Ten Points on the Oral Argument in *Nuijten*

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On Monday, I attended the oral argument in *Nuijten* and had several reactions to the main lines of questioning in the case. Because the *Nuijten* case seems to have sparked some significant interest, I thought that some people enjoy a general recap of the oral argument and my prediction of the likely result.

The entire argument is helpfully available on the Federal Circuit's website in audio form (http://www.cafc.uscourts.gov/oralarguments/mp3/06-1371.mp3). Because the argument is some 51 minutes long, I have included time indexes in my commentary so that readers who wish to hear the relevant exchanges can simply go to that spot in the oral argument. (Note: Some web browsers may not show the time index as the mp3 file is being played. The time index can be viewed, however, if the mp3 file is saved to disk and then opened with a player such a RealPlayer®. I noted my indexes while using RealPlayer®.)

I have organized my review according to the main themes of the argument. Though I have transcribed the key expressions used by judges and advocates as best as I could, all quotations are approximate.

1. The Categorical Question. Throughout the oral argument, questions were raised about which of the four statutory categories in § 101 — process, machine, composition of matter and manufacture — should be interpreted as including signals. Judge Moore was the most vigorous in pursuing this line of questioning. She raised the issue early in the argument by expressing to Nuijten's counsel that she was "troubled as to how it [a signal] fits into one of the four statutory subject matters." [Time index 4:25.]

It seems fair to say that Nuijten's counsel was not able to provide Judge Moore with a very satisfying answer to this crucial question. His first attempt began by explaining what his client was *not* trying to claim: "The signal we are trying to protect is not the data. It's the man-made way of arranging, producing, packaging the data." [4:35] He explained that this process allowed the data to "take a physical form." Of course, the PTO has allowed claims to the process, and Nuijten's counsel did not take the opportunity to identify which of the four statutory categories include signals.

Questioning turned to other issues (see point 2, below), but later Judge Moore returned to the same theme when she asked counsel to "tell me how a signal falls into one of [the four statutory categories] because that's where I'm struggling." [9:40] Nuijten's counsel responded by arguing that "[t]here's overlap between those categories" and by asserting that "it's not necessary to try to divide up — to find the one category" into which signals fit. [9:58] He then stated that "we've argued that it's a material, it's a machine, and it's a process." Judge Moore corrected the counsel saying, "I assume 'by material,' you mean 'manufacture,'" and Nuijten's counsel agreed. Judge Moore then turned her questions to the meaning of "process," and Nuijten's counsel ultimately concluded that "a signal is process because a signal is a technological art – it's probably close to what's considered useful today." [11:38] That response

didn't seem to convince Judge Moore as she remarked that, under the counsel's definition, "it seems like everything is a process." [12:08]

The exchange on statutory text did not seem to go particularly well for Nuijten's side. The inadvertent substitution of the word "material" in place of "manufacture" didn't seem particularly helpful, and the overall exchange did not seem to be convincing to Judge Moore.

2. Signals on Paper. Between Judge Moore's textualist questions, Judge Gajarsa asked a series of very interesting questions concerning whether the claim at issue — claim 14 — would be infringed if someone wrote the signal down onto a piece of paper. [5:28 - 7:00] To me, Judge Gajarsa's questions raised two important points: First, if the signal is written down on paper, then it would seem to be embraced within claim 15, which was *allowed* by the PTO and covers a "storage medium" containing the relevant signal. Simply put, Judge Gajarsa's hypothetical does not divide Nuijten's and the PTO's positions: Under both, paper containing signals is patentable.

This point seems extraordinarily important because, throughout the argument, the judges seemed concern that signal claims could open up vast new areas of patenting for music, sounds, words, etc. Yet such concerns seem entirely beside the point in this case because the PTO here is willing to allow claims covering hard drives, RAMs, or pieces of paper containing the signals. If there is a good reason for holding unpatentable esthetically pleasing arrangements of words or music notes (and I think there is, though that's a larger discussion), then that reason would also preclude claims covering music and words on a hard disk or written onto paper.

The second point raised by Judge Gajarsa's hypothetical concerns the scope of Nuijten's claim 14. Though the Federal Circuit judges repeatedly referred to the claim as "broad," the claim language has to be interpreted in light of the overall disclosure in the patent specification. See *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). Nuijten's overall patent is directed toward solving a particular technical problem concerning the signal distortion that arises when a watermark is inserted into the signal. It's clear that this sort of problem arises with a variety of electronic and electromagnetic signals, including stored signals of those types. But it's highly unlikely that this is an issue for signals written down on paper, smoke signals, or other types of signals that one could imagine. Indeed, Nuijten's Brief seems to be pretty clear on this point, for it describes Nuijten's patent application as covering "a technology for identifying and protecting property rights in *audio, video, electronic documents and similar works*" and as being directed toward reducing "noise" associated with prior art watermarking techniques that "severely degrade the quality of *high resolution sound and picture transmission*." Appellant's Br. at 3, 4 (emphasis added).

Moreover, if the watermarking "noise" problem does arise with other types of signals, it's not at all clear that Nuijten's specification would enable a person skilled in the art of smoke signals or paper signals to solve the problem. This underscores the importance of following *Phillips v. AWH* in construing claims, and the danger to *inventors* of failing to do so. The specification ties the words of the claims (which are often succinct and general) to real-world technology and physical processes.

3. Morse's Claim 5. Judge Linn, who in general seemed the panel member most skeptical of

the PTO's position, posed good questions to both sides concerning Samuel Morse's claim 5, which reads:

> Fifth. I claim, as my invention, the system of signs, consisting of dots and spaces, and of dots, spaces, and horizontal lines, for numerals, letters, words, or sentences, substantially as herein set forth and illustrated, for telegraphic purposes.

O'Reilly v. Morse, 56 U.S. 62, 86 (1854). Judge Linn suggest to Nuijten's counsel that "as I read that claim, it sounds very much like the signal claim at issue here." [13:45] Not surprisingly, Nuijten's counsel agreed. [14:30] Judge Linn construed the *O'Reilly* case as holding this claim to be a patentable "art," even though it read like a "manufacture." [14:37] Later the PTO said that Morse's claim 5 was "more about creating an alphabet ... creating a language, and it didn't have anything to do with the actual electrical signals or pulses that were being transmitted [and] that would ultimately get decoded ... at the end of the transmission." [40:40]

Two points are worth noting. First, the PTO did not explain why an alphabet or language that doesn't have anything to do with electrical signals — i.e., that is more divorced from the physical world than the signal claim at issue in Nuijten — is more easily patented than a signal. Morse's claim does not seem to fit with the PTO's definition of a "process" or "art" (and the modern statute carries forward the older term by using "art" to define process in § 100), for the PTO defines those terms to demand a "series of acts or steps." PTO Br. at 11.

Second, as Judge Linn noted, the *O'Reilly* Court did not focus much on the patentability of claim 5, so the decision is not controlling. Nevertheless, the Patent Office had issued claim 5 and, with the exception of claim 8, the Supreme Court held Morse's patent valid and infringed. Before the Supreme Court, Morse's counsel had argued that claim 5 was patentable because it was an "improved instrumentality," 56 U.S. at 101. While actions of the old Patent Office and the arguments of Morse's counsel certainly do not bind the Federal Circuit, they do provide some evidence that it is not at all radical or even new to view signs and signals as patentable "manufactures."

4. "It Doesn't Involve Any Electrical Signals At All." Oddly enough, Nuijten's counsel stressed very early in the argument that the rejected claim is "not an electrical claim; it doesn't involve any electrical signals at all." [Index 2:30.]

This emphasis seemed a bit curious to me. I think counsel was trying to convey a very subtle point, but it was not clear that he succeeded. Even for the most prosaic of inventions — for example, a new type of doorknob — the manufacture may be claimed independent of the material from which the manufacture is fashioned. Thus, a claimed doorknob might cover a knob made out of wood, steel, glass, ceramic, etc. All manifestations of the claimed object will have a certain quality — a "doorknob-ness" — but the claim need not be limited to any particular material. Such claims are ubiquitous and are plainly not abstract. Similarly, a signal could be formed from a particular arrangement of electrons, photons, vibrations of air, pits on a disk, etc. It is not cause for concern — indeed, it is not at all unusual — that a claimed object may cover multiple materials from which the object can be manufactured.

5. $E = mc^2$. By far, the worst point in oral argument came in the PTO's response to a question by Judge Linn about the relationship between energy and mass. The question arose after the PTO's counsel distinguished between things composed of "energy," which the agency believes unpatentable, and things having "mass." [34:05] Judge Linn asked "wouldn't our friend Mr. Einstein say that the two are the same?" [34:17]. The PTO's counsel answered:

> "No, he would not say it's the same. He would say that under extreme circumstances you can convert mass and energy — like for example in an atomic bomb, nuclear fission. But atomic bombs and nuclear fission are not what's going on when you are transmitting a signal from point A to point B whether it's by a radio frequency wave, or an optical wave or an electrical wire." [34:20]

On this point, the PTO's counsel is plainly wrong. $E = mc^2$ is a general rule of nature. It holds *all the time*, not just in extreme circumstances. A good, clear explanation of this point is available at the following link - http://www.pbs.org/wgbh/nova/einstein/experts.html, which contains an audio file from Nobel laureate Sheldon Glashow, who explains: "When an object emits light, say, a flashlight, it gets lighter." As Glashow explains, Einstein's insight completely overturned the 19th century view that mass and energy were always conserved.

The $E=mc^2$ point has also been noted by some who have commented on my earlier paper. For example, Greg Aharonian has written that my paper erred in referring to a distinction between energy and mass. He states: "But ever since Einstein's theory of relativity, there is NO modern distinction between energy and matter." I'm not sure that I'd deny any distinction whatsoever. Physicists can still agree on what to put into "E" and "m" in Einstein's formula. But really this is little more than a semantic quibble with Greg's point; we plainly agree as to the science. Einstein's formula demonstrates that mass and energy are interchangeable, and indeed even to define "mass" these days, physicists have to agree on a convention of using "rest mass" or "invariant mass."

In my earlier paper, I avoided discussing the $E=mc^2$ point not because I didn't know about Einstein (I have a degree in physics, and I had to learn a little Einstein to graduate), but instead because the PTO was making textualist arguments. I thought it worthwhile to investigate those arguments on their own terms and with a bit of historical accuracy.

The interesting thing going on here is that the distinction the PTO wants to draw — between "energy" and "matter" — would not be recognized as meaningful by 18th century speakers or by 20th or 21st century scientists. If the distinction ever held much meaning, it would have been in the 19th century, and the current "common sense" linguistic connotation of "matter" (and probably not actual denotation of the word) may now reflect that distinction. Oddly enough, this connotation of "matter" seems to have crystalized just as the science was learning that the distinction was not so clear and the two categories were interchangeable. And so we are left with this curiosity: The unthinking textualist (one who applies modern common-sense connotations of the words) might get the wrong answer (as the PTO does) even though both the sophisticated textualist (who carefully examines the definitions from 1793) and the sophisticated scientist (who looks to modern theory) would get the right answer. Or, more simply stated, the only way to get

the PTO's result is to adopt ahistoric definitions and to construe those definitions narrowly in a way that's not so rational in light of modern scientific understanding. That doesn't seem like a good way to interpret any statute, and it seems particularly pernicious in the patent field.

Greg Aharonian also asked what I would do if Congress codified a distinction in 1793 that we later learn makes no sense scientifically. That's an interesting question, and I'd like to someday consider that issue in a real-world context. But the *Nuijten* case presents no such conflict between science and textualism.

6. "We Don't Give Out Patents on Just the Software Code Itself." Any doubt of *Nuijten*'s significance was dispelled when the PTO's counsel asserted that "[w]e don't give out patents on just the software code itself." [23:38]. Judge Moore seemed startled by the assertion and asked: "Counsel are you saying that the PTO hasn't given out any software patents?" [23:48] PTO's counsel backtracked a bit, recognizing that the PTO will give out software patents if they are connect to a "machine" or "memory." [23:56] The exchange showed that sustaining the PTO position in *Nuijten* puts software patents in a precarious position and opens the possibility of a new set of challenges for software patents that were not drafted in particular ways.

Later in the argument [44:00], Judge Linn began a series of question designed to press the PTO's position that signals and software are patentable only if recorded onto a disk or other such medium. To Linn, this position seemed like "the height of form over substance." [44:20] Counsel answered the question by pointing to Federal Circuit precedent, and that led Linn to make the pithy remark "so the only principled distinction between the two is not one based on any analysis of the statute but simply the constraints under which you function under our precedent." [45:18] That drew laughs in the courtroom, but once again it underscored the stakes of the case.

7. It's a Snap! From the PTO's perspective, the best point in the argument had to come when the agency's counsel snapped his fingers [35:50] to demonstrate that not everything can be considered a "manufacture." The agency's point was that the sound of the "snap," while having a physical reality, could not fit within the PTO's definition of "manufacture," which demanded "raw materials" to be used in the production of the manufacture.

Though this demonstrative seemed to work well at argument, it may not survive more careful reflection. Even using the PTO's definition of "manufacture," the snap doesn't seem to be excluded. Snaps and signals seem a lot like the production of electricity, and there are numerous modern references in statutes, Supreme Court opinions, and other modern sources referring to "the manufacture of electricity." See, e.g., *Pac. Gas & Elec. Co. v. State Energy Res. Conservation & Dev. Comm'n*, 461 U.S. 190, 210 n.22 (1983) (discussing the authority of local governments "to control the *manufacture of electricity* generated by nuclear facilities") (emphasis added; quoting statement by Senator Pastore at 111 Cong. Rec. 19832 (1965)); see also *Tennessee Electric Power Co. v. Tennessee Valley Authority*, 306 U.S. 118, 136 (1939) (discussing utilities that "manufacture, transmit, or distribute electricity"). If one needs to prove "raw materials" to demonstrate that a manufacture has been made, then coal, gas, uranium, etc. are the relevant raw materials for manufacturing electricity. Similarly, ordinary food is the raw

material that makes it possible for humans to snap their fingers and fill a courtroom with the pressure waves constituting sound.

It is worth mentioning that a snap might have been excluded from 18th definitions of "manufacture." Those definitions required that relevant thing have been produced by skillful "art," as opposed to instinct. Some definitions also required the resulting manufacture to be an item of trade. It's not clear that a finger snap can satisfy either requirement.

8. "Anything Under the Sun That Is Made by Man." An oral argument on § 101 would not be complete without someone mentioning the famous 1952 legislative reports from both the House and Senate, which stated that the existing language on patentable subject matter (which was being recodified) was understood to "include anything under the sun that is made by man." S. Rep. No. 1979, 82d Cong., 2d Sess. 5 (1952); H.R. Rep. No. 1923, 82d Cong., 2d Sess. 6 (1952). Judge Linn asked the PTO about this legislative history. [29:40] The PTO argued that, while "that is an oft-quoted statement," "Congress did not so mandate." [30:34] Judge Linn remarked, "fair enough, that's not the language in this statute." [30:52]

Of course, Congress did not codify the language in the legislative history, but this legislative history demonstrates that Congress was well aware of the sweeping definitions that the words in section 101 — especially "manufacture" — had in the 1790's when the words first entered into statutory law. As I noted in my earlier paper, Samuel Johnson's dictionary of 1755 (which was a leading dictionary of the time and remains one of the most famous dictionaries ever created) defined manufacture to include "any thing made by art," with art defined broadly to include "[t]he power of doing something not taught by nature and instinct."

This seems a good place to respond to another comment made by some readers of my earlier paper. David Hricik and some others have questioned whether it is appropriate to use 18th century definitions in interpreting a statute that was recodified in 1952 and is being applied in 2007. The recodification issue is easily answered, at least from a legal standpoint. The Supreme Court has repeatedly held that, where Congress recodifies statutory language without change to that language, the original meaning continues to control. The point is put most succinctly in *King Mfg. Co. v. City Council of Augusta*, 277 U.S. 100 (1928), where the Court was interpreting a statutory provision that had been originally enacted in 1789 as part of the First Judiciary Act. The same language had been reenacted in several subsequent judiciary acts, most recently in 1925. The Court said:

> It will be seen that the phrase "a statute of any State" has been in the provision from the time of its original enactment, and that this phrase was retained in the reenactment of 1925 without change or qualification. So, its meaning before the reenactment is its meaning now.

Id. at 806-07.

David Hricik also raises much broader jurisprudential issues concerning whether original meaning should ever be used in interpreting Congress's patent enactments. Hricik's comments

raise important and interesting issues, which I will have to leave for another day. My overarching point, however, is that these broader debates do not affect the right outcome in *Nuijten*. The Enlightenment-era Congress of 1793 hoped and expected that scientific knowledge would grow and change, and that's precisely why words with capacious meanings were chosen to define patentable subject matter.

9. Judge Linn's Final Question. At the very close of oral argument, Judge Linn asked Nuijten's counsel whether a ruling in favor of patentability could lead to some "very, very broad claims covering some subject matter that heretofore might not have been considered patentable subject matter." [49:20] Judge Linn gave the example of a "sequence of sounds" and asked whether the sequence would be patentable "even though there is no physical tangible thing?" [50:39]

Judge Linn's question seemed to be a "parade-of-horribles "-style question, and he seemed to be seeking some reassurance from counsel that a decision in favor of patentability would not open the floodgates to a mass of new and unusual claims. It seemed a bit surprising then when Nuijten's counsel answered in the affirmative [50:20]— suggesting that, yes, this case could open up the proverbial floodgates. That answer, more than anything else, seemed to give pause to Judge Linn, who otherwise seemed fairly sympathetic to Nuijten's appeal. For Nuijten, it was not an auspicious ending to argument.

The floodgates problem is not, however, presented by the case at all. As discussed above in connection with Judge Gajarsa's "signals on paper" hypothetical, the PTO's position here allows signals to be patented if they are put onto a recording medium. Whatever its outcome, the *Nuijten* case is not going to solve the age-old debate about the patentability of printed matter, musical notes, songs and the like. I think there probably are barriers to patenting such things as songs, and those barriers would prevent patenting of a song even if it is recorded on an Ipod.

10. A Prediction. Despite my view that the PTO should not win this case, I think the panel after argument seemed poised to line up at least 2-1 the other way, with Judges Gajarsa and Moore sustaining the agency's position. Indeed, the last two minutes of argument seemed to put even Judge Linn's vote in play.

Published opinions of the Federal Circuit are said to be circulated to all members of the court, and perhaps that process will generate an effort within the court to en banc the case prior to the issuance of a panel opinion. Whichever side loses, we can expect a petition for en banc review and a certiorari petition to the Court. If the agency loses, it can almost certainly get Supreme Court review if sought (the Court grants government certiorari petitions at a rate much greater than 50%). If the applicant loses, the chances of getting Supreme Court attention are much lower, though the Justices have shown that they are interested in adjudicating the scope of § 101 (see *LabCorp v. Metabolite*).

Overall, the PTO must like its odds of winning this case, and patentees and patent applicants — and especially software patentees and applicants — should begin to think carefully about whether their claims are vulnerable to attack under the PTO's position in *Nuijten* and the logical extensions of that position.