No. 08-964

In The
Supreme Court of the United States

BERNARD L. BILSKI and RAND A. WARSAW,

Petitioners,

v.

JOHN J. DOLL, Acting Under Secretary of Commerce for Intellectual Property and Acting Director of the United States Patent and Trademark Office,

Respondent.

On Writ Of Certiorari To The United States Court Of Appeals For The Federal Circuit

BRIEF OF *AMICI CURIAE* DOLBY LABORATORIES, INC., DTS, INC., AND SRS LABS, INC., IN SUPPORT OF NEITHER PARTY

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QUESTIONS PRESENTED

Whether the Federal Circuit erred by holding that a "process" must be tied to a particular machine or apparatus, or transform a particular article into a different state or thing ("machine-or-transformation" test), to be eligible for patenting under 35 U.S.C. § 101, despite this Court's precedent declining to limit the broad statutory grant of patent-eligibility for "any" new and useful process beyond excluding patents for "laws of nature, physical phenomena, and abstract ideas."

Whether the Federal Circuit's "machine-or-transformation" test for patent-eligibility, which effectively forecloses meaningful patent protection to many business methods, contradicts the clear Congressional intent that patents protect "method[s] of doing or conducting business." 35 U.S.C. § 273(a)(3).*

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* The *Amici*'s argument is limited to the first question presented: whether the machine-or-transformation test is an appropriate test for patentability. The *Amici* do not express an opinion on the second question on which *certiorari* was granted.

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STATEMENT OF INTEREST

Dolby Laboratories ("Dolby"), DTS, Inc. ("DTS") and SRS Labs, Inc. ("SRS") (herein "*Amici*") develop and deliver audio products and technologies that make the entertainment experience more realistic and immersive.

Dolby has over 1100 employees, including technicians, engineers, researchers and scientists who are vital to Dolby's patent process. Its worldwide portfolio includes over 1500 issued patents and over 2000 pending applications. For more than four decades, Dolby has provided high-quality audio and surround sound in cinema, broadcast, home audio systems, cars, DVDs, headphones, games, televisions, and personal computers. Dolby's technologies have been included in more than 3 billion products through licenses with major manufacturers throughout the world. For fiscal year 2007, Dolby spent more than $44 million for research and development and for fiscal year 2008 more than $62 million.[1]

DTS is a major provider of high quality branded entertainment technologies, which have been incorporated in hundreds of millions of consumer electronics products manufactured and sold globally by licensee

[1] The parties have consented to the filing of this brief. No counsel for a party authored this brief in whole or in part, and no counsel or party made a monetary contribution intended to fund the preparation or submission of this brief. No person other than *Amici*, their members, or their counsel made a monetary contribution to this brief's preparation or submission.

customers. It has a substantial base of intellectual property assets, including 42 patent families and 110 individual patents granted worldwide.

SRS develops audio technologies that enable users to enjoy natural, restored sound from a wide variety of audio devices. Billions of people worldwide have purchased audio devices that use SRS' technologies. These technologies include advanced audio enhancement, dialog clarity, voice intelligibility, and surround sound processing. SRS also has a large worldwide patent portfolio that includes over 100 issued patents and dozens of pending applications.

INTRODUCTION AND SUMMARY OF ARGUMENT

In the 28 years since *Diamond v. Diehr*, 450 U.S. 175 (1981), was decided, this Court has not addressed the growing ambiguity in Federal Circuit jurisprudence regarding the patentability of processes that apply scientific algorithms to bring into existence valuable new technological applications. Limiting patentable processes to those tied to particular machines or transformations of articles, as required by the standard set forth in *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008), is not required by Title 35, Section 101 of the United States Code as applied in *Diehr*, and will unreasonably foreclose valuable technological development.

In the current information age, such a limitation risks discouraging innovation in new and unforeseen areas of technology. An example of such valuable technology that should be unquestionably patentable is the analysis of echocardiographic signals that measured heart rate as addressed in *Arrhythmia Research Tech., Inc. v. Corazonix Corp.*, 958 F.2d 1053 (Fed. Cir. 1992). Digital audio signals represent physical phenomena just the same as echocardiographic signals do. Audio signal processing utilizes technology such as psychoacoustics to develop valuable processes for operating on, transforming and synthesizing new digital audio signals. This is precisely the kind of innovation that has resulted in the *Amici*'s numerous technological innovations that have enhanced the quality of entertainment.[2] Practical applications of digital signal processing meet the criteria set forth in *Diehr*. The manipulation of an audio signal by application of scientific principles to achieve a result that has practical application is patentable irrespective of whether the process is tied to a particular machine or whether digital audio signals qualify as "articles."

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[2] Company founder Ray Dolby was awarded a Technical Grammy® from the Recording Academy for "ma[king] a contribution of outstanding technical significance to the recording field." Dolby has similarly received two Scientific and Engineering Awards from the Academy of Motion Picture Arts and Sciences. DTS has also received a Scientific and Engineering Award from the Academy of Motion Picture Arts and Sciences.

Bilski has introduced uncertainty into, and potentially narrowed the standard for, patentability that this Court should now clarify. *Amici* take no position on whether the business method claims in *Bilski* should be rejected. But in the words of Judge Newman in dissent in *Bilski*, "[u]ncertainty is the enemy of innovation." 545 F.3d at 977. If patentability of those claims is rejected, it should be because the concept of hedging risks in commodities trading is of a non-technical nature.[3] That the *Bilski* claims are not traditional industrial processes that transform physical articles is immaterial. The Court should not throw out the "babies" – patents for valuable technological innovations in the well-established field of signal processing – with what it may view as the "bathwater" of business method patents.

[3] Article I, Section 8 of the U.S. Constitution sets forth the purpose of the U.S. Patent System as being "to promote the Progress of Science and useful Arts."

ARGUMENT

I. THE *BILSKI* TEST INTERJECTED AMBIGUITY INTO THE QUESTION OF WHAT CONSTITUTES PATENTABLE SUBJECT MATTER AND HAS DISRUPTED THE SETTLED EXPECTATIONS OF INFORMATION AGE BUSINESSES.

Although *Bilski* addressed only an application for a business method patent, the standard it adopted impacts a far wider range of inventions than just business methods. Under *Bilski,* a process is patentable if it meets the exclusive test of being "(1) . . . tied to a particular machine or apparatus, or (2) [. . .] transform[ing] a particular article into a different state or thing." *Bilski*, 545 F.3d at 954, 964-65 ("the machine-or-transformation test is the only applicable test and must be applied"). This test is problematic because it calls into doubt whether information age inventions that operate on data or waveforms are eligible for patenting.

The *Bilski* test represents a significant departure from the standard for patent-eligibility set forth in *Diehr*. *Diehr* established a narrow and well-defined set of exceptions to patentability, and required only that a process have practical application to be eligible. Under *Diehr,* information age technologies have routinely been held patent-eligible, and as a consequence, the field has flourished. *Bilski* threatens to disrupt the audio technology industry and undermine the settled expectations of intellectual property

owners by substituting ambiguity in the place of *Diehr*'s certainty.

A. The "Machine-or-Transformation Test" Is Ambiguous As Applied To "Information Age" Inventions Like Digital Signal Processing, Because Such Inventions Operate On Data And Waveforms Rather Than Physical "Articles."

The *Bilski* test limits patent-eligibility under its transformation prong to processes that transform "particular articles." The word "article" carries with it sufficient industrial age baggage as to create confusion in the contemporary information age. Because digital signals and data might not be regarded as "articles" due to their incorporeal nature, processes that operate on signals and data might now be excluded from patent-eligibility at the threshold.[4] This, *Amici* submit, would be error.

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[4] In *In re Nuijten*, 500 F.3d 1346 (Fed. Cir. 2007), the Federal Circuit traversed each of the categories enumerated in 35 U.S.C. § 101 and found that an audio signal was neither a process, machine, manufacture or composition of matter and therefore such a signal did not itself qualify as patentable subject matter. In reaching this conclusion, the court made a determination that such a signal is not an "article." The court reasoned that an "article" is "a particular substance or commodity" and further stated, in reliance on dictionary definitions:

> These definitions address "articles" of "manufacture" as being **tangible articles** or **commodities**. **A transient electric or electromagnetic transmission does not fit within that definition.**

(Continued on following page)

Such technical inventions are fundamentally different from business methods and should remain patent-eligible. Digital audio signals, for example, are representations of disturbances of sound waves traveling through the air. Therefore, they represent something physical. When translated back into sound waves they impact human eardrums. They can be shaped and compressed much like the uncured rubber that was at issue in *Diehr*. Digital audio signal processing utilizes research in psychoacoustics to develop valuable processes for operating on, transforming and synthesizing new digital audio signals. These processes epitomize the application of science to the creation or transformation of structures, and are a far cry from business methods that typically deal with human social relationships, legal obligations and markets.

In its attempt to rein in business methods, *Bilski* has created uncertainty as to the patentability of technology for processing audio waveforms and other similar inventions that are the focus of extensive investment in the contemporary information age. That the machine-or-transformation test effectively lumps together such inventions that represent the practical application of technical principles with business methods, demonstrates just how far astray the Federal Circuit has gone in *Bilski*.

Id. at 1356 (emphasis added). Accordingly, the court concluded that audio signals lack the substance and tangibility requisite to being an **article**.

B. *Bilski* Admits Its Own Troubling Ambiguity.

The *Bilski* ruling expressly acknowledges the ambiguity that may result from applying its test in the realm of "information age" processes:

> [T]he main aspect of the transformation test that requires clarification here is what sorts of things constitute "articles" such that their transformation is sufficient to impart patent-eligibility under § 101. It is virtually self-evident that a process for a chemical or physical transformation of *physical objects or substances* is patent-eligible subject matter. . . . **The raw materials of many information-age processes, however, are electronic signals and electronically-manipulated data.** And some so-called business methods, such as that claimed in the present case, involve the manipulation of even more abstract constructs such as legal obligations, organizational relationships, and business risks. **Which, if any, of these processes qualify as a transformation or reduction of an article into a different state or thing constituting patent-eligible subject matter?**

See Bilski, 545 F.3d at 962 (bold emphasis added). *Bilski*'s troubling ambivalence is even more apparent in its holding:

> [C]laim 1 does not involve the transformation of any physical object or substance, **or an electronic signal representative of**

> **any physical object or substance**. Given its admitted failure to meet the machine implementation part of the test as well, the claim entirely fails the machine-or-transformation test and is not drawn to patent-eligible subject matter.

Id. at 964 (bold emphasis added). Thus, in *Bilski* itself, the Federal Circuit applied an expanded scope of the second prong of its test, one which, correctly, *Amici* contend, includes processes that transform "**an electronic signal** representative of any physical object or substance." *Id.* (emphasis added).

This prompts the question of whether the second prong of the test is limited to "articles" at all, whether signals and data are "actually articles," or whether data and signals are not articles and may be excluded from patent-eligibility. What is clear is that technology companies should not have to bear the cross of *Bilski*'s uncertainty. *Bilski*'s ambivalent insertion of an industrial age "article" requirement within its test for patent-eligibility has done violence to the settled expectations of intellectual property leaders like the *Amici* and has established what amounts to bad economic policy. By narrowing and interjecting uncertainty into whether the transformation and analysis of waveforms representing physical phenomena may be patentable, *Bilski* casts a cloud of uncertainty over such far-ranging technology fields as audio-visual compression and analytics, medical diagnostics, noise reduction and seismic analysis. Judge Newman in dissent in *Bilski* was

correct: "Uncertainty is the enemy of innovation." *Id.* at 977. The uncertainty created by *Bilski* is neither required by precedent nor proper as a matter of policy.

C. Application Of *Bilski* Has Caused Serious Problems.

Bilski's machine-or-transformation test does not merely have the **potential** to cause confusion and doubt with respect to the patent-eligibility standard, it has **actually** caused such problems. For instance, the experience of the *Amici* has been that Examiners appear to be so uncomfortable with the vagueness of the transformation prong that they routinely reject all claims to digital audio coding processes that do not unambiguously satisfy the machine prong. For example, Dolby is currently pursuing patent applications containing process claims that explicitly recite innovative transformative operations on audio data. That the processes recited by these claims constitute practical applications of technological principles is beyond question. However, Examiners routinely hold that such claims are directed to nonstatutory subject matter. In particular, Examiners insist that patent-eligibility can only be achieved by adding to the claims phrases such as "wherein X is implemented by a digital signal processor" or "wherein Y is performed by a computing device." Based on these experiences, it appears that the machine-or-transformation test has effectively reduced patent-eligibility determinations within the Patent and

Trademark Office to magic word expeditions, epitomizing the elevation of form over substance.

D. The Machine-or-Transformation Test Elevates Form Over Substance.

Due to its focus on very specific claim language characteristics, the machine-or-transformation test leads to the rejection of legitimate technical innovations that do not contain "magic words" and the allowance of claims for non-technical processes that do.

Any claim, even one for a business method or an abstract idea, could be formulated to comply with the machine-or-transformation test with clever draftsmanship. For example, if the phrase "wherein the method is performed by a computing device" is added, the claim may pass muster under the U.S. Patent Office's current application of the machine-or-transformation test.

Prior to the *Bilski* decision, it would generally have been considered bad practice to recite specific hardware in a claim to a method that is hardware-independent, or to recite what is represented by data in a claim to a method that is content-independent. Consequently, adopting the machine-or-transformation requirement at this point may retroactively invalidate innumerable already-issued claims to legitimate technological innovations.

II. THE *BILSKI* TEST DEPARTS FROM *DIEHR*'S VIEW OF PATENTABILITY.

A. Under *Diehr*'s Holding, The Only Exclusions From Patent-Eligibility Are "Laws Of Nature, Natural Phenomena, And Abstract Ideas."

The machine-or-transformation test, like other now-abandoned patent-eligibility tests that came before it, purports to be rooted in the policies articulated in *Diamond v. Diehr,* 450 U.S. 175 (1981). The *Diehr* standard, however, was not so constricted as to limit patent-eligibility to processes that are "tied to a particular machine" or transform a "particular article."

Diehr took a broad view of what constitutes a "process" and imported no extrinsic limitations to Section 101's pronouncement that processes are patentable. The Court noted that Section 101 imposes no restrictions on process patentability other than that the process be new and useful. *Diehr,* 450 U.S. at 183 (*citing Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876) ("If new and useful, [a process] is just as patentable as is a piece of machinery.")); *see also* 35 U.S.C. § 101. The Court further noted that "Congress intended statutory subject matter to include anything under the sun that is made by man." *Diehr*, 450 U.S. at 182 (citation omitted).

In *Diehr*, where a process was transformative, its eligibility for patenting was "not altered by the fact that in several steps of the process a mathematical

equation and a programmed digital computer are used." *Id.* at 185.[5] To the contrary, the Court held that "a process may be patentable, irrespective of the particular form of the instrumentalities used. . . ." *Id.* at 182-83 (citation omitted).

Diehr was a culmination of the Court's maturing views on computer software patenting that began first with *Gottschalk v. Benson,* 409 U.S. 63 (1972) and then *Parker v. Flook,* 437 U.S. 584 (1978). In both *Benson* and *Flook,* claims were ineligible for patenting because the applicants claimed what the Court believed to be nothing more than abstract mathematical formulas that were "like laws of nature."[6]

Diehr represented the **inverse** proposition – a process that **applied** a mathematical formula **could**

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[5] Significantly, the process at issue in *Diehr* differed from the prior art only with respect to steps performed internal to the general purpose digital computer involved in the rubber-curing process. The *Diehr* Court's allowance of such claims clearly signaled that an applicant may be entitled to patent protection even when the inventor's contribution to the art occurs entirely within a computing device.

[6] In *Flook*, the Court analogized such formulas to the Pythagorean theorem. *Flook*, 437 U.S. at 590. In *Diehr*, the Court analogized such formulas to Einstein's equation $E=mc^2$ and Newton's law of gravity. *Diehr*, 450 U.S. at 185. From these analogies, it is clear that the Court intended the exclusion to cover only formulas that mathematically represent laws of nature. However, in the context of computer-implemented processes, such as digital signal processing, many "formulas" are based entirely on human ingenuity and not natural laws, and are therefore not "like laws of nature."

be patentable where the result was practical, allowing a claim to an improved curing process for rubber that used the Arrhenius equation. So long as the equation was practically applied, the process that used the equation fell outside of the narrow exclusions set forth in *Benson* and *Flook*. The Court stated:

> It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection. (Internal citations omitted). As Justice Stone explained four decades ago: "While a scientific truth, or the mathematical expression of it, is not a patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be." (quoting *Mackay Radio & Telegraph Co. v. Radio Corp. of America*, 306 U.S. 86, 94 (1939)).

Diehr, 450 U.S. at 187-88 (emphasis in original). Thus, *Diehr* held that using mathematical steps is not anathema to patent-eligibility where a practical result follows from the application of such principles. After *Diehr*, only "laws of nature, natural phenomena, and abstract ideas" are patent-ineligible. *Diehr*, 450 U.S. at 185.[7] Because of this holding, *Diehr*

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[7] *Diehr* confirmed that *Benson* and *Flook* stand for "**no more**" than the exclusion of those three categories from patent-eligibility. *Id.* at 185-86 (emphasis added).

represented a **starting point** for future invention in the realm of computer and information technology. It was not a cage with which to contain the contemporary information age.

B. *Diehr*'s Practical Application Requirement Did Not Require Transformation Of Physical "Articles."

Diehr held only that claims to a practical application – internal mathematical operations notwithstanding – are separate and apart from the sort of abstract patent-ineligible claims in *Benson* and *Flook*.[8] The *Bilski* Court placed too much emphasis on *Diehr*'s use of the term "article" in the statement: "Transformation and reduction of an article 'to a different state or thing' is the clue to the patentability of a process claim that does not include particular machines." *Diehr*, 450 U.S. at 184 (citation omitted).

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[8] In 1994, the Federal Circuit illustrated a clear understanding of this distinction when it stated:

> [T]he proper inquiry in dealing with the so called mathematical subject matter exception to § 101 alleged herein is to see whether the claimed subject matter *as a whole* is a disembodied mathematical concept, whether categorized as a mathematical formula, mathematical equation, mathematical algorithm, or the like, which in essence represents nothing more than a 'law of nature,' 'natural phenomenon,' or 'abstract idea.' If so, *Diehr* precludes the patenting of that subject matter.

In re Alappat, 33 F.3d 1526, 1544 (Fed. Cir. 1994, *en banc*) (emphasis in original).

Diehr found that even a process with mathematical elements could be patent-eligible where as a whole the claim is drawn to some practical application; thus, *Diehr* was concerned with the practical applications produced by the steps in a transformative process, not the nature of the objects in those steps. The Court did not in any way limit what the objects of such patent-eligible applications could be. Nor did it need to in order to harmonize *Benson* and *Flook*.

Quite to the contrary, the *Diehr* opinion oscillates between the use of the term "article" – which has connotations of tangibility and physicality – and the use of the term "structure" – which is broader. Further, *Diehr* did not limit patentability to transformation of physical articles, but noted only that "articles" are just **examples** of something that patent-eligible processes might transform. *Diehr,* 450 U.S. at 192 ("On the other hand, when a claim containing a mathematical formula implements or applies that formula in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect (*e.g.*, transforming or reducing an article to a different state or thing), then the claim satisfies the requirements of § 101").

By imposing the requirement that an article must be transformed to be patentable, *Bilski* runs counter to *Diehr*'s express prohibition against narrowing the scope of patent-eligibility:

> . . . in dealing with the patent laws, we have more than once cautioned that "courts should not read into the patent laws limitations and conditions which the legislature has not expressed."

Id. at 182 (*quoting Diamond v. Chakrabarty*, 447 U.S. 303, 308 (1980)) (internal quotation omitted). Unfortunately, these warnings have largely gone unheeded.[9] The judicial history of Section 101 illustrates a repeated cycle in which lower courts have used statements from *Benson*, *Flook*, and *Diehr* as the basis for patent-eligibility tests that go beyond those "long-established principles," only later to abandon those tests when it becomes evident that they exclude subject matter that the patent system was clearly intended to cover.[10] The establishment of

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[9] *In re Alappat*, 33 F.3d 1526, 1543 (Fed. Cir. 1994, *en banc*) stands as a noteworthy exception. The *Alappat* Court recognized that:

> A close analysis of *Diehr, Flook*, and *Benson* reveals that the Supreme Court never intended to create an overly broad, fourth category of subject matter excluded from § 101. Rather, at the core of the Court's analysis in each of these cases lies an attempt by the Court to explain a rather straightforward concept, namely, that certain types of mathematical subject matter, standing alone, represent nothing more than *abstract ideas* **until reduced to some type of practical application**, and thus that subject matter is not, in and of itself, entitled to patent protection.

(Bold emphasis added).

[10] *See*, *e.g.*, *Bilski,* 545 F.3d at 959 ("we conclude that the *Freeman-Walter-Abele* test is inadequate"), and *Bilski,* at 959-60

(Continued on following page)

a machine-or-transformation test by the Federal Circuit in *Bilski* is merely the latest iteration of that cycle. Similar to each of its predecessor tests, that test excludes a wide range of legitimate technological innovations, and accordingly should be discarded.

III. *DIEHR* IS WELL-SUITED TO THE INFORMATION AGE.

A. Decades Of Post-*Diehr* Federal Circuit Precedent Confirm That Data And Waveform Transformation, Including Practical Applications of Digital Signal Processing, Are Properly Patent-Eligible.

The principles set forth in *Diehr* regarding patentable subject matter under Section 101 have proven to be just as applicable to contemporary information technology as they were to the computer-aided industrial rubber curing process *Diehr* specifically addressed. Three decades of post-*Diehr* precedent confirm that practical applications of digital signal processing and other methods that operate on incorporeal forms of data are still entitled to patent protection.

In *In re Abele*, 684 F.2d 902 (Cust. & Pat. App. 1982), the predecessor court to the Federal Circuit Court of Appeals reviewed "an improvement in CAT

("we also conclude that the 'useful, concrete and tangible result' inquiry is inadequate").

scan imaging technique whereby the body [was] exposed to less radiation and, through use of a weighting function in the calculations producing the image, the artifacts [were] eliminated." *Id.* at 904. Although an independent claim drawn to a mathematical algorithm without regard to the data source was found not to be patent-eligible, the court did find that a dependent claim tied to "X-ray attenuation data" was patentable. *Id.* at 908-09. The dependent claim did not recite "a mere procedure for solving a given mathematical problem." *Id.* at 909. Rather, like in *Diehr*, the improvement "reside[d] in the application of a mathematical formula within the context of a process which encompasse[d] significantly more than the algorithm alone." *Id.*[11]

In *Arrhythmia Research Tech., Inc. v. Corazonix Corp.*, 958 F.2d 1053 (Fed. Cir. 1992), the Federal Circuit held that a mathematical analysis of a digital representation of an echocardiographic heart reading that could identify an acute arrhythmia was patentable. The court found that though there was a mathematical aspect to the invention, the "**input signals . . . [were] related to the patient's heart function,**" the transformation of electrical signals

[11] In discussing *Abele*, the Federal Circuit suggested that the patent-eligible claim recognized a sufficient nexus to the physical world, noting that the "data clearly represented physical and tangible objects, namely the structure of bones, organs, and other body tissues." *See Bilski*, 545 F.3d at 963 (discussing *Abele*).

from one form to another was itself physical, and ultimately "a signal related to the patient's heart activity," something manifestly physical, was the "resultant output." *Id*. at 1059 (emphasis added). The court expressly noted the analogy to *Diehr*, stating "applicants 'do not seek to patent a mathematical formula . . . they seek only to foreclose from others the use of that equation in conjunction with all of the other steps in their claimed process.'" *Id.* at 1059-60. The same sort of physicality relied on in *Arrhythmia* is found in digital audio signals. Audio signals relate to sound waves that travel through the air which when incident on the human ear drum create the perception of sound. They are analogous to the echocardiographic signals that measured heart rate, which were analyzed in *Arrhythmia* and held to be patentable.

In re Nuijten, 500 F.3d 1346, 1356-57 (Fed. Cir. 2007) confirmed patent-eligibility of a process for embedding a digital watermark in a digital audio signal without comment. Claim 1 of the *Nuijten* application, which was not at issue but was mentioned by the Federal Circuit, illustrates just how well-entrenched digital audio signal processing has become as a patent-eligible field.[12] This process claim

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[12] Claim 1 is the broadest process claim allowed. It reads:

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

(Continued on following page)

is not tied to a "particular machine" and it operates on nothing more than an audio "signal" to improve its quality. A *Bilski* footnote commented, "**[w]e note that the PTO did not dispute that the *process* claims in *Nuijten* were drawn to patent-eligible subject matter under § 101 and allowed those claims**." *Bilski,* 545 F.3d at 951, n.2 (bold emphasis added). Though these claims were allowed by the Patent Office, and were not criticized in *Bilski*, there is more than a mere hypothetical concern that such claims would not be deemed patent-eligible post-*Bilski. See* Section IC, *supra* (post-*Bilski*, the PTO is requiring machine references which wrongfully limit the scope of the invention).

Diehr allows claims that apply mathematical, scientific or technological principles to achieve a practical result. This strikes an appropriate balance between society's interest in creating incentives for companies to invest in research and development versus the need to preserve fundamental principles,

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> 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.

Nuijten, 500 F.3d at 1351.

abstract ideas and general scientific knowledge to the public. It should be as effective going forward as it has been since it was instituted three decades ago.

B. If *Bilski*'s Invention Is To Be Rejected Based On The Non-Technical Nature Of The Invention, The Standard Applied Should Be Precise And Unambiguous.

The claimed invention in *Bilski* is a method of hedging risks in commodities trading. The *Amici* take no position on whether the *Bilski* claims should be rejected. If, however, patentability is rejected based on the non-technical nature of the invention,[13] the standard should be articulated with sufficient precision as to leave no ambiguity that processes practically applying scientific and mathematical technological principles remain patent-eligible.

CONCLUSION

This Court's jurisprudence in *Diehr* provides an appropriate roadmap for patentability into the 21st Century. Under *Diehr*, the manipulation of a waveform by application of scientific principles to achieve a result that has practical use is patentable. Not only does such a test provide certainty and

[13] *See* Article I, Section 8 of the U.S. Constitution.

consistency with prior precedent, it is proper policy as well. Furthermore, this Court should not hold that patentability requires the transformation of material or an "article" with the traditional physicality of the industrial age. Such an interpretation would do violence to innumerable technological innovations that have useful, practical application in the information age.

Respectfully submitted,

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