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To: AB98 Comments
Subject: IBM Comments - Interim Examination Instructions for Evaluating Patent Subject Matter Eligibility

Ms. Dennison -

Attached are IBM Corporation's comments.

Regards,

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(See attached file: IBM Comments Interim Examination Instructions.pdf)

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Via Electronic Mail

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Office of the Deputy Commissioner for Patent Examination Policy
Attn: Caroline D. Dennison

IBM Corporation Comments in response to "*Request for Comments on Interim Examination Instructions for Evaluating Patent Subject Matter Eligibility*," 74 Fed. Reg. 47780 (September 17, 2009).

IBM appreciates this opportunity to comment on the Instructions. We support the USPTO's efforts to ensure consistent examination of the subject matter eligibility of patent applications while the patent community awaits a decision from the U.S. Supreme Court on *Bilski v. Kappos*. Given the importance of the issues presented in the *Bilski* case, and the substantial confusion on these issues in the patent community, IBM commends the Office for taking the initiative to promulgate these Instructions. IBM would appreciate an opportunity to comment on future instructions prepared by the Office following the Supreme Court's decision.

OVERVIEW

IBM offers the following observations and recommendations for clarification regarding the Instructions. First, while the Instructions are intended to be "guidance pending a final decision from the Supreme Court in *Bilski v. Kappos*," their reach extends beyond the boundary of the issues addressed in *Bilski* in certain significant respects. The underlying legal question in *Bilski* is what test or set of criteria governs the determination of whether a claim to a *process* is patentable under § 101.¹ The Instructions, however, seem to unnecessarily address exclusions from other categories of patentable subject matter (e.g., for "computer program *per se*", as well as subject matter eligibility of claimed inventions directed to machines, manufactures, and compositions of matter). IBM respectfully recommends that the Office either limit the scope of the Instructions to the examination of process claims, in accordance with the issue presented in *Bilski*, or provide an explanation regarding the inclusion of these additional matters.

¹ See *In re Bilski*, 545 F.3d 943, 952 (Fed. Cir. Oct. 30, 2008), *cert. granted sub nom. Bilski v. Doll*, 129 S. Ct. 2735 (June 1, 2009) (No. 08-964), *renamed Bilski v. Kappos*, No. 08-964. The Federal Circuit's answer to this underlying legal question is at the heart of the two questions now before the Supreme Court: (1) "[w]hether 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,'" and (2) "[w]hether the Federal Circuit's 'machine-or-transformation' test for patent eligibility...contradicts the clear Congressional intent that patents protect 'method[s] of doing or conducting business.'" 35 U.S.C. § 273." See *Bilski v. Kappos*, No. 08-964 (June 1, 2009) at <http://origin.www.supremecourtus.gov/qp/08-00964qp.pdf>.

We also note that the Instructions' guidance on application of the M-or-T test appears to depart from the Federal Circuit's opinion in *Bilski* in certain respects. IBM urges clarification of these instructions, including the flow charts and presentation, and the inclusion of additional examples to further illustrate and clarify points of possible confusion.

Finally, clarity is needed as to which portions of MPEP 2106, 2106.01 and 2106.2 are superseded by the Instructions, if any.

Detailed explanations of the foregoing issues are provided below.

Exclusions list

Page 2 of the Instructions lists examples of claims excluded from the four statutory categories of patentable subject matter. The list seems unnecessary given the stated purpose of the Instructions and its inclusion is confusing. *Bilski* addresses the determination of patentable subject matter for process claims; it neither adds exclusions nor clarifies existing exclusions from the statutory categories of patentable subject matter. Any exclusions from patentable subject matter existing prior to *Bilski* are explained in detail in the MPEP. This list therefore seems unnecessary, and is easily misinterpreted, particularly when no explanation or citation is provided. This is especially true in the listing of "computer program *per se*".

Since the Federal Circuit's *Bilski* decision, patent examiners and the Board of Patent Appeals and Interferences have struggled with software inventions and have often improperly utilized the "computer program/software *per se*" exclusion as the basis for rejection of process claims and product claims.² The Instructions would appear to exacerbate the current confusion by instructing examiners to exclude "computer program *per se*" from patentable subject matter with no explanation or citation providing details on what is meant by such an exclusion.

When a claim is drawn to a process or product, by definition it is not a claim for "computer program/software *per se*." As explained in MPEP 2106.01, the exclusion for "computer program/software *per se*" relates to a claim drawn to the program code as written (i.e., code listings) and not the function performed by such code nor a machine programmed therewith. Accordingly, a § 101 analysis of a process or product claim should never include a "computer program/software *per se*" rejection. *Bilski* did not create such a rejection.

IBM believes it is important that the Office address the confusion evident in current examination practice, which risks disrupting the rights of thousands of inventors and patent owners. To alleviate the confusion, IBM urges the Office to clarify that

² See, e.g., *Ex Parte Petculescu*, Appeal No. 2008-002859 (June 4, 2009).

the recitation of “computer program *per se*,” in the Instructions refers to claims for code listings, which are descriptive material.³

In light of the importance of this issue, IBM also believes that it would be helpful for the Office to remind examiners that the Federal Circuit declined to adopt a categorical patentability exclusion for software. *Bilski* is clear that there is no broad exclusion over software.⁴ Software claims may be patent-eligible.⁵

Machines, manufactures, and composition of matter (“products”)

Issuing interim instructions in areas of patent law unaffected by the outcome of *Bilski*, and which have not had the benefit of recent judicial consideration, may have the unintended result of increasing confusion among examiners. Moreover, the instructions regarding computer-readable media can be easily misconstrued. For example, the instructions refer to a computer programmed with “*executable instructions*,” a medium including “*executable instructions*,” and a medium with an “*executable program*.”⁶ These references can be misinterpreted as requiring explicit recitation of “executable” at the expense of, for example, “interpretable” instructions or other instructions not stored in binary form but still readable and transformable by a computer into executable form. We suggest that clarification is provided to prevent any such misinterpretation.

Further, the instructions for product claims (e.g., on page 4, first full paragraph) address whether the addition of descriptive material creates a patentable distinction over the prior art.⁷ It is unclear how and why such a § 102/103 analysis relates to a § 101 analysis of a product claim. No citation is provided for further explanation.

IBM suggests the Office focus the Instructions on *process* claims, and on instructions and examples for applying the Federal Circuit’s machine-or-transformation test to such claims, to better correlate with the issues covered in *Bilski*. In lieu of such narrowing, we respectfully request the Office to explain the inclusion of these additional matters regarding subject matter eligibility of non-process claims, and to clarify the points addressed above to eliminate confusion.

Notwithstanding the above, IBM appreciates the Office’s guidance provided in Example (c) on page 4. Example (c) clarifies that a non-transitory, tangible

³ See Manual of Patent Examining Procedure (MPEP), 8th ed., §2106.01(I) (July 2008), stating “When a computer program is claimed in a process where the computer is executing the computer program’s instructions, USPTO personnel should treat the claim as a process claim. When a computer program is recited in conjunction with a physical structure, such as a computer memory, USPTO personnel should treat the claim as a product claim.”

⁴ See *In re Bilski*, 545 F.3d at 960 n.23, stating “Therefore, although invited to do so by several amici, we decline to adopt a broad exclusion over software or any other such category of subject matter beyond the exclusion of claims drawn to fundamental principles set forth by the Supreme Court.... We also note that the process claim at issue in this appeal is not, in any event, a software claim. Thus, the facts here would be largely unhelpful in illuminating the distinctions between those software claims that are patent-eligible and those that are not.” (emphasis added).

⁵ See *id.*

⁶ See, e.g., Interim Instructions at 4; Interim Instructions presentation at 10.

⁷ See Interim Instructions at 4, first paragraph.

computer readable storage medium *per se* that possess structural limitations under the broadest reasonable interpretation is patent-eligible subject matter. It correctly acknowledges that adding claim limitations such as executable instructions or stored data does not render a statutory eligible claim non-statutory. It also helpfully reminds examiners that all claim limitations must be considered during § 102, 103, and 112 analyses, independent of whether a particular limitation is eligible subject matter under § 101.

Machine-or-transformation (M-or-T) test

IBM believes that the evaluation of patentable subject matter should be focused on the substance of the claimed invention. The Federal Circuit's opinion in *Bilski* supports this view, preserving the principle that form should not be exalted over substance.⁸ Consistent with this principle, the Instructions teach that the machine or transformation required by the *Bilski* test may be present in either explicit or *inherent* form in a process claim.⁹ However, certain passages and examples in the Instructions could be misconstrued as requiring explicit recitation of a machine or transformation. We ask the Office clarify these passages and examples to provide that form over substance examination is neither appropriate nor encouraged.

For example, the Instructions state that “[t]o qualify as a particular machine under the test, the claim must clearly convey that the computer is programmed to perform the steps of the method....”¹⁰ This statement can be misinterpreted to require explicit recitation of a “computer,” or even a “programmed computer.” However, when an inherent tie to a computer exists, an examiner should not insist applicants explicitly recite a “computer” in the claim.¹¹ Similarly, when programming is inherently needed for a computer to perform functional steps, an examiner should not require an applicant recite a “programmed computer” to capture the functionality contained in the steps.

As another example, Example Claim 5 can be misinterpreted to mean that in general adding the limitation of “using a microprocessor” to an otherwise non-eligible claim would be needed to make that claim eligible.¹² While adding this explicit limitation may be appropriate for Example Claim 5, the Instructions lack an example illustrating how a machine or transformation can be *inherent* in a claim for purposes of comparison. Example Claim 6 is helpful in explaining that “obtaining the search results inherently requires a programmed microprocessor to download data from a database,” but in that case the limitation was not found meaningful. It would be very helpful if the Instructions included an example in which the

⁸ See, e.g., *In re Bilski*, 545 F.3d at 957.

⁹ Emphasis added. See, e.g., Interim Instructions at 7, 8; Interim Instructions presentation at 14, 16.

¹⁰ Interim Instructions at 6.

¹¹ See *generally* Interim Instructions at 8, stating “When the machine or article is inherently, and not explicitly, required by the claimed method, and the examiner believes that the record of the prosecution as a whole does not make clear that the method involves a particular machine or a particular article, the examiner should identify the inherent machine on the record.”

¹² See “Process Example: Claim 5,” Interim Instructions presentation at 15.

inherently claimed machine was meaningful and thus the claim directed to patent-eligible subject matter. We offer the following suggested example:

1. A method for use within the code optimization phase of an optimizing compiler operable to move certain range check instructions out of single entry strongly connected regions (SCR) or loops and into linear regions of the instruction stream whereby computational efficiency is increased with no loss of program accuracy, said method comprising
 - placing a range check trap instruction into the header node of the SCR provided there is only one conditional exit from the SCR based on the induction variable, and additional conditional exits none of which are based on the induction variable,
 - modifying the conditional exit test based on the value of the induction variable (v), and
 - inserting additional checks at the loop exit point(s) to insure that the induction variable has reached the value it would have obtained in the original (unmodified) program.¹³

In this claim, the important function of “placing a range check trap instruction into the header node of the SCR” is inherently tied to a particular machine – a computer programmed to have the functionality of a compiler – and thus the claim covers patent-eligible subject matter.

“Machine Prong” of the M-or-T Test – In *Bilski*, the Federal Circuit stated, “We leave to future cases the elaboration of the precise contours of machine implementation, as well as the answers to particular questions, such as whether or when recitation of a computer suffices to tie a process claim to a particular machine.”¹⁴ However, the Instructions appear to add certain substantive limitations to the “machine” prong of the test (in addition to the apparent requirement in certain instances of an explicit recitation of a machine as noted above). For example, the Instructions teach that: “The machine should implement the process, and not merely be an object upon which the process operates. The claim should be clear as to how the machine implements the process...”¹⁵ However, just as *Bilski* does not require explicit recitation of a machine, *Bilski* also does not require such features limiting

¹³ Claim 1 of U.S. Patent No. 4,642,765, issued February 10, 1987, invented by John Cocke, et al.. John Cocke is the winner of the 1994 National Medal of Science “[f]or his contributions to computer science in the design and theory of compilers, and for major advances in the theory and practice of high-performance computer systems;” the 1994 IEEE John von Neumann Medal “[f]or contributions to the computer industry including the invention, development and implementation of Reduced Instruction Set Computer (RISC) architecture and program optimization technology;” the 1991 National Medal of Technology “[f]or his development and implementation of Reduced Instruction Set Computer (RISC) architecture that significantly increased the speed and efficiency of computers, thereby enhancing U.S. technological competitiveness;” and the 1987 ACM Turing Award “[f]or significant contributions in the design and theory of compilers, the architecture of large systems and the development of reduced instruction set computers (RISC); for discovering and systematizing many fundamental transformations now used in optimizing compilers including reduction of operator strength, elimination of common subexpressions, register allocation, constant propagation, and dead code elimination.”

¹⁴ *In re Bilski*, 545 F.3d at 962.

¹⁵ Interim Instructions at 5.

the relationship between the process and the machine. IBM suggests that the Office clarify the Instructions to remove references to limitations such as these that go beyond the scope of *Bilski*.

"Transformation Prong" of the M-or-T Test – The Federal Circuit indicated in *Bilski* that a process claim is patent-eligible when it involves transformation of any physical object or substance, or an electronic signal representative of any physical object or substance.¹⁶ In *In re Nuijten*, the Federal Circuit stated,

*A transitory signal made of electrical or electromagnetic variances...is physical and real....A transient electric or electromagnetic transmission...is man-made and physical – it exists in the real world....*¹⁷

Claim 1 of *Nuijten* was a process claim involving the transformation of a signal.¹⁸ Claim 1 was allowed.¹⁹ In *Bilski*, the Federal Circuit specifically declined to discuss *Nuijten*.²⁰ Therefore, it is our understanding that Claim 1 of *Nuijten* remains patent eligible. Accordingly, we understand that a process claim involving transformation of a transitory signal or transient electric or electromagnetic transmission satisfies the transformation prong of the M-or-T test because transformation of the signal/transmission is transformation of something physical. Moreover, as the Instructions state, "transformation of electronic data has been found when the nature of the data has been changed such that it has a different function or is suitable for a different use."²¹ We ask the Office provide further examples of claims satisfying the transformation prong, particularly examples relating to information technology.

One example could relate to a method for transforming data representing the physical state of a computer, microprocessor, or logic circuit into data representing the physical state of a functionally different computer, microprocessor, or logic circuit. The data could be a memory map, for instance. Such an example would be helpful in explaining that a physical device in a certain state is an eligible "particular article," a physical device in a different state is a different eligible "particular article," and transformation of data representing a particular article to data representing a different particular article is an eligible transformation.

Flow charts – We recommend clarification of the flow chart entitled "Subject Matter Eligibility Test (M-or-T) for Process Claims." The last block in the flow chart and the

¹⁶ See, e.g., *In re Bilski*, 545 F.3d at 964.

¹⁷ See *In re Nuijten*, 500 F.3d 1346, 1355, 1356 (Fed. Cir. 2007) (emphasis added).

¹⁸ Claim 1 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 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. *In re Nuijten*, 500 F.3d at 1351.

¹⁹ See *id.*

²⁰ See *In re Bilski*, 545 F.3d at 951.

²¹ See Interim Instructions at 6.

related description on page 8 instruct examiners to perform a second test after the M-or-T test to confirm statutory eligibility.²² This is contrary to *Bilski*, which neither requires nor suggests conducting a second test to confirm statutory eligibility after the M-or-T test has been applied.²³ While the second test is described as confirming the M-or-T test, it is unclear why the test would need to be performed twice and thus could be read to imply additional requirements.

Also, clarification and further examples illustrating the meaning of the following language would be useful: “the method *particularly* transforms a particular article,” “imposing a *meaningful* limit on claim scope,” and “involving more than *insignificant* extra-solution activity.”²⁴ These phrases, and specifically the italicized words contained therein, are subjective and thus the limitations provided are unclear.

Relation to existing MPEP

More specificity is needed regarding which portions of the MPEP are superseded by the Instructions, and which remain in place. Without clarification, examiners may differ in their interpretations of which MPEP sections are still effective. Some may incorrectly adopt the Instructions as an outright replacement of MPEP 2106, 2106.01 and 2106.02 in their entirety. Either outcome is improper and detrimental to the public. We ask the Office clarify that the Instructions only supersede portions of MPEP 2106(IV) and 2106.02.

We also ask the Office to explicitly acknowledge that MPEP 2106(II) and 2106.01 remain in effect, and emphasize that principles of compact prosecution continue to govern. As such, examiners must review the complete specification and search the prior art before evaluating the claimed invention under § 101.²⁵ If the invention as set forth in the written description is statutory, and the examiner rejects a claim as drawn to non-statutory subject matter under § 101, the examiner should identify the features of the invention that would render the claimed subject matter statutory and guide the applicant to correct the deficiency.²⁶ Further, consistent with the principle of compact prosecution, we recommend clarifying that even if a claim includes subject matter outside of the statutory categories, the examiner must continue the analysis to determine if the claim pre-empts substantially all uses of an abstract idea, law of nature, or natural phenomenon, or if the claim is instead an application of such. Finally, if a claim does not fall into a statutory category or otherwise includes ineligible subject matter, the patentability analysis does not end

²² The last block states: “Confirm M-or-T test: Ensure claimed method (1) is not so abstract and sweeping as to have no real world application and (2) does not pre-empt substantially all practical uses of a judicial exception.”

²³ See *In re Bilski*, 545 F.3d at 954, stating “The Supreme Court...has enunciated a definitive test to determine whether a process claim is tailored narrowly enough to encompass only a particular application of a fundamental principle rather than to pre-empt the principle itself. A claimed process is surely patent-eligible under § 101 if: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing.”

²⁴ See “Subject Matter Eligibility Test (M-or-T) for Process Claims” flow chart.

²⁵ See MPEP 2106(II), (III).

²⁶ See MPEP 2106(IV)(B).

there; the examiner must still examine the claim for compliance with § 102, 103, and 112.²⁷

Conclusion

IBM asks that the Office clarify the Instructions as discussed above, including by concentrating the Instructions on guidance and examples for applying the Federal Circuit's M-or-T test to process claims. IBM looks forward to an opportunity to comment on future guidelines following the Supreme Court's decision on *Bilski v. Kappos*.

Respectfully submitted,

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²⁷ See MPEP 2106(IV)(B).