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REPLY 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)

CORRECTED
REPLY BRIEF OF APPELLANT Petrus A.C.M. Nuijten

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Appellant, Petrus A.C.M. Nuijten responds to the arguments of the Director of the United States Patent and Trademark Office (hereinafter "the Director" or "the USPTO") as follows.

Summary of the Arguments

A signal is not abstract ideas. The Director's arguments repeatedly confuse the claimed signal with the information it contains. The arguments imply an interpretation that ignores essential limitations of the claim 14. Under a proper interpretation, the claimed signal is necessarily man-made and exists as a measurable physical thing.

The Director's analysis that a signal does not fall within the bounds of the four Section 101 categories is fundamentally flawed.

Congress had no reason to consider a clarifying amendment of Sections 100 -101. Prior to November 2005 the USPTO's written policies supported patentability of signals *per se*.

On the basis of the record, it would be inappropriate for this Court to defer to the USPTO's statutory construction and examinations guidelines in this case.

Arguments

1. A signal is not abstract ideas.

A. Signals are containers that carry information.

The USPTO's arguments repeatedly confuse Mr. Nuijten's claimed signal with the information that it carries.

The Director's argument relies on an obscure and contextually-incomplete[1] definition of the term "signal" drawn from an out-of-print

[1] The cited dictionary is, in fact, a compilation extracted from various independent technical standards and the definitions that are uncertain when viewed outside of the context of the complete standards from which they are drawn. Furthermore, the Director mentions only the seventh definition of "signal' from a list of nineteen separate uses of the term in IEEE standards . The other definitions presented in the IEEE Dictionary, many of which make specific reference to technologies that are particularly relevant to Mr. Nuijten's invention, generally stress the physical nature of signals. For example " (1) (signals and paths) (microcomputer system bus) The physical representation of data."; " (2) (signals and paths ...) The physical representation which conveys data from one point to another ..." "(3)(A)

compilation ("The Authoritative Dictionary of IEEE Standards Terms", Seventh Edition, IEEE Press 2000); but regardless of which definition one chooses, the fundamental purpose and use of any signal is to communicate information. In order to accomplish that purpose, a signal must have sufficient physical substance to be discerned and recognized by a recipient. In other words, if an event cannot be detected via some measurable difference from the background conditions, it will not convey any information and cannot be a signal of anything.

B. Signals are not made out of bits.

The Director argues that signals are abstract because they are made out of bits. Bits are a unit of measurement for the size or amount of information carried by a particular signal; but signals are not made out of bits (any more than a fuel tank is made out of gallons or a cargo compartment in an airplane is made out of inches and feet). Under a corresponding mechanical analogy, the language which the Director quotes from the description of Mr. Nuijten's preferred embodiment:

(data transmission) A visual, audible or other indication used to convey information ..." etc. (bold face emphasis in the original omitted *)*

"every 100th bit of the encoded signal is to be replaced by watermark bit *w*" [A25]

would correspond to stating that every 100th gallon in a fuel tank is replaced by a gallon of marker dye. The tank doesn't change, only its contents do.

C. The USPTO has misapplied the holding of *In re Walter.*

The USPTO's confusion between signals and the information which they carry is particularly evident from the Director's misapplication of the Court of Customs and Patent Appeals' holding in *In re Walter* 618 F.2d. 758 (C.C.P.A. 1980). Walter invented a computer to perform calculations on electric signals that represented seismic data. In deciding *Walter*, the Court attempted to define a test[2] for patentability of computer implemented calculations that could differentiate between the type of calculations that the Supreme Court had held unpatentable in *Gottschalk v. Benson* 409 U.S. 63 (1972) and other calculations that the Court later said would be patentable subject matter (*Parker v Flook* 437 U.S. 584 (1978),

[2] These holdings were later incorporated into the *Abele-Freeman-Walter* test. The USPTO presently takes the position that the test now has "little, if any, applicability to determining the presence of statutory subject matter" ("Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" 1300 Off. Gaz. Pat. and Trademark Office 142, 152 (November 22, 2005) at p 21 of 28).

590). The C.C.P.A. proposed a test which examined whether a mathematical algorithm was used in a claim to define structural relationships or to limit process steps. The *Walter* Court further distinguished between claimed calculations that only operate upon physical parameters and calculations that operate upon abstract numbers. The Court reasoned that a patent claim that covered calculations made on abstract numbers would preempt an entire field of mathematics.

Walter's patent application described some signals which carried information that represented values of real measured seismic data, but other of Walter's signals carried information that only represented simulated data. *In re Walter* held that claims for calculations performed on simulated data were unpatentable while calculations that were performed on actual data could be patented . When Judge Rich noted that signals:

> "may **represent** either physical quantities or abstract quantities" (681 F2d. at 770, emphasis added),

he was addressing the origin of the information contained in Walter's signals, not the signals themselves.[3]

[3] Judge Rich noted that the nature of Walter's signals (as distinguished from the information which they represented) was "not clear" (618 F2d at 669).

D. The express language of Claim 14 defines signals that are tangible, man-made objects.

Some broad definitions of the word "signal" may include natural phenomena. However, the subject matter of claim 14 is expressly limited to signals that are "encoded in accordance with a given encoding process" and "embedded [with] supplemental data" [A2][4]. The claims at issue in this appeal are thus restricted to signals which are creations of man.

Mr. Nuijten's patent specification describes preferred embodiments of the invention which use electric signals [e.g. A27] as well as DVD recording [A22]. DVD recording is well known as a technology that creates signals as mechanical pit structures which are later retrieved as a signal on a reflected electromagnetic laser beam. However, the claims at issue in this appeal are not limited to electric, electromagnetic or mechanical signals. The Board speculated that dependent claims 22 and 24 "**might be construed** to imply an electrical signal" (emphasis added) [A11], but there has never been a claim interpretation to that effect during the prosecution of Mr. Nuijten's

[4] For example: one could speak of a flock of migrating birds signaling the onset of cold weather, but the natural signal is not encoded by a process.

patent application and it is most certainly has never been Appellant's position that the dependent claims are limited to electrical signals .

The IPO properly recognizes that the Board's conclusions on the patentability of electrical signals are unnecessary [IPO Br. at 4]. Appellant regards the Board's discussion of electric signals as *dicta* and declines to become engaged here in the arguments between *amicus* IPO and the Director on the question of whether any limitations which are not present in Mr. Nuijten's appealed claims could affect the patentability of signals.[5]

2. The USPTO's analysis that signals do not fall within the bounds of the four Section 101 categories is fundamentally flawed.

A. Section 271(g) cases cited by the USPTO are irrelevant.

[5] The patentability of electric and electromagnetic signals was not at issue before the Patent Examiner and there is no prosecution record below on the subject. Nevertheless, Appellant questions many of the "scientific" propositions which the Director presents to support his arguments. For example we note that: 1) the Director ignores the fundamental duality of waves and particles that lies at the heart of quantum physics and 2) the transmission of electricity in wires at a velocity that is faster than the physical motion of the metallic electrons has direct analogs in patentable mechanical structures where forces are transmitted along machine components and hydraulic elements at the speed of sound which is much greater than the macroscopic motion of the structure or fluid medium.

The Director relies on this Court's construction of 35 U.S.C. 271(g) in *Bayer AG v Housey Pharmaceuticals Inc.*, 340 F.3d 1367 (Fed. Cir. 2003) and *NTP, Inc. v Research In Motion, Ltd.*, 418 F.3d 1282 (Fed. Cir. 2005) to support arguments that information can not be construed as an article of manufacture under 35 U.S.C. 101. The arguments are misplaced because Section 35 271(g) speaks only of a "product" and makes no reference to a "manufacture" or an "article".

> "Whoever without authority imports into the United States or offers to sell, sells, or uses within the United States a **product** which is made by a process patented in the United States shall be liable as an infringer, if the importation, offer to sell, sale, or use of the **product** occurs during the term of such process patent. In an action for infringement of a process patent, no remedy may be granted for infringement on account of the noncommercial use or retail sale of a **product** unless there is no adequate remedy under this title for infringement on account of the importation or other use, offer to sell, or sale of that product. A **product** which is made by a patented process will, for purposes of this title, not be considered to be so made after--
> (1) it is materially changed by subsequent processes; or
> (2) it becomes a trivial and nonessential component of another **product**." [emphasis added] (35 U.S.C. 721(g))

Bayer held that information which is produced by a patented process is not a "product" as set forth in section 271(g). The Court's opinion makes an extensive analysis of the legislative history of section 271(g), which Congress adopted as part of the *Omnibus Trade and Competitiveness Act of*

1988 (*Bayer* at 1372 *et. seq.*). That legislative history is irrelevant to any analysis of section 101 patentability, which has a two century-long history in the patent statutes, and to the language of section 100, which was adopted more than 35 years before section 271(g) as part of the 1952 Patent Act.

Moreover, the USPTO's reliance on the *Bayer* decision presupposes that Mr. Nuijten's claimed signal is nothing more than the information it carries. The argument again confuses the container with its contents.

This Court also made clear in *NTP* that the standards for determining patent infringement under Section 271(g) are very different from the patentability standards in section 101. "[S]ection 271(g) and Section 101 are not coextensive in their coverage" [with regard to process inventions]; different test for patentability apply.

> "We rejected the tangible result test for section 271(g) in *Bayer* when we held that research data – a tangible result for section 101 purposes—did not garner the protection of section 271(g)" (*NTP* at 1324, internal quotations omitted).

B. *In re Kollar* is not a relevant precedent.

The Director relies on this Court's holding in *In re Kollar* (286 F3d. 1326 Fed. Cir. 2002) to support a proposition that a patentable process

under section 101 "consists of a series of steps" [USPTO Br. 11], but section 101 patentable subject matter was not an issue in *Kollar*. The *Kollar* case only considered the extent to which a patent license and transfer of technical information for a chemical manufacturing process could constitute an "on sale" bar under 35 U.S.C. 102. The Court held that a process which was claimed as a series of steps could only be said to be on sale if process steps were actually performed as a result of the licensing transaction. There is no indication that a definition of a section 101 "process" was either intended or necessary for the *Kollar* decision.

3. **Congress has had no reason to consider a clarifying amendment of Sections 100 -101.**

The Director's statement that the patent statutes have been consistently interpreted in a way would exclude electrical signals from patentability [USPTO Br. 23] is simply not correct. The public record provides ample evidence that from at least 1996 until late 2005 the USPTO's policies, guidelines and training materials, together with publicly available decisions of the USPTO BPAI supported the proposition that signals were patentable subject matter. (*See* e.g. Stephen G. Kunin & Bradley D. Lythle,

"Patent Eligibility of Signal Claims", 87 J. Pat. & Trademark Off. Soc'y 991 (2005) and the arguments at Appellant's Principal Br. 21). Even today, the Official USPTO guidelines which speak against the patentability of signals are denoted "Interim". Thus neither Congress nor the patent bar has had any historical reason to believe that a legislative amendment was necessary to effect or clarify the patentability of signals under sections 100 and 101.

4. It will be inappropriate for this Court to defer to the USPTO's statutory construction and examination guidelines in this case.

The Director argues that this Court should give some persuasive force to USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" 1300 Off. Gaz. Pat. and Trademark Office 142, 152 (November 22, 2005) (hereinafter the "2005 Interim Guidelines") and policy on the patentability of signals [USPTO Br. 18-19]. However, both the public record and record in this case demonstrate that the USPTO has shown a profound inconsistency and lack of conviction on the patentability of signals which suggest that reliance on the 2005 Interim Guidelines would be particularly inappropriate in this case.

The 2005 **Interim** Guidelines by their very title are a non-final expression of agency policy. On the subject of signals, they represent a 180 degree shift from the previous USPTO policies. The 2005 Interim Guidelines, in fact, expressly recognize that strong counter-arguments can be made against the patentable subject matter rule for signals which is proposed by the USPTO.

> "On the other hand, from a technological standpoint, a signal encoded with functional descriptive material is similar to a [patentable][6] computer-readable memory encoded with functional descriptive material in that they both create a functional[7] relationship 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." (2005 Interim Guidelines Annex 4 page 27 of 28, Footnotes added).

Annex 4 of the 2005 Interim Guidelines then concludes with the most telling admission of the Agency's insecurity with the stated policy

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[6] The Director's brief cites *In re Beauregard* (53 F.3d. 1583 (Fed. Cir. 1995) for the principle that claims for software stored on a medium are allowable. Appellant does not disagree with the principle, but notes that this Court's decision in *Beauregard* was only a remand per agreement of the parties and that the Court apparently made no substantive findings of law.

[7] The Board found that Mr. Nuijten's signal, when stored on a medium, was "functional" [A-14].

> "These Interim Guidelines **propose** that such signal claims are ineligible for patent protection because they do not fall within the statutory classes of Section 101. Public comment is sought for further evaluation of this question" (emphasis added).

The USPTO has not yet finished its evaluation of the question. It is not appropriate for this Court to defer to an unfinished agency proposal.

Likewise, the Board below, declined to exercise its independent expertise to interpret section 101, stating

> "Rather than invent reasons why this different type of subject matter may be statutory, we leave it up to our reviewing court, the U.S. court of Appeals for the Federal Circuit to make this decision."[A12]

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,

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December 4, 2006

CERTIFICATE OF SERVICE

The undersigned certifies that on December 6, 2006, I served two copies of this Corrected 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 December 6, 2006, I filed the original and eleven copies of this Corrected 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.

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