

Key Practical Effects From the 2019 PEG

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January, 2019

The eagerly awaited revisions to U.S. patent subject matter eligibility guidance announced by Director Iancu in a speech on September 24, 2018¹, were issued on January 7, 2019 by the United States Patent and Trademark Office (USPTO)². This 2019 Revised Patent Subject Matter Eligibility Guidance (“2019 PEG”) is effective immediately, and all USPTO personnel are expected to follow it.³

The 2019 PEG changes the procedures used by USPTO personnel to determine the *Alice/Mayo* “directed to” inquiry under Step 2A. The previous guidance, equating claims “reciting” a judicial exception to be claims “directed to” a judicial exception, is now superseded. The new Step 2A procedure now includes a Prong I and a Prong II.

New Step 2A Prong I requires determination of whether a claim recites a judicial exception, *i.e.*, a law of nature, a natural phenomenon, or an abstract idea. For abstract ideas, the 2019 PEG defines three groupings for an abstract idea: (a) mathematical concepts – mathematical relationships, mathematical formulas or equations, mathematical calculations; (b) certain methods of organizing human activity – fundamental economic principles/practices, commercial or legal interactions, managing personal behavior, relationships, or interactions; and

¹ See, <https://www.uspto.gov/about-us/news-updates/remarks-director-iancu-intellectual-property-owners-46th-annual-meeting>

² See, <https://www.uspto.gov/patent/laws-and-regulations/examination-policy/subject-matter-eligibility>

³ Failure to follow the 2019 PEG is not, in itself, a proper basis for either an appeal or a petition. Only rejections based upon substantive law are appealable to the Patent Trial and Appeal Board (PTAB) and to the courts.

(c) mental processes – concepts performed in the human mind.⁴ If a claim does not recite a judicial exception, the inquiry ends and the claim is deemed eligible.

New Step 2A Prong II requires determination of whether the claim integrates the recited exception into a practical application:

A claim is not “directed to” a judicial exception, and thus is patent eligible, if the claim as a whole integrates the recited judicial exception into a practical application of that exception. A claim that integrates the recited judicial exception into a practical application will apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception.⁵

In addition, considerations of features being “well-understood, routine, or conventional” (“WURC”) do not apply in the new Step 2A:

Examiners should note, however, that revised Step 2A specifically excludes consideration of whether the additional elements represent well-understood, routine, conventional activity. Instead, analysis of well-understood, routine, conventional activity is done in Step 2B. Accordingly, in revised Step 2A examiners should ensure that they give weight to all additional elements, whether or not they are conventional, when evaluating whether a judicial exception has been integrated into a practical application.⁶

This new Step 2A Prong II, specifically excluding consideration of WURC, reflects Director Iancu’s desire to return subject matter eligibility to its own “lane” instead of comingling

⁴ There is also a fourth catch-all category of “tentative abstract ideas” for the rare circumstance that a claim limitation does not fall within any of the three categories, but is still believed to constitute an abstract idea. This requires approval of the Technology Center Director before such a rejection can be made.

⁵ Federal Register, Vol. 84, No. 4, January 7, 2019 (hereinafter, “2019 PEG”), page 53

⁶ *Id.*, page 55

section 101 with sections 102 and 103.⁷ In the “directed to” inquiry, as Director Iancu stated, “it does not matter if the ‘integration’ steps are arguably ‘conventional’; as long as the integration is into a practical application, then the 101 analysis is concluded.”⁸

For patent practitioners, there are three key practical effects immediately available:

- 1) The 2019 PEG instructs examiners that they are no longer to use the Eligibility Quick Reference Sheet (QRS) identifying abstract ideas.⁹ To the extent that examiners drop the previous practice of citing to case law,¹⁰ legal case law argumentation challenging examiners’ citations to case law from the QRS should subside. This alone should reduce time and costs for a section 101 response.
- 2) For the abstract idea category of “mental steps,” there is now a new emphasis for examiners to consider whether a claimed feature can be “practically performed in a human mind.”
- 3) To the extent that examiners previously concluded a lack of an “improvement in technology” due to features being WURC, WURC is no longer a consideration for determining “integration into a practical application” under Step 2A Prong II.

With regard to the second advantage noted above, the new examples 37-42 issued on January 7, 2019 checks whether a claimed feature can be “practically performed in the human mind” in order to constitute a mental step.¹¹ This comes from footnote 14 in the 2019 PEG, “[i]f a claim, under its broadest reasonable interpretation, covers performance in the mind but for the

⁷ See, footnote 1.

⁸ *Id.*

⁹ 2019 PEG, page 54

¹⁰ USPTO examiners may still cite a court decision, but must still comply with Step 2A, Prong I. FAQ question A-7, https://www.uspto.gov/sites/default/files/documents/faqs_on_2019peg_20190107.pdf

¹¹ See, https://www.uspto.gov/sites/default/files/documents/101_examples_37to42_20190107.pdf

recitation of generic computer components, then it is still in the mental processes category unless the claim cannot practically be performed in the mind.”

One example clearly demonstrates this distinction. Example 37, claim 1 recites “determining, by a processor, the amount of use of each icon over a predetermined period of time.” This is one claimed element in a claim involving the relocation of icons in a graphical user interface, to move the most used icons closest to the “start” icon of the computer. Claim 1’s “determining” step was deemed a mental step. In contrast, Example 37, claim 2 recites “determining the amount of use of each icon using a processor that tracks how much memory has been allocated to each application associated with each icon over a predetermined period of time.” This modified “determining” step cannot be practically performed in the human mind because the human mind cannot access the computer’s memory and track how much computer memory is being allocated to each application associated with an icon. Since the claim does not recite a judicial exception, thus failing Step 2A, Prong I, the inquiry ends and the claim is eligible.

Examples 38 and 39 offer two additional examples of claim limitations that cannot be practically performed in the human mind. These examples illustrate the potential breadth of what is impractical for performance in the human mind.

Example 38 recites:

A method for providing a digital computer simulation of an analog audio mixer comprising:

initializing a model of an analog circuit in the digital computer, said model including a location, initial value, and a manufacturing tolerance range for each of the circuit elements within the analog circuit;

generating a normally distributed first random value for each circuit element, using a pseudo random number generator, based on a respective initial value and manufacturing tolerance range; and

simulating a first digital representation of the analog circuit based on the first random value and the location of each circuit element within the analog circuit.

With regard to mental steps, the Example merely concludes that the claim does not recite any mental steps because the steps are not practically performed in the human mind. No explanation is provided as to why each these steps cannot be practically performed in the human mind.

Of the three claimed steps, the simulation of a digital representation of the analog circuit is most likely impractical for performance in the human mind. But, couldn't a circuit be "modeled" by the human mind with the use paper and pencil, such as done by students taking circuits and electronics college courses? Or, is it impractical to keep track of location and manufacturing tolerances for each circuit element in a complex analog circuit? Couldn't the human mind randomly "generate" or pick a number? Or, it is impractical for the human mind to generate the random value "based on ... a manufacturing tolerance range?" Whatever the rational, each claimed step in Example 38 does not constitute a mental step because it cannot be practically performed in the human mind. This example appears to raise the bar for examiners as to what constitutes "practical" for performance in the human mind.

Example 39 recites:

A computer-implemented method of training a neural network for facial comprising:

collecting a set of digital facial images from a database;

applying one or more transformations to each digital facial image including mirroring, rotating, smoothing, or contrast reduction to create a modified set of digital facial images;

creating a first training set comprising the collected set of digital facial images, the modified set of digital facial images, and a set of digital non-facial images;

training the neural network in a first stage using the first training set;

creating a second training set for a second stage of training comprising the first training set and digital non-facial images that are incorrectly detected as facial images after the first stage of training; and

training the neural network in a second stage using the second training set.

The claim recites data collection, data transformation, creation of new data, and training of a neural network in two stages. Of course, neural networks involve mathematical concepts. However, those mathematical concepts are not recited. As for mental steps, the Example merely concludes, again, that the claim does not recite any mental steps because the steps are not practically performed in the human mind. No explanation is provided as to why each of these steps cannot be practically performed in the human mind.

Of the claimed steps, the training of the neural network is most likely impractical for performance in the human mind. But, collecting a set of digital facial images is not practically performed in the human mind? Or, is it impractical because the facial images must be digital? Creating new data in the form of first and second training sets is not practically performed in the human mind? Or, is it impractical because of the requirement for the modified set of digital facial images and the requirement for transformation of data to create the modified set of digital facial images? Under the prior guidance, an examiner may have cited the *Digitech* and/or

Electric Power Group cases from the QRS to assert recitation of an abstract idea in this claim.¹² Nevertheless, each claimed step in Example 39 does not constitute a mental step because it cannot be practically performed in the human mind. As with Example 38, Example 39 also appears to raise the bar for examiners as to what constitutes “practical” for performance in the human mind.

Despite questions regarding the threshold of what is practically performed in the human mind, the 2019 PEG and these Examples certainly provide a basis to challenge examiners on whether alleged mental steps are practically performed in the human mind. As noted in the FAQs, although examiners cannot use the Examples as a basis for a section 101 rejection, applicants may cite to Examples in support of eligibility.¹³

Another key change from the 2019 PEG is the elimination of considerations of WURC in Step 2A. The primary difference, if not the only difference, between Steps 2A and 2B is the consideration of WURC (considered in Step 2B, but not considered in Step 2A). This impacts the assessment of “integrated into a practical application.”

First, what is and what is not “integrated into a practical application” under Step 2A, Prong II, are exemplified by the examples described in MPEP 2106.05(a)-(c) and (e)-(h)¹⁴, and the USPTO memorandums regarding *Berkheimer*, *Vanda*, *Finjin* and *Core Wireless*.¹⁵ MPEP 2106.05(a) describes case law and guidance for determining patent eligible subject matter involving an improvement to the functioning of a computer or to any other technology or technical field. MPEP 2106.05(b) describes case law and guidance for determining patent eligible subject matter involving the use of a particular machine. MPEP 2106.05(c) describes

¹² The 2019 PEG still uses MPEP 2106.04(a), as referenced in footnote 10. And, MPEP 2016.04(a)(2)III “An Idea of Itself” describes examples of mental steps that could have included some of the steps in Examples 38 and 39.

¹³ See, question F-4 at https://www.uspto.gov/sites/default/files/documents/faqs_on_2019peg_20190107.pdf

¹⁴ MPEP 2106.05(d) is excluded because MPEP 2106.05(d) addresses WURC, which is not considered in Step 2A.

¹⁵ 2019 PEG, page55 and footnotes 25-32

case law and guidance for determining patent eligible subject matter involving a transformation of an article into a different state or thing. MPEP 2106.05(e) describes case law and guidance for determining patent eligible subject matter involving some other meaningful limitations beyond generally linking the use of the judicial exception to a particular technological environment. MPEP 2106.05(f) describes case law and guidance for determining patent ineligible subject matter when the claim merely calls for “apply it” (or equivalent), such as implementing the abstract idea on a computer or using the computer as a tool. MPEP 2106.05(g) describes case law and guidance for determining patent ineligible subject matter involving insignificant extra-solution activity. MPEP 2106.05(h) describes case law and guidance for determining patent ineligible subject matter that does no more than generally link the use of the judicial exception to a particular technological environment or field of use.

A common approach to establishing patent eligible subject matter is to assert an improvement to the functioning of a computer or to another technology under MPEP 2106.05(a). However, as stated in the FAQs for the 2019 PEG:

The 2019 PEG changes the improvement analysis previously performed at Step 2A. In particular, under the 2019 PEG, your analysis of the “improvements” consideration in Step 2A should determine whether the claim pertains to an improvement in the functioning of a computer or to another technology without reference to what is well-understood, routine, conventional activity.¹⁶

This addresses the concern that, sometimes, examiners simply dismiss the “conventional” additional elements in the claim and just focus on the remaining abstract idea in the “directed to” inquiry. A frequent burden to overcome is an examiner’s assertion that there is no “improvement” to technology because the claim merely recites a “conventional” apparatus, other

¹⁶ FAQ question G-2, https://www.uspto.gov/sites/default/files/documents/faqs_on_2019peg_20190107.pdf

than the judicial exception. This analysis was sometimes lumped into a Step 2B analysis, without much thought about its applicability under Step 2A.¹⁷ Now, examiners are forced to consider, for example, the improvement in technology without dismissing or ignoring the interrelationship with “conventional” features, in Step 2A, Prong II. This is hoped to lead to less section 101 rejections.

¹⁷ Compare, for example, the results between *Ex Parte Itagaki*, Appeal No. 2015-002702, s/n 12/598,168 (MRI system ineligible because the claim recited the abstract idea of “classification” of digital MRI images at different MRI stations, and there was nothing significantly more because all the MRI components were conventional) and *Ex Parte Vahala*, Appeal No. 2017-001113, s/n 14/391,183 (101 rejection of MRI and Ultrasound system reversed because examiner did not satisfy *Berkheimer* requirements regarding the alleged WURC nature of the MRI and ultrasound elements). *Ex Parte Itagaki* was decided pre-*Berkheimer* and *Ex Parte Vahala* was decided post-*Berkheimer*. This highlights the difference in result when considering “conventional” features. Without consideration of WURC in Step 2A, the result in *Ex Parte Itagaki* could be different if prosecuted today.