The BPAI's Position on 35 USC 101 Patentable Subject Matter in Computer Implemented Inventions

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I. INTRODUCTION AND SUMMARY

In In re Bilski,[2] the Court of Appeals for the Federal Circuit ("CAFC") indicated that a process claim is patentable subject matter under 35 USC 101 if it either specifies a transformation of the state of matter or it is limited to implementation on a specific machine. A few month's prior to Bilski, the BPAI marked two opinions dealing with substantially the same issue as "Informative opinions".[3] See Ex Parte Wasynczuk, No. 2008-1496 (2 June 2008) and Ex Parte Langemyr, No. 2008-1495 (28 May 2008). However, Wasynczuk and Langemyr could just as well have been published after Bilski, because they employ the test approved in Bilski. Importantly, Wasynczuk and Langemyr further elaborate on the Bilski test as applied by the BPAI. They hold that a claim reciting a "computer implemented" process does not define implementation tied to a "particular machine"' and therefore does not satisfy the requirements of 35 USC 101. They hold that a claim reciting a general purpose computer system programmed to perform calculations and output results without any additional limitations, does not define a "particular machine," and therefore does not satisfy the requirements of 35 USC 101. They hold that a claim defining storing data in a "data structure" does not define a "particular machine," and does not distinguish from "manipulation of abstract ideas" and therefore does not satisfy the requirements of 35 USC 101.

II. EX PARTE WASYNCZUK, NO. 2008-1496 (2 JUNE 2008)

SUMMARY: System claim that defines a "computer-implemented system" based upon a specification disclosing only a general purpose computer system, and which claim recites only functional language for computations, does not define a "particular machine" required to satisfy 35 USC 101's requirement that a process that does not transform matter be implemented on a particular machine. See claim 1, below. Method claim that recites a "computer-implemented method" for performing a simulation that defines operations performed on two separate "physical computing device[s]" employs a particular machine that satisfies 35 USC 101's requirement that a process that does not transform matter be implemented on a particular machine. See claim 9, below.

The following claim 1 found not in compliance with 35 USC 101:

> 1. A computer-implemented system, comprising: a first executing process that:
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> implements a first continuous-time model to simulate a first physical subsystem, the first model being programmed in a first language and having a first

state variable; and

sends a first series of state-related numerical values, each numerical value reflecting information relating to the value of the first state variable at a different point t, in simulation time in the first model; and

a second executing process that:

receives said first series of state-related numerical values from said first executing process without said first series of state-related numerical values passing through a central communication process;

implements a second continuous-time model to simulate a second physical subsystem, the second model being programmed in a second language and taking as an input values from said first series of state-related numerical values; and outputs data representative of a state of the second continuous-time model.

Quote from Ex Parte Wasynczuk regarding why claim 1 is does not satisfy 35 USC 101:

Unlike method claims 9-13, 16-20, 24-26, and 34-38 discussed above, Appellants' system claims 1-8, 29, 3 1, and 32, lack any "particularly claimed combination of elements", and therefore lack those characteristics that separate a practical application of an idea from just the idea itself. Appellants' claim 1 sets forth a computer-implemented system comprising a first and a second executing process with each executing process in turn setting forth a series of functions to be performed to carry out what is essentially the method of Appellants' claim 9. As we have already discussed, the method of claim 9 is "simply solving purely mathematical representations of physical systems." Therefore we must determine if claim 1 is "in reality [seeking] patent protection for that idea in the abstract." Diehr, 450 U.S. at 191.

We found that Appellants' claim 9 does not seek to patent its mathematical algorithm in the abstract and is instead directed to "a particular machine implementation of the mathematical algorithm." However, unlike claim 9, we do not find a particular machine being recited in claim 1. Instead, the sole structural limitation recited is the "computer-implemented system" of the preamble of claim 1. As Appellants have set forth by example, the claimed computer is not any particular apparatus (FF 6). Rather, we find that the computer or processor is essentially any conventional apparatus that performs the claimed functions. Thus, we conclude the system of claims 1-8,29, and 3 1-33 cover ("preempt") every substantial practical application of the abstract idea. We conclude that these claims are so broad that they are directed to the "abstract idea" itself, rather than any practical implementation of the concept. Thus, these claims fall outside the scope of 101.

The following claim 9 found to satisfy 35 USC 101:

9. A computer-implemented method for simulating operation of a physical

system having a plurality of physical subsystems, comprising:

simulating a first physical subsystem with a first continuous-time simulation on a first physical computing device;

accepting a request for export of information relating to a number n of state-related variables that characterize the state of the first physical subsystem in said simulating;

sending a first series of state-related messages, each message containing information relating to the value of at least one of the n state related variables;

simulating a second physical subsystem with a second continuous time simulation on a second physical computing device;

receiving in said second continuous-time simulation said first series of state-related messages from said first continuous-time simulation without said first series of state-related messages passing through a central communication process; and

outputing [sic] data representative of a state of the second continuous time simulation; wherein:

the first physical subsystem interacts with the second physical subsystem; and

the at least one state-related variable characterizes at least a portion of the interaction between the first physical subsystem and the second physical subsystem.

Quote from Ex Parte Wasynczuk regarding why claim 9 satisfies 35 USC 101:

However, unlike the method claims in Corniskey, Appellants' claims recite a process that employs one of the other statutory categories. Specifically, claim 9 recites that the first simulating step is performed on "a first physical computing device" and the second simulating step is performed on "a second physical computing device" which we conclude is "a particular apparatus" to which the process is tied, not simply a generic computing device for performing the steps. Appellants' Specification describes this embodiment which uses two computing devices (FF 7) as well as a second embodiment, not covered by this claim, which uses a single computer (FF 8). Because the claim recites a particular apparatus, (1) the method operates on another class of statutory subject matter such that the method is a patentable "process", and (2) the method is not directed to an abstract idea. Unlike in Benson, this claim is directed to a particular machine implementation of the mathematical algorithm that does not encompass every substantial practical application of an abstract idea. Benson, 409 U.S. at 71-72. Accordingly, the claims meet the conditions set forth in the case law of the Supreme Court and the Federal Circuit. Thus, claims 9-13, 16-20,24-26, and 34-38 do not fall outside the scope of 101.

III. EX PARTE LANGEMYR, NO. 2008-1495 (28 MAY 2008)

SUMMARY: A method claim in which the only tie to physical structure is a recitation in the preamble that the method is "computer implemented" does not satisfy 35 USC 101's requirement that a process that does not transform matter be implemented on a particular machine. A method claim defining storing data in a "data structure" does not further limit a claim that otherwise only defines manipulation of mathematical ideas, and therefore is not a method satisfying 35 USC 101.

The following claim 1 was found to not satisfy 35 USC 101:

> 1. A method executed in a computer apparatus for creating a model of a combined physical system having physical quantities by representing physical quantities of the combined physical system in terms of a combined set of partial differential equations, the method comprising:
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> representing at least one of a plurality of systems as two or more selected application modes modeling physical quantities of said one of said plurality of systems;
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> determining a set of partial differential equations for each of the two or more selected application modes, parameters of the partial differential equations being physical quantities of
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> corresponding ones of said plurality of systems;
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> forming said combined set of partial differential equations using the determined sets of partial differential equations associated with said one of said plurality of systems; and
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> outputting a model of said combined physical system based on said combined set of partial differential equations for the two or more selected application modes for the said one of said plurality of systems, whereby the model represents a mathematical expression of the physical quantities of the combined physical system.

Quote from Ex Parte Langemyr:

As explained infra, Appellants' method claim is not a section 101 "process," because it does not include a particular machine, nor does it transform subject matter to a different state or thing. A statutory "process" must meet one of those two requirements.

While Appellants' claim encompasses a "particular machine" embodiment for creating a mathematical expression of a combined physical system, the claim is not limited to such an embodiment. Appellants' claimed method steps, as recited in the body of claim 1, are not limited to process steps using particular structure or apparatus. To the contrary, looking only to the method steps recited in the body of claim 1, they would reasonably be interpreted to encompass a human being performing these steps. The Appellants' claim 1 preamble includes only a nominal recitation of a "computer apparatus." Nominal recitations of structure in an otherwise ineligible method fail to make the method a statutory process. See Benson, 409 U.S. at 71-72. As

Corniskey recognized, "the mere use of the machine to collect data necessary for application of the mental process may not make the claim patentable subject matter." Corniskey, 499 F.3d at 1380 (citing In re Grams, 888 F.2d 835, 839-40 (Fed. Cir. 1989)). Incidental physical limitations, such as data gathering, field of use limitations, and post-solution activity are not enough to convert an abstract idea into a statutory process. In other words, nominal or token recitations of structure in a method claim do not convert an otherwise ineligible claim into an eligible one. To permit such a practice would exalt form over substance and permit claim drafters to file the sort of process claims not contemplated by the case law. Cf., Flook, 437 U.S. at 593 (rejecting the respondent's assumption that "if a process application implements a principle in some specific fashion, it automatically falls within the patentable subject matter of 5 101," because allowing such a result "would make the determination of patentable subject matter depend simply on the draftsman's art and would ill serve the principles underlying the prohibition against patents for 'ideas' or phenomena of nature."). In this case, we decline to allow clever claim drafting to circumvent the principles underlying the Supreme Court's interpretation for "process." The only recitation of structure is in the nominal recitation in the preamble citing a "method executed in a computer apparatus." This recitation is so generic as to encompass any computing system, such that anyone who performed this method in practice would fall within the scope of these claims. Thus, the recitation of a computer apparatus in the preamble is not, in fact, a limitation at all to the scope of the claim, and the claim is directed, in essence, to the method performed by any means. As such, we fail to find that this recitation alone requires the claimed method to include a particular machine such that the method qualifies as a "process" under 101. We will not allow such a nominal recitation in the preamble to convert an otherwise ineligible claim into an eligible one.

Quote from Ex Parte Langemyr regarding why the limitation of "storing said input data in a representation in a data structure stored in a memory of the computer system" does not satisfy 35 USC 101:

> Group 6
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> Claims 26 and 66 depend from claims 1 and 42, respectively, and further recite the steps of (1) using a graphical user interface in connection with input data; (2) storing said input data in a representation in a data structure stored in a memory of the computer system; and (3) converting said input data into an intermediate form wherein said intermediate form for each set of partial differential equations associated with said one of said plurality of systems is used in forming said combined set. ***
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> With regard to the storing step, any machine and any data structure can be used to perform the steps recited in claims 26 and 66. The claim merely recites storing input data in a representation in a data structure stored in a memory of a computer system, but the claim does not specify any particular data structure. The Appellants' Specification does not require a specific data structure. Rather, the Specification describes, with reference to Figure 6A, an example of a representation of a data structure that could be used (Spec. 27: 10-12).

> The phrase "data structure" is defined as "[a] physical or logical relationship among data elements, designed to support specific data manipulation functions." ZEEE Standard Computer Dictionary (1991). We see no way of storing data in a computer memory without storing it in some sort of data structure. The data structure of claim 26 is nothing more than another way of describing the manipulation of abstract ideas contained in claim 1, and thus it suffers from the same fatal defect as claim 1. See Warmerdam, 33 F.3d at 1362.

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1. I can be reached via our firm's web site, www.Neifeld.com.

2. CAFC Docket No. 2007-1130 (10/30/2008 Fed. Cir.) (En Banc).

3.See http://www.uspto.gov/web/offices/dcom/bpai/informative_opinions.html.