that Bender teaches a method and apparatus for hiding data wherein samples preceding the selected samples are modified in order to improve the quality of the encoding process at column 2, lines 35-46 (Br4).

Appellant presents numerous arguments in response (Br7-20).

The examiner responds (EA5):

> The patent to Bender teaches the modification of the samples around or preceding the location where the watermark is introduced, see column 8, lines 25-39, referring to Figure 2. The Bender patent teaches the modification of samples preceding (around) the selected samples improves the quality of the encoding process, i.e., the ability to hide a watermark, se [sic] column 1, lines 27-38.

Appellant presents numerous arguments in rebuttal (RBr8-11).

Appellant's argument that the examiner did not identify a specific claim in Bruekers against the independent claims of this application (Br8-10), while true, is not the kind of argument that is persuasive given that appellant is a co-inventor on Bruekers and is presumed to be familiar with what is claimed and the fact that the examiner identified what was not taught. The claims are not complex and it takes little time to determine that claim 1 or claim 22 in Bruekers discloses the limitations of the independent claims of the present application except for modifying a further sample of the encoded signal preceding the

selected sample (claims 1 and 11) or at least one of the samples preceding the selected samples is different from the sample corresponding to the given encoding process (claims 14 and 15). The limitations of claims 5, 6, 12, and 13 of the present application are found in claims 2 and 3 of Bruekers. Appellant's argument has merit for some dependent claims of the present case, such as claims 16, 19, and 22, which recite the "supplemental data includes a portion of a watermark data pattern," and claims 17, 18, 20, 21, 23, and 24, which recite that the signal is an audio or video signal, because these limitations are not found in the claims in Bruekers and the examiner has not attempted to explain why the limitations would have been obvious.

We agree with appellant that Bender does not disclose modifying a further sample of the encoded signal preceding the selected sample (claims 1 and 11) or that at least one of the samples preceding the selected samples is different from the sample corresponding to the given encoding process (claims 14 and 15). It appears that the examiner interprets the claim term "preceding" to be taught by the modification of samples "around" the selected samples in Bender. This is not the encoding of a signal with feedback and modification of a sample preceding the selected sample called for in the claims. An electrical signal is a one-dimensional entity, e.g., it has a unique value (voltage, frequency, or, in the present case a value of +1 or -1)

as a function of time. Bender is directed to embedding supplemental data in a two dimensional image. While the image will be encoded somehow for transmission, the method of encoding is not disclosed. The term "preceding" has meaning for a signal which is a function of time but is meaningless for an image; it does not equate to "around" in a two-dimensional image. Certainly, there is no way the unity bit encoding or sigma-delta modulation of, for example, claims 5 and 6 makes any sense for Bender. Thus, the examiner has failed to establish a prima facie case of obviousness-type double patenting. The rejection of claims 1, 5, 6, and 11-24 is reversed.

CONCLUSION

The rejection of claims 14 and 22-24 under 35 U.S.C. § 101 is sustained. The rejection of claim 15 under § 101 is reversed.

The rejection of claims 1, 5, 6, and 11-24 based on obviousness-type double patenting is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1). See 37 CFR § 1.136(a)(1)(iv) (2004).

AFFIRMED-IN-PART

KENNETH W. HAIRSTON
Administrative Patent Judge )
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LEE E. BARRETT )
Administrative Patent Judge ) BOARD OF PATENT
) APPEALS
) AND
) INTERFERENCES
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ALLEN R. MacDONALD )
Administrative Patent Judge )

Appeal No. 2003-0853
Application 09/211,928

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ADDENDUM – USPTO Interim Guidelines for

Examination of Patent Applications for Subject Matter Eligibility –

Annex IV(c)

(c) Electro-Magnetic Signals

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in Sec. 101.

First, a claimed signal is clearly not a "process" under Sec. 101 because it is not a series of steps. The other three Sec. 101 classes of machine, compositions of matter and manufactures "relate to structural entities and can be grouped as `product' claims in order to contrast them with process claims." 1 D. Chisum, Patents Sec. 1.02 (1994). The three product classes have traditionally required physical structure or material.

"The term machine includes every mechanical device or combination of mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result." Corning v. Burden, 56 U.S. (15 How.) 252, 267 (1854). A modern definition of machine would no doubt include electronic devices which perform functions. Indeed, devices such as flip-flops and computers are referred to in computer science as sequential machines. A claimed signal has no physical structure, does not itself perform any useful, concrete and tangible result and, thus, does not fit within the definition of a machine.

A "composition of matter" "covers all compositions of two or more substances and includes all composite articles, whether they be results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders or solids." Shell Development Co. v. Watson, 149 F. Supp. 279, 280, 113 USPQ 265, 266 (D.D.C. 1957), aff'd, 252 F.2d 861, 116 USPQ 428 (D.C. Cir. 1958). A claimed signal is not matter, but a form of energy, and therefore is not a composition of matter.

The Supreme Court has read the term "manufacture" in accordance with its dictionary definition to mean "the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery." Diamond v. Chakrabarty, 447 U.S. 303, 308, 206 USPQ 193, 196-97 (1980) (quoting American Fruit Growers, Inc. v. Brogdex Co., 283 U.S. 1, 11, 8 USPQ 131, 133 (1931), which, in turn, quotes the Century Dictionary). Other courts have applied similar definitions. See American Disappearing Bed Co. v. Arnaelsteen, 182 F. 324, 325 (9th Cir. 1910), cert. denied, 220 U.S. 622 (1911). These definitions require physical substance, which a claimed signal does not have. Congress can be presumed to be aware of an administrative or judicial interpretation of a statute and to adopt that interpretation when it re-enacts a statute without change. Lorillard v. Pons, 434 U.S. 575, 580

(1978). Thus, Congress must be presumed to have been aware of the interpretation of manufacture in American Fruit Growers when it passed the 1952 Patent Act.

A manufacture is also defined as the residual class of product. 1 Chisum, Sec. 1.02[3] (citing W. Robinson, The Law of Patents for Useful Inventions 270 (1890)). A product is a tangible physical article or object, some form of matter, which a signal is not. That the other two product classes, machine and composition of matter, require physical matter is evidence that a manufacture was also intended to require physical matter. A signal, a form of energy, does not fall within either of the two definitions of manufacture. Thus, a signal does not fall within one of the four statutory classes of Sec. 101.

On the other hand, from a technological standpoint, a signal encoded with functional descriptive material is similar to a computer-readable memory encoded with functional descriptive material, in that they both create a functional interrelationship with a computer. In other words, a computer is able to execute the encoded functions, regardless of whether the format is a disk or a signal.

These interim guidelines propose that such signal claims are ineligible for patent protection because they do not fall within any of the four statutory classes of Sec. 101. Public comment is sought for further evaluation of this question.

# CERTIFICATE OF SERVICE

The undersigned certifies that on July 25, 2006, I served two copies of this brief on the Solicitor of the United States Patent and Trademark Office, by commercial courier service (Federal Express) for next day delivery to Office of the Solicitor, Madison West 08C43, 600 Dulany Street, Alexandria VA

I also certify that on July 25, 2006, I filed the original and eleven copies of this brief at the Office of the Clerk, United States Court of Appeals for the Federal Circuit by commercial courier service (Federal Express) for next day delivery.

Marianne Fox

# CERTIFICATE OF COMPLIANCE

This brief complies with the type-volume limitation of F.R.A.P. 32(a)(7)(B).

The brief contains 4734 words, excluding parts of the brief exempted by F.R.A.P. 32(a)(7)(B)(iii).

This brief complies with the typeface requirements of F.R.A.P. 32(a)(5) and the type style requirements of F.R.A.P. 32(a)(6).

The brief has been prepared in a proportionally spaced typeface using Microsoft Office Word 2003 SP2 with 14pt Microsoft Times New Roman type style.

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July 7,2 006