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2019 revised patent subject matter eligibility guidance

Advanced module

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Logistics for today's training

- **This is an instructor-led training session**
  - Questions will not be fielded during this session
  - Please submit your questions concerning the training to 101TrainingQuestions@uspto.gov
- **These training slides are available on the Subject Matter Eligibility microsite**
  - You can download the slides from this link: http://ptoweb.uspto.gov/patents/exTrain/101.html
  - The slides will be made public once this phase of training has been complete

Introduction

USPTO strategic plan

- **Key goal is to optimize patent reliability**
  - As the USPTO Director has explained, "[r]eliable patent rights are key to economic growth. Providing high quality, efficient examination of patent applications will serve the American economy well."
  - Initiatives to achieve this goal include:
    - Improving examiner access to prior art
    - Enhancing operations of the PTAB
    - Training and guidance initiatives to support high-quality examination

Current training & guidance initiatives

- **Initiatives rolled out in 2018 focus on reinforcing examiners' knowledge of the current procedures and legal tests, and on teaching analytical and writing techniques:**
  - Prior Art Capstone Workshop on 35 U.S.C. 102 and 103
  - Legal Analysis and Writing (LAW) Workshop III Training
- **Two new initiatives:**
  - Examining Computer-Implemented Functional Claim Limitations for Compliance with 35 U.S.C. 112
  - 2019 Revised Patent Subject Matter Eligibility Guidance on 35 U.S.C. 101

Section 112 initiative

- **Addresses issues under 35 U.S.C. 112 related to the examination of computer-implemented functional claims**
  - Covers claim interpretation, including interpretation under 35 U.S.C. 112(f)
  - Covers the Section 112 requirements for definiteness, enablement, and an adequate written description
- **The purpose of this initiative is to reinforce good practices in claim interpretation and evaluation of the Section 112 requirements**
  - Emphasizes that problems with functional claiming can be effectively addressed using long-standing, well-understood principles under Section 112
  - It reinforces examination practice with respect to claim interpretation and does not alter any guidance provided in the MPEP
  - The Federal Register Notice announcing this initiative provides a refresher on these topics, in order to enhance the quality of examination
- **Training on Section 112 is planned as part of this initiative**

Section 101 initiative: revised guidance

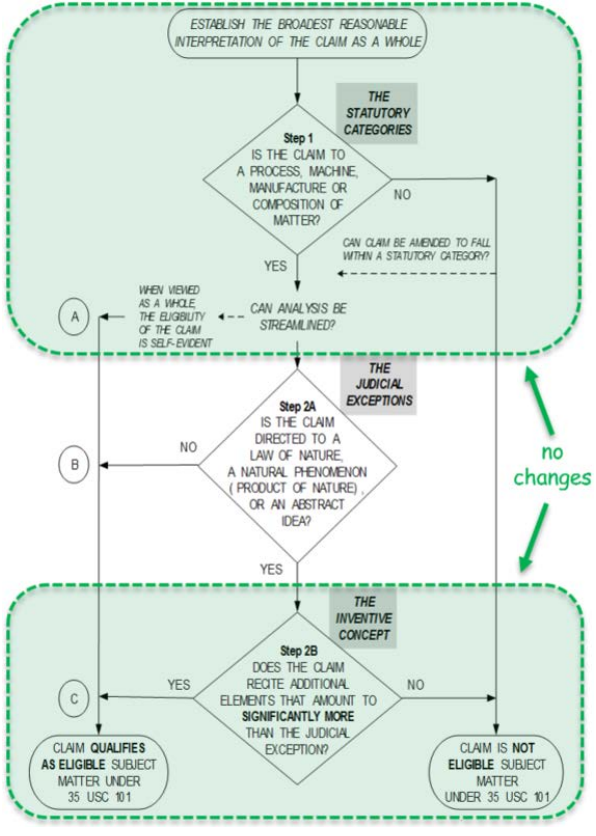
- **The 2019 Revised Patent Subject Matter Eligibility Guidance (hereinafter "2019 PEG") published in January 2019.**
- **The guidance was revised for several reasons:**
  - Increase clarity, predictability and consistency in how Section 101 is applied during examination.
  - Enable examiners to more readily determine if a claim does (or does not) recite an abstract idea.

2019 PEG

Overview of 2019 PEG

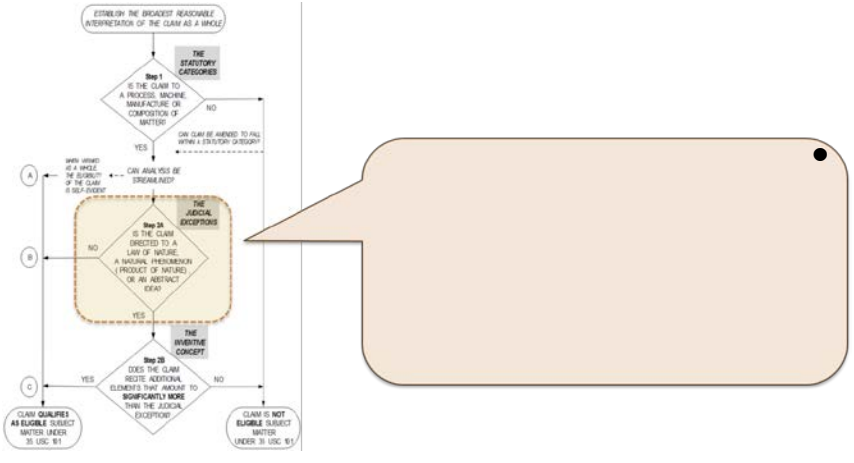
- **Makes two changes in Step 2A:**
  - Sets forth new procedure for Step 2A (called "**revised Step 2A**") under which a claim is not "directed to" a judicial exception unless the claim satisfies a two-prong inquiry; and
  - For abstract ideas, **replaces the "Eligibility Quick Reference Sheet Identifying Abstract Ideas" with an identification of particular groupings of abstract ideas**

What remains the same



- **No changes to:**
  - Step 1 (statutory categories)
  - Streamlined analysis
  - Step 2B

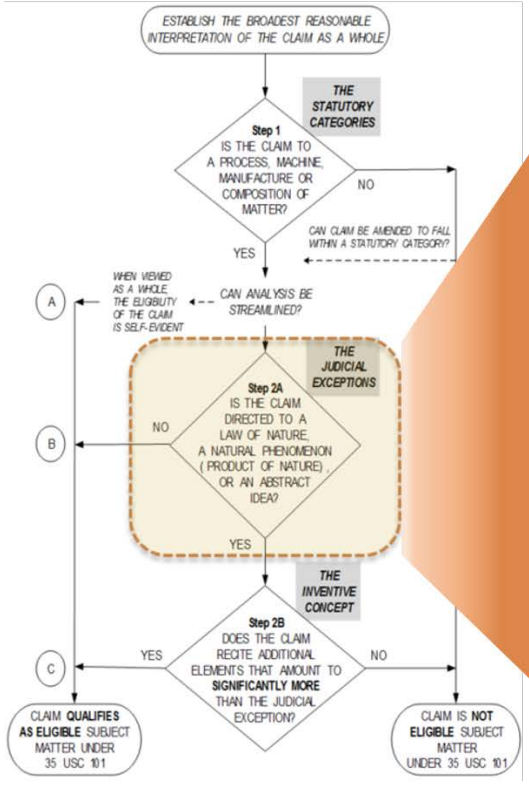
What has changed: revised step 2A



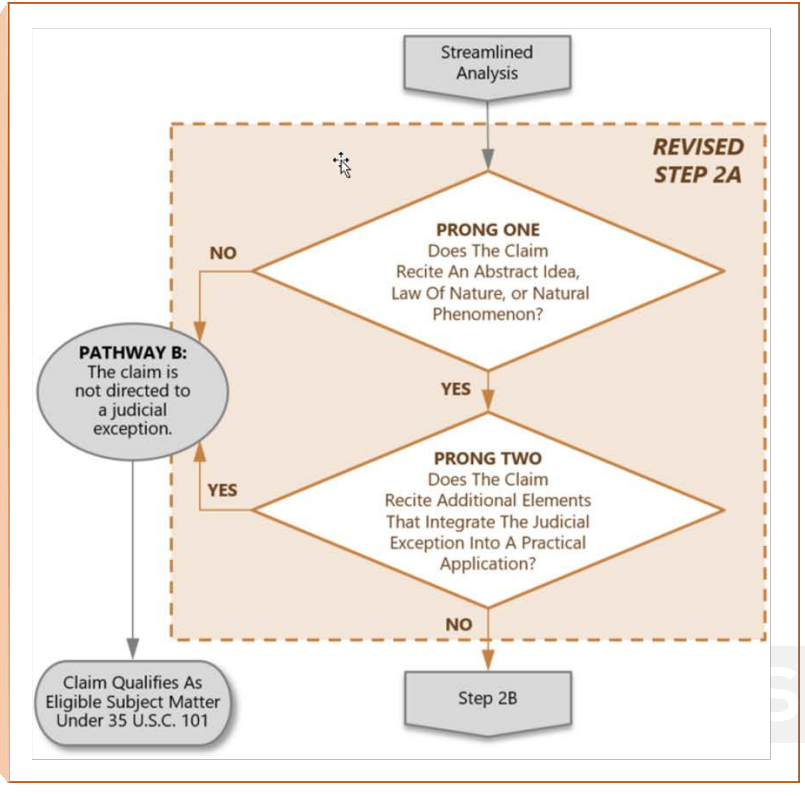
- **2019 PEG revises Step 2A:**
  - Creates new two-prong inquiry for determining whether a claim is "directed to" an exception.
  - Groups abstract ideas.

MPEP flowchart including revised step 2A

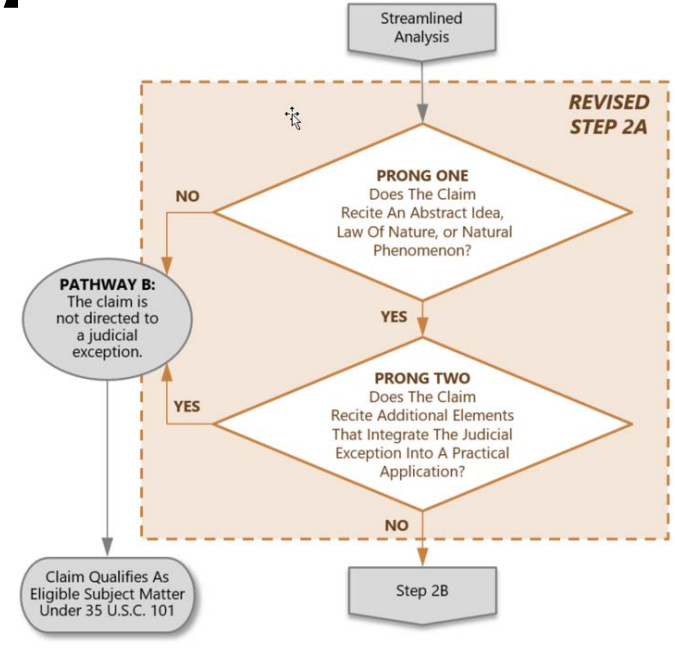
MPEP Flowchart



Revised Step 2A Flowchart



What has changed: revised step 2A



- This flowchart depicts revised Step 2A.
- Under this new two-prong inquiry, a claim is now eligible at revised Step 2A unless it:
  - Recites a judicial exception and
  - The exception is not integrated into a practical application of the exception.

Revised step 2A is a two-prong inquiry

- **Prong One: evaluate whether the claim recites a judicial exception (an abstract idea enumerated in the 2019 PEG, a law of nature, or a natural phenomenon).**
  - If no exception is recited, the claim is **eligible**. This concludes the eligibility analysis.
  - If claim recites an exception, go to Prong Two.
- **Prong Two: evaluate whether the claim recites additional elements that integrate the exception into a practical application of the exception.**
  - If the recited exception is integrated into a practical application, then the claim is **eligible**. This concludes the eligibility analysis.
  - If the exception is not integrated into a practical application, then the claim is "directed to" the exception. Go to Step 2B for further analysis.

Prong one: overview

- Prong One vs. Prior Guidance
  - For **laws of nature and natural phenomena**, Prong One does not represent a change from prior guidance
    - Continue to use the "recite" standard set forth in MPEP 2106.04(b) and (c), including the markedly different characteristics analysis, to determine if a claim recites a law of nature or natural phenomenon
    - If the claim recites a law of nature or natural phenomenon (including a product of nature), the analysis proceeds to Prong Two
  - For **abstract ideas**, Prong One represents a change from prior guidance
    - Now use groupings of abstract ideas
    - **No longer use the "Eligibility Quick Reference Sheet Identifying Abstract Ideas" when determining whether a claim recites an abstract idea**

Prong One: abstract ideas

- Prong One procedure for determining whether a claim "recites" an abstract idea is:
  - identify the specific limitation(s) in the claim under examination that the examiner believes recites an abstract idea; and
  - determine whether the identified limitation(s) falls within at least one of the groupings of abstract ideas enumerated in the 2019 PEG.
- If the identified limitation(s) falls within any of the groupings of abstract ideas enumerated in the 2019 PEG, the analysis should proceed to Prong Two.
- Claim limitations that do not fall within the enumerated groupings should not be treated as abstract ideas except in rare circumstances (see slide 38 for more information).

Groupings of abstract edeas

Mathematical concepts

- mathematical relationships
- mathematical formulas or equations
- mathematical calculations

Mental processes

- concepts performed in the human mind (including an observation, evaluation, judgment, opinion)

NOTE: The recitation of generic computer components in a claim does not necessarily preclude that claim from reciting an abstract idea.

Certain methods of organizing human activity

- fundamental economic principles or practices (including hedging, insurance, mitigating risk)
- commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations)
- managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions)

Revised step 2A: Prong Two

- **New procedure not found in prior guidance:**
  - Identifying whether there are any additional elements recited in the claim beyond the judicial exception(s), and
  - Evaluating those additional elements to determine whether they integrate the exception into a practical application of the exception.
- **"Integration into a practical application"**
  - Requires an additional element or a combination of additional elements in the claim to 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 exception.
  - Uses the considerations laid out by the Supreme Court and the Federal Circuit to evaluate whether the judicial exception is integrated into a practical application.

Prong Two considerations: introduction

- **Most of these considerations should be familiar to you.**
  - As noted in the following slides, most of the considerations are discussed in MPEP 2106.05 and sub-sections 2106.05(a) through 2106.05(h) with respect to Step 2B.
  - Unless otherwise specified in the 2019 PEG, you should evaluate these considerations in Step 2A Prong Two the same way you have been evaluating them in Step 2B.
- **The 2019 PEG modifies the considerations in two ways:**
  - The improvements consideration is evaluated **differently** in Step 2A Prong Two than in the streamlined analysis or Step 2B.
  - Adds a **new** consideration based on case law including *Vanda*, for evaluation of particular treatment or prophylaxis limitations.

Prong Two considerations: details

Limitations that are indicative of integration into a practical application:

- Improvements to the functioning of a computer, or to any other technology or technical field - see MPEP 2106.05(a)
- Applying or using a judicial exception to effect a particular treatment or prophylaxis for a disease or medical condition – see *Vanda* Memo
- Applying the judicial exception with, or by use of, a particular machine - see MPEP 2106.05(b)
- Effecting a transformation or reduction of a particular article to a different state or thing - see MPEP 2106.05(c)
- Applying or using the judicial exception in some other meaningful way beyond generally linking the use of the judicial exception to a particular technological environment, such that the claim as a whole is more than a drafting effort designed to monopolize the exception - see MPEP 2106.05(e) and *Vanda* Memo

Limitations that are not indicative of integration into a practical application:

- Adding the words "apply it" (or an equivalent) with the judicial exception, or mere instructions to implement an abstract idea on a computer, or merely uses a computer as a tool to perform an abstract idea - see MPEP 2106.05(f)
- Adding insignificant extra-solution activity to the judicial exception - see MPEP 2106.05(g)
- Generally linking the use of the judicial exception to a particular technological environment or field of use – see MPEP 2106.05(h)

Whether claim elements represent only well-understood, routine, conventional activity is considered at Step 2B and is not a consideration at Step 2A.

Prong Two excludes the "WURC" consideration

- As noted on the preceding slide, there is no evaluation of well-understood, routine, conventional ("WURC") activity in Prong Two.
- Examiners should give weight to all of the claimed additional elements in Prong Two, even if those elements represent well-understood, routine, conventional (WURC) activity.
  - Because Step 2A **excludes** consideration of WURC, a claim that includes WURC elements may still integrate an exception into a practical application.
  - Do not evaluate WURC unless the analysis proceeds to Step 2B.

The "improvements" consideration

- In determining whether a claim integrates a judicial exception into a practical application, examiners should consider whether the claimed invention pertains to an improvement in
  - the functioning of the computer itself **or**
  - any other technology or technical field
- This has also been referred to as a technological solution to a technological problem.
- In making this determination, examiners should determine whether
  - There is a technical explanation as to how to implement the invention in the specification; **and**
  - The claim itself reflects the improvement in technology.

Changes to improvements evaluation in step 2A

- **The 2019 PEG changes the improvements analysis at Step 2A, by excluding all consideration of whether claim limitations are well-understood, routine, conventional activity. Thus, in Step 2A, you should:**
  - Focus your evaluation of the improvements consideration on whether the claim pertains to an improvement to technology without reference to what is well-understood, routine, conventional activity.
  - Follow the guidance on improvements in MPEP 2106.04(a) and 2106.05(a) insofar as those sections of the MPEP do not contradict the 2019 PEG.
- **The 2019 PEG does not change the streamlined analysis or Step 2B:**
  - In the streamlined analysis and Step 2B, continue following the guidance on improvements in MPEP 2106.05(a).
  - Specifically, in these steps of the analysis, you should continue to evaluate whether a claim pertains to an improvement to conventional functioning of a computer, or to conventional technology or technological processes.

Improvements: specification

- **The specification must provide sufficient details such that one of ordinary skill in the art would recognize the claimed invention as pertaining to an improvement in technology.**
  - For example, the specification could identify a technical problem and explain how the specification provides a technical solution

McRO v. Bandai

The court relied on the specification's explanation of how the particular rules recited in the claim enabled the automation of specific animation tasks that previously could only be performed subjectively by humans, when determining that the claims were directed to improvements in computer animation instead of an abstract idea.

Affinity Labs v. DirecTV

The court relied on the specification's failure to provide details regarding the manner in which the invention accomplished the alleged improvement when holding the claimed methods of delivering broadcast content to cellphones ineligible.

Improvements: claim

- **After the examiner has consulted the specification and determined the disclosed invention pertains to an improvement in technology, the claim must be evaluated to ensure the claim itself reflects the improvement in technology.**
  - An important consideration is whether the claim covers a particular solution to a problem or a particular way to achieve a desired outcome, as opposed to merely claiming the idea of a solution or outcome.

Enfish v. Microsoft

In concluding the claims were not directed to an abstract idea, the court found the claims to improve computer functionality because the claim recited a specific data structure which is described in the specification as improving the way computers store and retrieve data from memory.

Intellectual Ventures v. Symantec

Patent owner argued that the claimed email filtering system improved technology by shrinking the protection gap and mooting the volume problem, but the court disagreed because the claims themselves did not have any limitations that addressed these issues.

The new "treatment/prophylaxis" consideration

- **A claim limitation can integrate a judicial exception by applying or using the judicial exception(s) to effect a particular treatment or prophylaxis for a disease or medical condition.**
  - Although this is an important consideration for claims reciting laws of nature or natural phenomena, it is not the only relevant consideration for such claims.
- **This consideration originated as part of the "Other Meaningful Limitations" consideration discussed in MPEP 2106.05(e) with respect to Step 2B.**
  - Moved into Step 2A after the *Vanda* decision in April 2018, but was limited to treatment steps that applied laws of nature.
  - 2019 PEG expands this consideration to encompass treatment and prophylaxis limitations, and to cover limitations that apply any type of judicial exception (not just laws of nature).

Treatment/prophylaxis: how to evaluate

- Examples of "treatment" and "prophylaxis" limitations include (but are not limited to) administration of medication, surgery, radiation therapy, phototherapy, physiotherapy, acupuncture, and the like.
- When evaluating this consideration, the following factors are relevant.
  - The particularity or generality of the treatment or prophylaxis limitation(s);
  - Whether the limitation(s) have more than a nominal or insignificant relationship to the exception(s); and
  - Whether the limitation(s) are merely extra-solution activity or a field of use.

Treatment/prophylaxis: particularity

- **The treatment or prophylaxis limitation must be "particular", i.e., specifically identified so that it does not encompass all applications of the judicial exception(s).**

Particular Treatment

The claim recites mentally analyzing information to identify if a patient has a genotype associated with poor metabolism of beta blocker medications. This is a mental step-type abstract idea. The claim also recites "administering a lower than normal dosage of a beta blocker medication to a patient identified as having the poor metabolizer genotype". This administration step is particular, and integrates the mental analysis step into a practical application.

Not Particular

The claim recites the same mental step as the claim at the left. The claim also recites "administering a suitable medication to a patient". This administration step is not particular, and is instead merely instructions to "apply" the exception in a generic way. Thus, the administration step does not integrate the mental analysis step into a practical application.

Treatment/prophylaxis: relationship to exception

- **The treatment or prophylaxis limitation must have more than a nominal or insignificant relationship to the exception(s).**

Applies The Exception

The claim recites a natural correlation (law of nature) between blood glucose levels over 250 mg/dl and the risk of developing ketoacidosis (a life-threatening medical condition). The claim also recites "treating a patient having a blood glucose level over 250 mg/dl with insulin." This administration step is particular, and integrates the law of nature into a practical application.

Does Not Apply The Exception

The claim recites the same law of nature as the claim at the left. The claim also recites "testing a blood sample from a patient to determine if the patient's blood glucose level is over 250 mg/dl." This testing step does not apply the exception. While it is nominally related to the law of nature, the testing does not apply or use the exception in any way. Thus, this testing step does not integrate the law of nature into a practical application.

Treatment/prophylaxis: extra-solution activity

- **The treatment or prophylaxis limitation must impose meaningful limits on the judicial exception, and cannot be extra-solution activity or a field-of-use.**

Does Not Apply The Exception

The claim recites (a) administering rabies and feline leukemia vaccines to a first group of domestic cats in accordance with different vaccination schedules, and (b) analyzing information about the vaccination schedules and whether the cats later developed chronic immune-mediated disorders to determine a lowest-risk vaccination schedule. Step (b) is a mental step-type abstract idea. While step (a) administers vaccines to the cats, this administration is performed in order to gather data for the mental analysis step, and is a necessary precursor for all uses of the recited exception. It is thus extra-solution activity, and does not integrate the judicial exception into a practical application.

Applies The Exception

The claim recites the same steps (a) and (b) as the claim at the left. The claim also recites step (c) "vaccinating a second group of domestic cats in accordance with the lowest-risk vaccination schedule." Step (c) applies the exception, in that the information from the mental analysis in step (b) is used to alter the order and timing of the vaccinations so that the second group of cats have a lower risk of developing chronic immune-mediated disorders. Step (c) thus integrates the abstract idea into a practical application.

The "particular machine" consideration

- **A claim limitation can integrate a judicial exception by implementing a judicial exception with, or using a judicial exception in conjunction with, a particular machine or manufacture that is integral to the claim.**
- **This consideration is discussed in MPEP 2106.05(b).**

Integrates The Exception

The claim recites a relationship between a person's forehead temperature and their core body temperature. The recited relationship is a law of nature.

The claim also recites a body temperature detector comprising a radiation detector and electronics, which determines a person's core temperature by detecting the temperature of the person's forehead in a particular way (taking multiple readings per second from the skin above the superficial temporal artery) and then uses this information to output an accurate approximation of the person's core temperature based on the natural relationship between forehead and core body temperatures.

This claim integrates the law of nature into a specific manufacture (the body temperature detector) that enables quick and accurate detection of core temperature, and thus the law of nature is practically applied.

The "particular transformation" consideration

- A claim limitation can integrate a judicial exception by effecting a transformation or reduction of a particular article to a different state or thing.
- This consideration is discussed in MPEP 2106.05(c).

Integrates The Exception

The claim recites a natural principle that describes how the elements of neutral fat require that they be severally united with an atomic equivalent of water in order to separate from each other and become free. The recited principle is a law of nature.

The claim also recites steps of mixing and heating a mixture of fat and water to a high degree of heat including recitation of parameters relating to the level of heat, the quantities of fat and water, and the strength of the mixing vessel. The recited process changes the fat and water into free fatty acids and glycerol.

This claim integrates the law of nature into a process that transforms the fat and water into a different thing (free fatty acids and glycerol), and thus the law of nature is practically applied.

The "other meaningful limitations" consideration

- A claim limitation can integrate a judicial exception by applying or using the judicial exception in some other meaningful way beyond generally linking the use of the judicial exception to a particular technological environment, such that the claim as a whole is more than a drafting effort designed to monopolize the exception.
- This consideration is discussed in MPEP 2106.05(e).

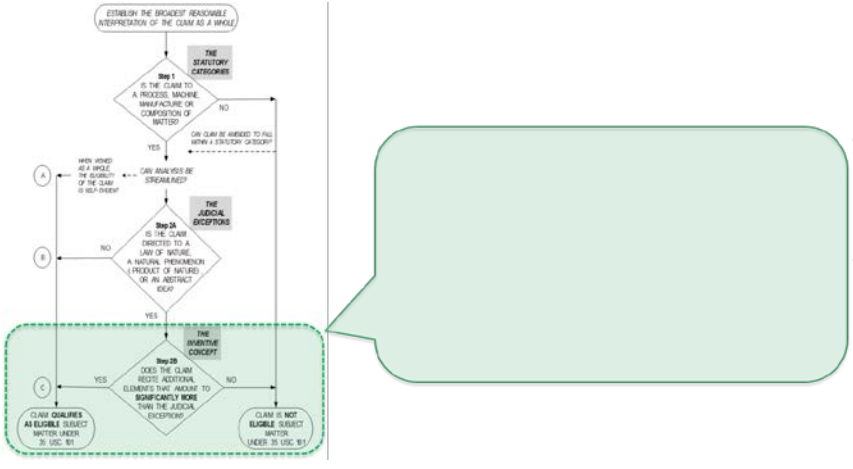
Integrates The Exception

The claim recites a natural relationship between rubber cure time and various reaction parameters such as temperature and mold size. The recited principle is a law of nature.

The claim also recites steps including installing raw rubber in a press, closing the mold, constantly measuring the temperature in the mold, and automatically opening the press at the proper time.

This claim integrates the law of nature, because the recited process steps meaningfully limit the use of the law of nature to a practical application of molding rubber products.

What remains the same: step 2B



- **Still analyze inventive concept (aka "significantly more") in 2B**
- **Even if claim ends up in Step 2B, it may still be eligible**
  - E.g., claim recites an element or combination of elements that is unconventional

Still analyze for inventive concept In step 2B

- In Step 2B, evaluate whether the claim recites additional elements that amount to an inventive concept (aka "significantly more") than the recited judicial exception.
  - If the claim as a whole amounts to significantly more than the exception itself (there is an inventive concept in the claim), the claim is **eligible**.
  - If the claim as a whole does not amount to significantly more (there is no inventive concept in the claim), the claim is **ineligible**.
- Same procedure as in prior guidance:
  - Identifying whether there are any additional elements recited in the claim beyond the judicial exception(s), and
  - Evaluating those additional elements individually and in combination to determine whether they amount to significantly more, using the considerations discussed on the following slides.

Eligibility at step 2B

- **Revised Step 2A overlaps with Step 2B, and thus, many of the considerations need not be reevaluated in Step 2B because the answer will be the same**
- **However, if an examiner had previously concluded under revised Step 2A that an additional element was insignificant extra-solution activity, they should reevaluate that conclusion in Step 2B**
  - If such reevaluation indicates that the element is unconventional or otherwise more than what is well-understood, routine, conventional activity in the field, this finding may indicate that an inventive concept is present and that the claim is thus eligible.
  - For example, when evaluating a claim reciting an abstract idea such as a mathematical equation and a series of data gathering steps that collect a necessary input for the equation, an examiner might consider the data gathering steps to be insignificant extra-solution activity in revised Step 2A, and therefore find that the judicial exception is not integrated into a practical application. However, when the examiner reconsiders the data gathering steps in Step 2B, the examiner could determine that the combination of steps gather data in an unconventional way and, therefore, provide an "inventive concept," rendering the claim eligible at Step 2B.

Step 2B considerations overlap with step 2A

Limitations that are indicative of an inventive concept (aka "significantly more"):

- Improvements to the functioning of a computer, or to any other technology or technical field - see MPEP 2106.05(a)
- Applying the judicial exception with, or by use of, a particular machine - see MPEP 2106.05(b)
- Effecting a transformation or reduction of a particular article to a different state or thing - see MPEP 2106.05(c)
- Applying or using the judicial exception in some other meaningful way beyond generally linking the use of the judicial exception to a particular technological environment, such that the claim as a whole is more than a drafting effort designed to monopolize the exception - see MPEP 2106.05(e) and *Vanda* Memo
- Adding a specific limitation other than what is well-understood, routine, conventional activity in the field - see MPEP 2106.05(d)

Limitations that are not indicative of an inventive concept (aka "significantly more"):

- Adding the words "apply it" (or an equivalent) with the judicial exception, or mere instructions to implement an abstract idea on a computer, or merely uses a computer as a tool to perform an abstract idea - see MPEP 2106.05(f)
- Adding insignificant extra-solution activity to the judicial exception - see MPEP 2106.05(g)
- Generally linking the use of the judicial exception to a particular technological environment or field of use – see MPEP 2106.05(h)
- Simply appending well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception - see MPEP 2106.05(d) and Berkheimer Memo

Procedure for tentative abstract ideas

- **There may be rare circumstances in which an examiner believes a claim limitation should be treated as an abstract idea ("tentative abstract idea") even though it does not fall within the enumerated groupings of abstract ideas**
- **In such circumstances, the examiner should evaluate the claim under the 2019 PEG:**
  - If the claim as a whole integrates the tentative abstract idea into a practical application, the claim is **eligible**. This concludes the eligibility analysis. Otherwise, proceed to Step 2B.
  - In Step 2B, if the claim as a whole provides an inventive concept, the claim is eligible. This concludes the eligibility analysis. Otherwise, the examiner should bring the application to the attention of the Technology Center Director.
  - A rejection of a claim reciting a tentative abstract idea must be approved by the Technology Center Director (which approval will be indicated in the file record of the application), and must provide a justification for why such claim limitation is being treated as reciting an abstract idea.

Reminders & takeaways

- Treat the claim as a whole – consider all of the recited limitations when determining eligibility
- No longer use the "Eligibility Quick Reference Sheet Identifying Abstract Ideas" when determining whether a claim recites an abstract idea
- Whether claim elements represent only well-understood, routine, conventional activity is considered at Step 2B and is not a consideration at Step 2A
- The key inquiry in revised Step 2A is whether a claim that recites a judicial exception is directed to the judicial exception itself, or is instead directed to a practical application of the judicial exception
- Practice compact prosecution – this includes addressing all statutory requirements (not just eligibility), and pointing applicants to eligible subject matter in the specification when possible

101-Related resources

Impact

- **The 2019 PEG supersedes:**
  - MPEP 2106.04(II) (Eligibility Step 2A: Whether a Claim Is Directed to a Judicial Exception)
  - All versions of the "Eligibility Quick Reference Sheet Identifying Abstract Ideas"
- **A chart of affected MPEP sections will be posted on the microsite.**

Examples

- **The Office has issued numerous examples showing how to apply its eligibility guidance to analyze various fact patterns.**
  - New examples 37-42 present hypothetical claims that are analyzed under the 2019 PEG. These examples address abstract ideas, computer-related inventions, and software.
  - Existing examples 1-36 were issued prior to the 2019 PEG, and some of them present analyses that may not be entirely consistent with the 2019 PEG. Thus, although all the claims indicated as eligible in prior examples 1-36 are still eligible today, you should use these examples with caution.

Examples unaffected by the 2019 PEG

Abstract idea/life sciences examples

- Removing malicious code
- Composite web page
- Digital image processing
- GUI for relocating obscured text (claim 1)
- Julitis (claims 1 and 7)
- Screening for gene alterations (claims 1, 75 & 85)
- Filtering internet content

Streamlined analysis examples

- Hip prosthesis
- Robotic arm assembly
- Internal combustion engine
- System software - BIOS
- Paper-making machine
- Hydrolysis of fat

Product of nature examples

- Gunpowder & fireworks
- Pomelo juice
- Amazonic acid
- Purified proteins
- Genetically modified bacterium
- Bacterial mixtures
- Nucleic acids
- Antibodies
- Cells
- Food
- Vaccines (claims 1, 2, and 4-6)
- Dietary sweeteners (claims 1 and 3-6)

Examples that are affected by the 2019 PEG

Examples with claims that are now eligible at step 2A Prong Two

- Digital image processing
- Global positioning system
- Stock quote data (claim 2)
- GUI for relocating obscured text (claim 4)
- Rubber manufacturing
- Julitis (claims 5 & 6)

Examples where result is unchanged, but that would require analysis under step 2A Prong Two

- Game of Bingo
- Transaction performance guaranty
- Distribution of products over the internet
- Stock quote data (claim 1)
- GUI for meal planning
- GUI for relocating obscured text (claims 2 & 3)
- Updating alarm limits
- Vaccines (claims 3 and 7)
- Julitis (claims 2-4)
- Dietary sweeteners (claim 2)
- Screening for gene alterations (claims 70 & 80)
- Verifying a bank customer's identity to permit an ATM transaction
- Tracking inventory

New form paragraphs

- The 2019 PEG affects some of the eligibility-related form paragraphs
  - Form paragraph 7.05.015 is superseded, and replaced with new form paragraphs 7.05.016 and 7.05.017.
- For "Step 2B" rejections (claim is directed to a judicial exception without providing an inventive concept/significantly more), use existing form paragraphs 7.04.01, 7.05 and the following new form paragraph(s):
  - If the recited judicial exception is an **abstract idea enumerated in the 2019 PEG, a law of nature, or a natural phenomenon**, use new form paragraph 7.05.016; or
  - If the recited judicial exception is an **abstract idea that is not enumerated in the 2019 PEG**, use new form paragraph 7.05.016 and new form paragraph 7.05.017 because TC Director approval is required.

Section 101 form paragraphs

Form Paragraph	Status
7.04.01 Statement of Statutory Basis, 35 U.S.C. 101	Unchanged (except for cross-references to other FP in the examiner notes)
7.05 Rejection, 35 U.S.C. 101, -Heading Only-	
7.05.01 Rejection, 35 U.S.C. 101, Nonstatutory (Not One of the Four Statutory Categories)	
7.05.015 Rejection, 35 U.S.C. 101, Nonstatutory (Directed to a Judicial Exception without Significantly More)	**Deleted** (use 7.05.016 instead)
7.05.016 Rejection, 35 U.S.C. 101, Nonstatutory (Directed to a Judicial Exception without an Inventive Concept/Significantly More)	**New**
7.05.017 Rejection, 35 U.S.C. 101, TC Director Approval for Non-Enumerated Abstract Idea	**New**

Applications in process

- **If applicant argues in response to an Office action that the claims are eligible—**
  - Examiners should re-evaluate the eligibility of each claim previously rejected under 35 U.S.C. 101 in accordance with the 2019 PEG
  - If the claim is now eligible, the rejection under 35 U.S.C. 101 should be withdrawn
    - If the claim is still ineligible, examiners should:
      - update the form paragraph(s) used; and
      - ensure that the explanation of the rejection under 35 U.S.C. 101 addresses why the claim recites a judicial exception, fails to integrate the judicial exception into a practical application, and fails to provide an inventive concept
  - Examiners should also consider the patentability of each claim under 35 U.S.C. 102 (novelty), 103 (nonobviousness), and 112 (enablement, written description, definiteness)
- **The Frequently-Asked-Questions document posted on the microsite provides additional guidance on how to handle applications in process, including when a rejection may be made final when updating or maintaining a rejection.**

Resources

- **Office guidance on subject matter eligibility**
  - MPEP 2106 *et seq*. [except MPEP 2106.04(II), which has been superseded]
  - *Berkheimer* Memo issued on April 20, 2018
  - 2019 PEG
- **Other materials**
  - New Form Paragraphs
  - Chart of affected MPEP sections
  - Sample rejection under the 2019 PEG

New examples illustrating application of the 2019 PEG

Overview of example discussion

- **This training will guide you through the analysis of several examples, based on the technology in which you work.**
  - You will discuss at least one example from Group One, and at least one example from Group Two.
  - The example Groups are shown on the following slide.
- **The full slide deck with all of the examples is available on the microsite and will be posted publically as well, so you can refer to the other examples later if you choose.**
- **These examples focus on abstract idea exceptions, but the 2019 PEG also applies to laws of nature and natural phenomena.**

Examples for discussion

Group one examples:

- Example 37: Relocation of Icons on a Graphical User Interface
- Example 40: Adaptive Monitoring of Network Traffic Data

Conclusion Slides

Group two examples:

- Example 38: Simulating an Analog Audio Mixer
- Example 39: Method for Training a Neural Network for Facial Detection
- Example 41: Cryptographic Communications
- Example 42: Method for Transmission of Notifications When Medical Records Are Updated

Note that the examples herein are numbered consecutively beginning with number 37, because 36 examples were previously issued.

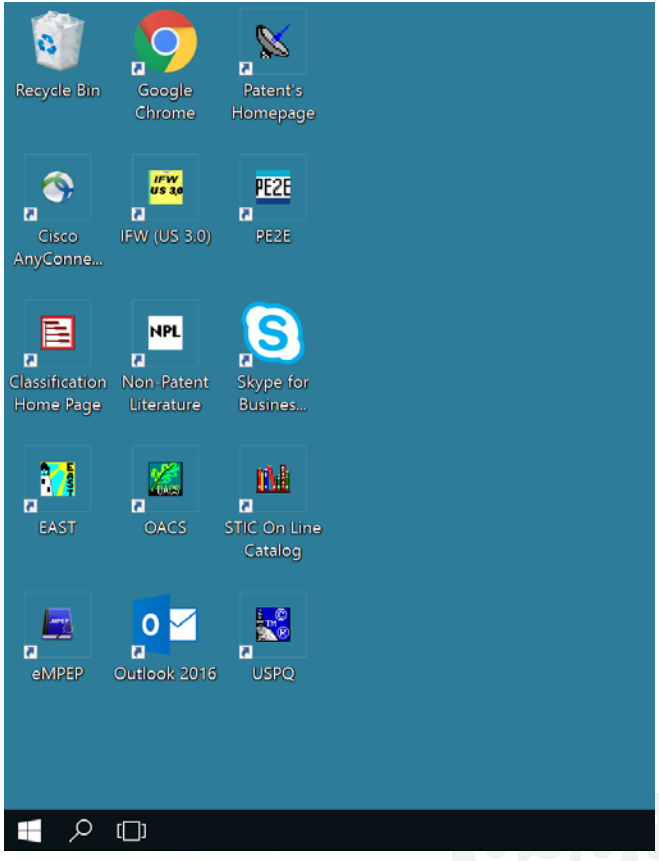
Reliance on examples

- **New examples 37-42 present hypothetical claims that are analyzed under the 2019 PEG.**
  - These examples should be interpreted based on the fact patterns set forth below as other fact patterns may have different eligibility outcomes.
  - It is **not** necessary for a claim under examination to mirror an example claim to be subject matter eligible under the 2019 PEG.
- **Note that the examples are illustrative only of the patent-eligibility analysis. During examination you should continue to practice compact prosecution and analyze every claim for compliance with all requirements for patentability.**
- **Although all the claims indicated as eligible in prior examples 1-36 are still eligible today, those prior examples present analyses that may not be entirely consistent with the 2019 PEG and so should be used with caution.**

Example 37: relocation of icons on a graphical user interface

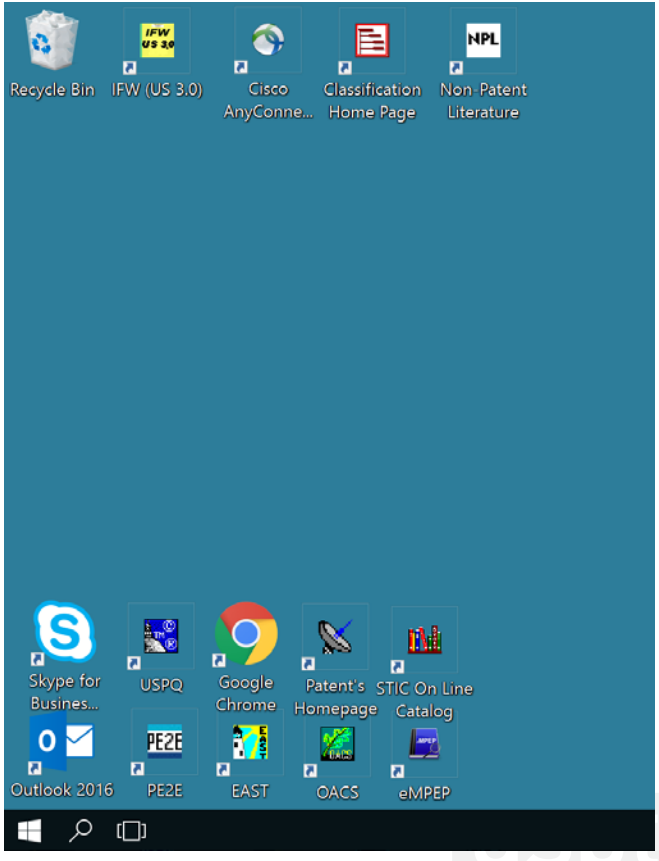
User interface: background

- Traditionally, computer users are limited in the ways in which they can organize icons on their display.
  - Alphabetically
  - By file size
  - By file type



User interface: background (cont.)

- **If a computer user wants a non-typical arrangement of icons, the user would need to manually manipulate the icons on their display.**
  - For example, a user may prefer to organize icons so that the most used icons are located near the "start" or "home" icon, where they can be easily accessed.



User interface: what did applicant invent?

- **Applicant's specification explains that a method has been provided for rearranging icons on a graphical user interface (GUI), wherein the method automatically moves the most used icons to a position on the GUI closest to the "start" icon of the computer system, based on a determined amount of use.**

- **The amount of use of each icon is determined either:**
  - automatically by a processor that tracks the number of times each icon is selected over a period of time (*e.g.*, day, week, month, etc.);
  - automatically by a processor that tracks how much memory has been allocated to the individual processes associated with each icon over a period of time (*e.g.*, day, week, month, etc.); or
  - manually entered by a user using any of a number of ordering and/or ranking systems known to those skilled in the art.

User interface (claim 1): what did applicant claim?

Now that we understand what applicant invented, let's look at what applicant claimed:

1. A method of rearranging icons on a graphical user interface (GUI) of a computer system, the method comprising:

receiving, via the GUI, a user selection to organize each icon based on a specific criteria, wherein the specific criteria is an amount of use of each icon;

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

automatically moving the most used icons to a position on the GUI closest to the start icon of the computer system based on the determined amount of use.

User interface (claim 1): claim + step 1

1. A method of rearranging icons on a graphical user interface (GUI) of a computer system, the method comprising:

receiving, via the GUI, a user selection to organize each icon based on a specific criteria, wherein the specific criteria is an amount of use of each icon;

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

automatically moving the most used icons to a position on the GUI closest to the start icon of the computer system based on the determined amount of use.

Evaluate step 1:
Does this claim fall within a statutory category?

User interface (claim 1): step 1

1. A method of rearranging icons on a graphical user interface (GUI) of a computer system, the method comprising:

receiving, via the GUI, a user selection to organize each icon based on a specific criteria, wherein the specific criteria is an amount of use of each icon;

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

automatically moving the most used icons to a position on the GUI closest to the start icon of the computer system based on the determined amount of use.

Step 1 = Yes.

The claim recites a series of steps and, therefore, is a process.

User interface (claim 1): step 2A Prong One

1. A method of rearranging icons on a graphical user interface (GUI) of a computer system, the method comprising:

receiving, via the GUI, a user selection to organize each icon based on a specific criteria, wherein the specific criteria is an amount of use of each icon;

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

automatically moving the most used icons to a position on the GUI closest to the start icon of the computer system based on the determined amount of use.

Evaluate step 2A Prong One:

(a) identify the specific limitation(s) in the claim that you believe recites an abstract idea; and

(b) determine whether the identified limitation(s) falls within at least one of the groupings of abstract ideas enumerated in the 2019 PEG.

User interface (claim 1): step 2A Prong One (cont.)

1. A method of rearranging icons on a graphical user interface (GUI) of a computer system, the method comprising:

receiving, via the GUI, a user selection to organize each icon based on a specific criteria, wherein the specific criteria is an amount of use of each icon;

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

automatically moving the most used icons to a position on the GUI closest to the start icon of the computer system based on the determined amount of use.

The claim recites the limitation of determining the amount of use of each icon over a predetermined period of time.

Now look at the 2019 PEG to evaluate whether this limitation falls within at least one of the groupings of abstract ideas.

Does the "determining" step fall within these groupings?

Mathematical concepts

- mathematical relationships
- mathematical formulas or equations
- mathematical calculations

Mental processes

- concepts performed in the human mind (including an observation, evaluation, judgment, opinion)

Certain methods of organizing human activity

- fundamental economic principles or practices (including hedging, insurance, mitigating risk)
- commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations)
- managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions)

User interface (claim 1): step 2A Prong One (cont.)

Mental processes

concepts performed in the human mind (including an observation, evaluation, judgment, opinion)

This determining step, as drafted, is a process that under its broadest reasonable interpretation, covers performance of the limitation in the mind but for the recitation of generic computer components.

That is, other than reciting "by a processor", nothing in the claim element precludes the step from practically being performed in the human mind.

For example, but for the "by a processor" language, the claim encompasses the user manually calculating the amount of use of each icon.

Additionally, the mere nominal recitation of a generic processor does not take the claim limitation out of the mental processes grouping.

Thus, the claim recites a mental process.

User interface (claim 1): step 2A Prong Two

1. A method of rearranging icons on a graphical user interface (GUI) of a computer system, the method comprising:

receiving, via the GUI, a user selection to organize each icon based on a specific criteria, wherein the specific criteria is an amount of use of each icon;

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

automatically moving the most used icons to a position on the GUI closest to the start icon of the computer system based on the determined amount of use.

Evaluate step 2A Prong Two:

Are there additional element(s) or a combination of elements in the claim that apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that it is more than a drafting effort designed to monopolize the exception?

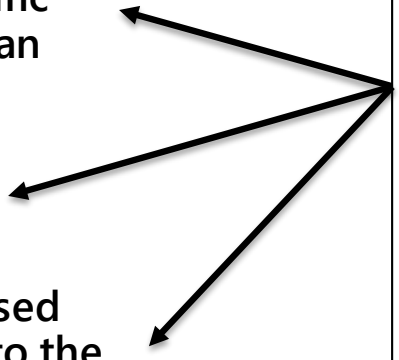
User interface (claim 1): step 2A Prong Two (cont.)

1. A method of rearranging icons on a graphical user interface (GUI) of a computer system, the method comprising:

receiving, via the GUI, a user selection to organize each icon based on a specific criteria, wherein the specific criteria is an amount of use of each icon;

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

automatically moving the most used icons to a position on the GUI closest to the start icon of the computer system based on the determined amount of use.



The claim recites the combination of additional elements of 1) receiving, via the GUI, a user selection to organize each icon based on a specific criteria, wherein the specific criteria is an amount of use of each icon; 2) using a processor to perform the determining step; and 3) automatically moving the most used icons to a position on the GUI closest to the start icon of the computer system based on the determined amount of use.

User interface (claim 1): step 2A prong two (cont.)

1. A method of rearranging icons on a graphical user interface (GUI) of a computer system, the method comprising:

receiving, via the GUI, a user selection to organize each icon based on a specific criteria, wherein the specific criteria is an amount of use of each icon;

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

automatically moving the most used icons to a position on the GUI closest to the start icon of the computer system based on the determined amount of use.

The additional elements recite a specific manner of automatically displaying icons to the user based on usage which provides a specific improvement over prior systems, resulting in an improved user interface for electronic devices.

The claim as a whole integrates the mental process into a practical application.

User interface (claim 1): step 2A Prong Two (cont.)

1. A method of rearranging icons on a graphical user interface (GUI) of a computer system, the method comprising:

receiving, via the GUI, a user selection to organize each icon based on a specific criteria, wherein the specific criteria is an amount of use of each icon;

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

automatically moving the most used icons to a position on the GUI closest to the start icon of the computer system based on the determined amount of use.

Step 2A = No.

The claim is eligible because it is not directed to an abstract idea or any other judicial exception.

User interface (claim 2): what did applicant claim?

Now let's look at a slightly different claimed method of rearranging icons on a graphical user interface (GUI) of a computer system:

2. A method of rearranging icons on a graphical user interface (GUI) of a computer system, the method comprising:

receiving, via the GUI, a user selection to organize each icon based on a specific criteria, wherein the specific criteria is an amount of use of each icon;

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; and

automatically moving the most used icons to a position on the GUI closest to the start icon of the computer system based on the determined amount of use.

User interface (claim 2): claim + step 1

2. A method of rearranging icons on a graphical user interface (GUI) of a computer system, the method comprising:

receiving, via the GUI, a user selection to organize each icon based on a specific criteria, wherein the specific criteria is an amount of use of each icon;

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; and

automatically moving the most used icons to a position on the GUI closest to the start icon of the computer system based on the determined amount of use.

Evaluate Step 1:
Does this claim fall within a statutory category?

User Interface (Claim 2): Step 1

2. A method of rearranging icons on a graphical user interface (GUI) of a computer system, the method comprising:

receiving, via the GUI, a user selection to organize each icon based on a specific criteria, wherein the specific criteria is an amount of use of each icon;

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; and

automatically moving the most used icons to a position on the GUI closest to the start icon of the computer system based on the determined amount of use.

Step 1 = Yes.

The claim recites a series of steps and, therefore, is a process.

User interface (claim 2): step 2A Prong One

2. A method of rearranging icons on a graphical user interface (GUI) of a computer system, the method comprising:

receiving, via the GUI, a user selection to organize each icon based on a specific criteria, wherein the specific criteria is an amount of use of each icon;

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; and

automatically moving the most used icons to a position on the GUI closest to the start icon of the computer system based on the determined amount of use.

Evaluate Step 2A Prong One:

(a) identify the specific limitation(s) in the claim that you believe recites an abstract idea; and

(b) determine whether the identified limitation(s) falls within at least one of the groupings of abstract ideas enumerated in the 2019 PEG.

User interface (Claim 2): step 2A Prong One (cont.)

2. A method of rearranging icons on a graphical user interface (GUI) of a computer system, the method comprising:

receiving, via the GUI, a user selection to organize each icon based on a specific criteria, wherein the specific criteria is an amount of use of each icon;

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; and

automatically moving the most used icons to a position on the GUI closest to the start icon of the computer system based on the determined amount of use.

Unlike the determining step in claim 1, the determining step in claim 2 recites "determining the amount of use of each icon that tracks how much memory has been allocated to each application associated with each icon over a predetermined period of time."

Now look at the 2019 PEG to evaluate whether this limitation falls within at least one of the groupings of abstract ideas.

Does the "determining" step fall within these groupings?

Mathematical concepts

- mathematical relationships
- mathematical formulas or equations
- mathematical calculations

Mental processes

- concepts performed in the human mind (including an observation, evaluation, judgment, opinion)

Certain methods of organizing human activity

- fundamental economic principles or practices (including hedging, insurance, mitigating risk)
- commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations)
- managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions)

User interface (claim 2): step 2A Prong One (cont.)

2. A method of rearranging icons on a graphical user interface (GUI) of a computer system, the method comprising:

receiving, via the GUI, a user selection to organize each icon based on a specific criteria, wherein the specific criteria is an amount of use of each icon;

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; and

automatically moving the most used icons to a position on the GUI closest to the start icon of the computer system based on the determined amount of use.

The claim does not recite any of the judicial exceptions enumerated in the 2019 PEG.

Specifically, the claim, under its broadest reasonable interpretation, does not cover performance in the mind but for the recitation of generic computer components. For example, the "determining step" now requires action by a processor that cannot be practically performed in the mind.

In particular, the claimed step of determining the amount of use of each icon by tracking how much memory has been allocated to each application associated with each icon over a predetermined period of time is not practically performed in the human mind, at least because it requires a processor accessing computer memory indicative of application usage.

User interface (claim 2): step 2A Prong One (cont.)

2. A method of rearranging icons on a graphical user interface (GUI) of a computer system, the method comprising:

receiving, via the GUI, a user selection to organize each icon based on a specific criteria, wherein the specific criteria is an amount of use of each icon;

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; and

automatically moving the most used icons to a position on the GUI closest to the start icon of the computer system based on the determined amount of use.

Further, the claim does not recite any method of organizing human activity, such as a fundamental economic concept or managing interactions between people.

Finally, the claim does not recite a mathematical relationship, formula, or calculation.

User interface (claim 2): step 2A Prong One (cont.)

2. A method of rearranging icons on a graphical user interface (GUI) of a computer system, the method comprising:

receiving, via the GUI, a user selection to organize each icon based on a specific criteria, wherein the specific criteria is an amount of use of each icon;

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; and

automatically moving the most used icons to a position on the GUI closest to the start icon of the computer system based on the determined amount of use.

Step 2A = No.

The claim is eligible because it is not directed to an abstract idea or any other judicial exception.

User interface (claim 3): what did applicant claim?

Now let's look at a third claim for a method of rearranging icons on a graphical user interface (GUI) of a computer system:

3. A method of ranking icons of a computer system, the method comprising:

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

ranking the icons, by the processor, based on the determined amount of use.

User interface (claim 3): claim + step 1

3. A method of ranking icons of a computer system, the method comprising:

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

ranking the icons, by the processor, based on the determined amount of use.

Evaluate Step 1:
Does this claim fall within a statutory category?

User interface (claim 3): step 1

3. A method of ranking icons of a computer system, the method comprising:

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

ranking the icons, by the processor, based on the determined amount of use.

Step 1 = Yes.

The claim recites a series of steps and, therefore, is a process.

User interface (claim 3): step 2A Prong One

3. A method of ranking icons of a computer system, the method comprising:

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

ranking the icons, by the processor, based on the determined amount of use.

Evaluate step 2A Prong One:

(a) identify the specific limitation(s) in the claim that you believe recites an abstract idea; and

(b) determine whether the identified limitation(s) falls within at least one of the groupings of abstract ideas enumerated in the 2019 PEG.

User interface (claim 3): step 2A Prong One (cont.)

3. A method of ranking icons of a computer system, the method comprising:

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

ranking the icons, by the processor, based on the determined amount of use.

The claim recites the limitations of 1) determining the amount of use of each icon over a predetermined period of time and 2) ranking the icons based on the determined amount of use.

Now look at the 2019 PEG to evaluate whether these limitations fall within at least one of the groupings of abstract ideas.

Do the claimed limitations fall within these groupings?

Mathematical concepts

- mathematical relationships
- mathematical formulas or equations
- mathematical calculations

Mental processes

- concepts performed in the human mind (including an observation, evaluation, judgment, opinion)

Certain Methods Of Organizing Human Activity

- fundamental economic principles or practices (including hedging, insurance, mitigating risk)
- commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations)
- managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions)

User interface (claim 3): step 2A Prong One (cont.)

Mental processes

concepts performed in the human mind (including an observation, evaluation, judgment, opinion)

The determining and ranking steps cover performance of the limitations in the mind but for the recitation of generic computer components.

That is, other than reciting "by a processor" or "by the processor", nothing in the claim elements precludes the steps from practically being performed in the human mind.

For example, but for the "by a processor" language, the claim encompasses the user manually calculating the amount of use of each icon. In addition, but for the "by the processor" language, the claim encompasses the user thinking that the most-used icons should be ranked higher than the least-used icons.

Additionally, the mere nominal recitation of a generic processor does not take the claim limitations out of the mental processes grouping.

Thus, the claim recites a mental process.

User interface (claim 3): step 2A Prong Two

3. A method of ranking icons of a computer system, the method comprising:

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

ranking the icons, by the processor, based on the determined amount of use.

Evaluate step 2A Prong Two:

Are there additional element(s) or a combination of elements in the claim that apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that it is more than a drafting effort designed to monopolize the exception?

User interface (claim 3): step 2A Prong Two (cont.)

3. A method of ranking icons of a computer system, the method comprising:

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

ranking the icons, by the processor, based on the determined amount of use.

The claim recites one additional element: that a processor is used to perform both the ranking and determining steps.

User interface (claim 3): step 2A prong two (cont.)

3. A method of ranking icons of a computer system, the method comprising:

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

ranking the icons, by the processor, based on the determined amount of use.

The processor in both steps is recited at a high level of generality, *i.e.*, as a generic processor performing a generic computer function of processing data (determining the amount of use of each icon, or the ranking of the icons based on the determined amount of use). This generic processor limitation is no more than mere instructions to apply the exception using a generic computer component.

Accordingly, this additional element does not integrate the abstract idea into a practical application because it does not impose any meaningful limits on practicing the abstract idea.

User interface (claim 3): step 2A Prong Two (cont.)

3. A method of ranking icons of a computer system, the method comprising:

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

ranking the icons, by the processor, based on the determined amount of use.

Step 2A = Yes.

The claim is directed to the abstract idea.

User interface (claim 3): step 2B

3. A method of ranking icons of a computer system, the method comprising:

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

ranking the icons, by the processor, based on the determined amount of use.

Evaluate Step 2B:

Does the claim provide an inventive concept, *i.e.*, does the claim recite additional element(s) or a combination of elements that amount to significantly more than the judicial exception in the claim?

User interface (claim 3): step 2B (cont.)

3. A method of ranking icons of a computer system, the method comprising:

determining, by a processor, the amount of use of each icon over a predetermined period of time; and

ranking the icons, by the processor, based on the determined amount of use.

As discussed previously with respect to Step 2A Prong Two, the additional element in the claim amounts to no more than mere instructions to apply the exception using a generic computer component.

The same analysis applies here in 2B, *i.e.*, mere instructions to apply an exception using a generic computer component cannot integrate a judicial exception into a practical application at Step 2A or provide an inventive concept in Step 2B.

Step 2B = No, the claim does not provide an inventive concept (significantly more than the abstract idea). The claim is ineligible.

Drafting a rejection

- **Because this claim (claim 3) is ineligible, it should be rejected as lacking subject matter eligibility under 35 U.S.C. 101. The rejection should:**
  - Identify the abstract idea recited in the claim, and include a reference to the appropriate enumerated grouping of abstract ideas;
  - Identify the additional elements and explain why they do not integrate the abstract idea into a practical application; and
  - Explain why the additional elements do not provide an inventive concept.
- **As discussed in this training, new form paragraphs have been created for use with the 2019 PEG.**
- **A sample rejection of this claim under the 2019 PEG is posted on the microsite.**

Back to examples

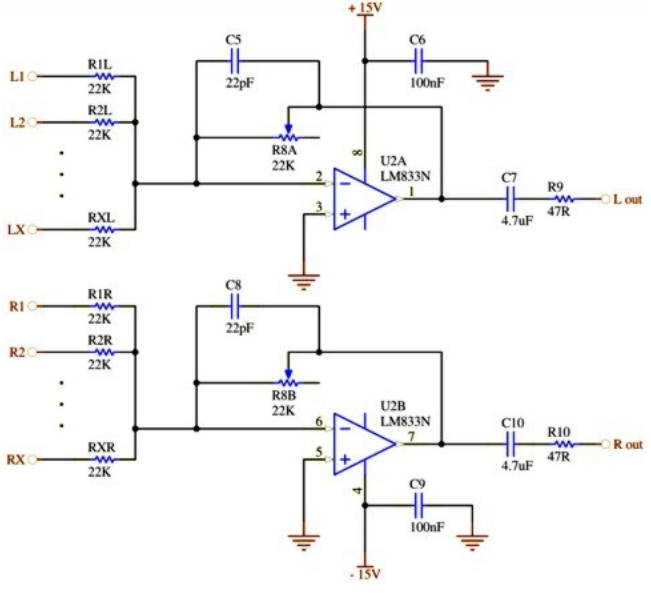
Example 38: simulating an analog audio mixer

Digital simulation: background

- Many people prefer the sound quality of music in its analog form, as digital audio files are considered to "lose" much of the sound quality in the conversion from analog to digital.
- Prior inventions attempted to create digital simulations of analog audio mixers to simulate the sounds from analog circuits.
- However, the prior art audio mixer simulations do not produce the same sound quality as the actual analog circuits.

Digital simulation: what did applicant invent?

- Applicant seeks to more closely replicate the sound quality of analog audio by accounting for the slight variances in analog circuit values that are generated during the circuit's manufacturing.
- The method begins with a model of an analog circuit representing an audio mixing console including an initial value, location, and manufacturing tolerance range of each circuit element.
- A randomized working value of each circuit element is determined using a normally distributed pseudo random number generator (PRNG) based on the initial value and manufacturing tolerance range.



Digital simulation: what did applicant invent? (cont.)

- The circuit is then simulated with the randomized working values using a bilinear transformation to create a digital representation of the analog circuit.
- The digital representation is then presented to the user through a graphical user interface as an operational digital audio mixer.

Digital simulation: what did applicant claim?

Now that we understand what applicant invented, let's look at what applicant claimed:

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.

Digital simulation: claim + step 1

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.

Evaluate Step 1:
Does this claim fall within a statutory category?

Digital simulation: step 1

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.

Step 1 = Yes.

The claim recites a series of steps, and thus, the claim is to a process.

Digital simulation: step 2A Prong One

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.

Evaluate Step 2A Prong One:

(a) identify the specific limitation(s) in the claim that you believe recites an abstract idea; and

(b) determine whether the identified limitation(s) falls within at least one of the groupings of abstract ideas enumerated in the 2019 PEG

Digital simulation: step 2A Prong One (cont.)

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.

The claim recites the limitations of initializing a model, generating a random value, and simulating a digital representation of the analog circuit.

Now look at the 2019 PEG to evaluate whether these limitations falls within at least one of the groupings of abstract ideas.

Do the claimed limitations fall within these groupings?

Mathematical concepts

- mathematical relationships
- mathematical formulas or equations
- mathematical calculations

Mental processes

- concepts performed in the human mind (including an observation, evaluation, judgment, opinion)

Certain methods of organizing human activity

- fundamental economic principles or practices (including hedging, insurance, mitigating risk)
- commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations)
- managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions)

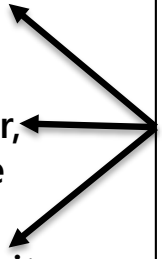
Digital simulation: step 2A Prong One (cont.)

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.



Evaluate step 2A Prong One:

The claim includes several limitations that may be based upon mathematical relationships, formulas, or calculations.

However, the mathematical relationships, formulas, or calculations are not explicitly recited in the claim.

Therefore, the claim does not recite a mathematical concept.

Digital simulation: step 2A Prong One (cont.)

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.

Evaluate step 2A Prong One:

The claim does not recite a mental process because the steps, as claimed, are not practically performed in the human mind.

The claim does not recite any method of organizing human activity such as a fundamental economic concept or managing interactions between people.

Digital simulation: step 2A Prong One (cont.)

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.

Step 2A = No

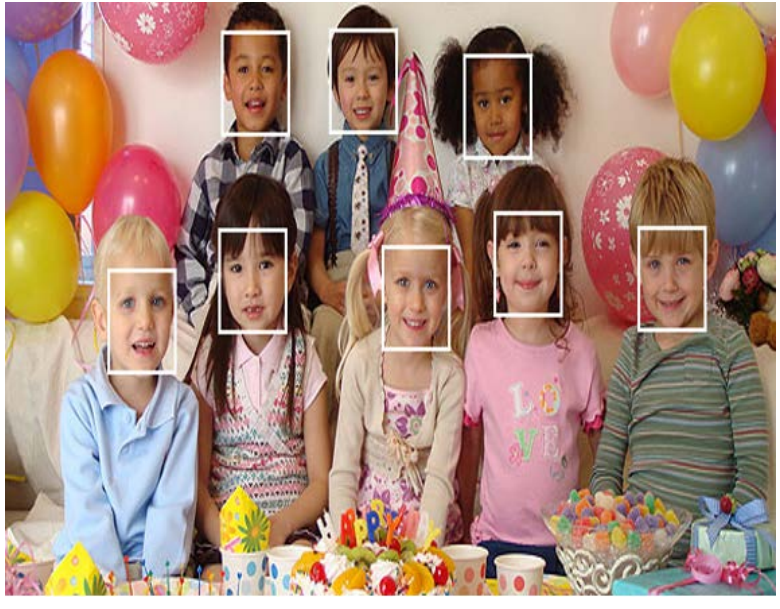
Since the claim does not recite an abstract idea or any other judicial exception, the claim is eligible.

Back to Examples

Example 39: method for training a neural network for facial detection

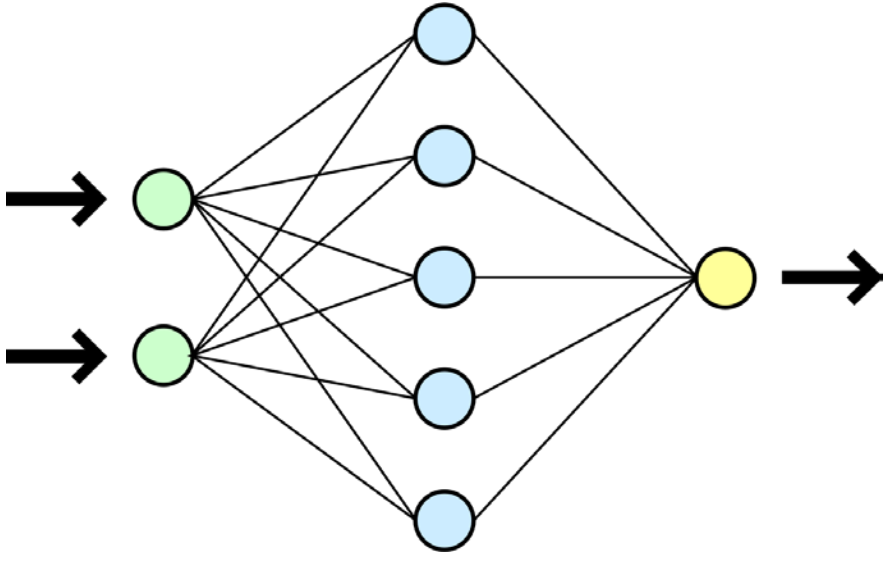
Facial detection: background

- Facial detection is a computer technology for identifying human faces in digital images
- Useful in many application such as:
  - Tagging pictures in social networking sites
  - Security access control



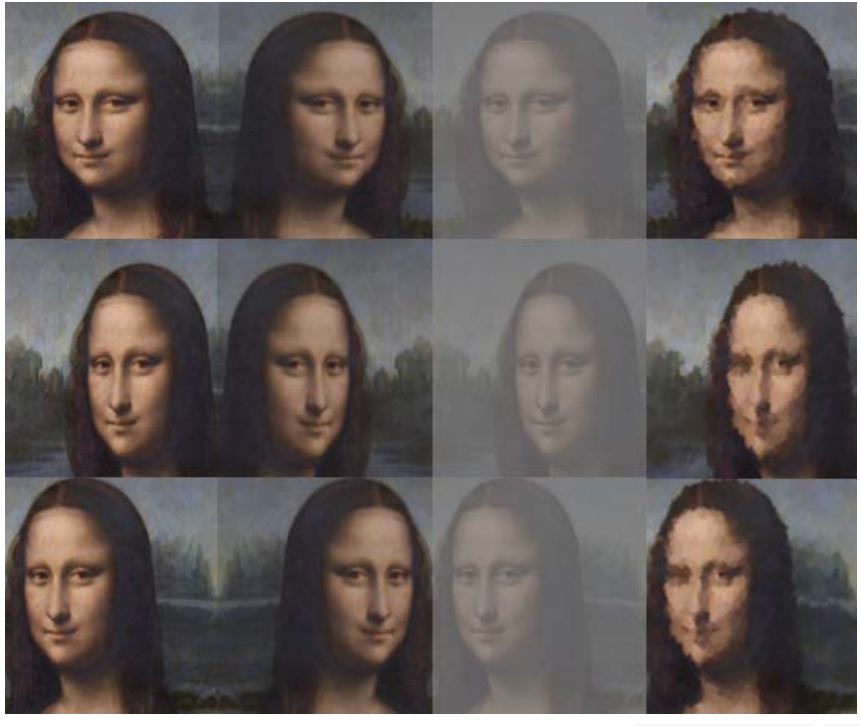
Facial detection: background

- Previous methods used neural networks to classify images as containing a human face or not
- A neural network is a framework of machine learning algorithms that work together to classify an input based upon a previous training process.
- However, the prior art has difficulty robustly detecting human faces where there are shifts, distortions, and variations in scale and rotation in the face pattern in the image.



Facial detection: what did applicant invent?

- The invention seeks to more robustly detect facial images using a combination of features.
- First, the inventor uses an expanded training set by applying numerous transformation functions (e.g. rotating, mirroring, contrast reduction, etc.) to an acquired set of images.
- A neural network is then trained with this expanded training set using stochastic learning with backpropagation.



Facial detection: what did applicant invent (cont.)?

- Unfortunately, the expanded training set increases false positives when classifying non-facial images.
- The second feature of applicant's invention is to address this by performing an iterative training algorithm, in which the system is retrained with an updated training set containing false positives introduced after face detection was performed on a set of non-facial images.

Facial detection: what did applicant claim?

Now that we understand what applicant invented, let's look at what applicant claimed:

A computer-implemented method of training a neural network for facial detection 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.

Facial detection: claim + step 1

A computer-implemented method of training a neural network for facial detection 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.

Evaluate step 1:
Does this claim fall within a statutory category?

Facial detection: step 1

A computer-implemented method of training a neural network for facial detection 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.

Step 1 = Yes.

The claim recites a series of steps, and thus, the claim is to a process.

Facial detection: step 2A Prong One

A computer-implemented method of training a neural network for facial detection 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.

Evaluate step 2A Prong One:

(a) identify the specific limitation(s) in the claim that you believe recites an abstract idea; and

(b) determine whether the identified limitation(s) falls within at least one of the groupings of abstract ideas enumerated in the 2019 PEG

Do the claimed limitations fall within these groupings?

Mathematical concepts

- mathematical relationships
- mathematical formulas or equations
- mathematical calculations

Mental processes

- concepts performed in the human mind (including an observation, evaluation, judgment, opinion)

Certain methods of organizing human activity

- fundamental economic principles or practices (including hedging, insurance, mitigating risk)
- commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations)
- managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions)

Facial detection: step 2A Prong One (cont.)

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

collecting a set of digital facial images from a database;

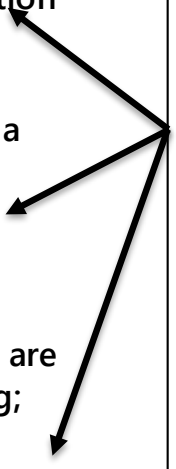
applying one or more transformations to each digital facial image including mirroring, rotating, smoothing, or contrast reduction to create a modified set of digital facial images;

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.



Evaluate step 2A Prong One:

The claim includes several limitations that are based upon mathematical relationships, formulas, or calculations.

However, these mathematical relationships, formulas, or calculations are not explicitly recited in the claim.

Therefore, the claim does not recite a mathematical concept.

Facial detection: step 2A Prong One (cont.)

A computer-implemented method of training a neural network for facial detection 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.

Evaluate step 2A Prong One:

The claim does not recite a mental process because the steps, as claimed, are not practically performed in the human mind.

The claim does not recite any method of organizing human activity such as a fundamental economic concept or managing interactions between people.

Facial detection: step 2A Prong One (cont.)

A computer-implemented method of training a neural network for facial detection 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.

Step 2A = No

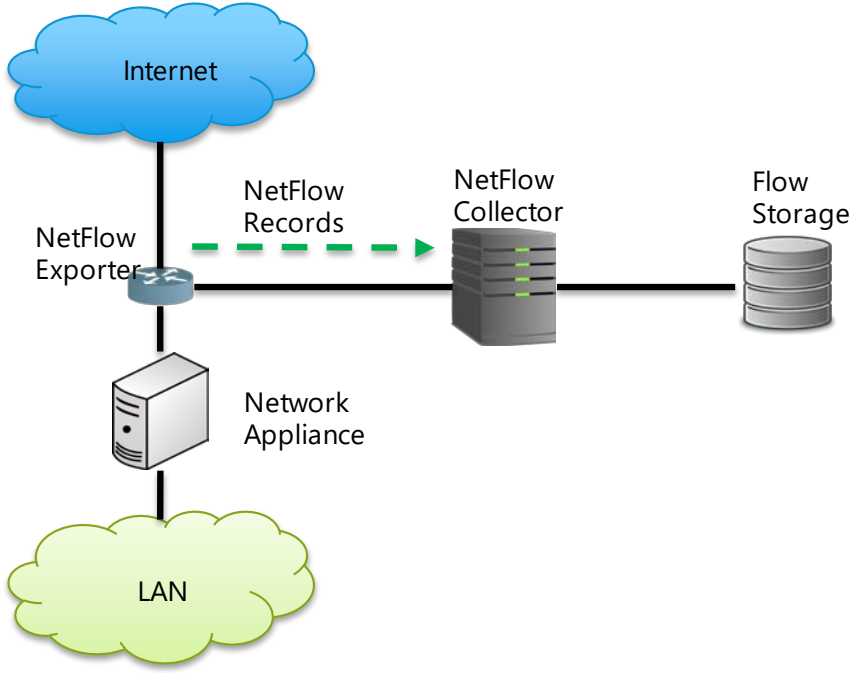
Since the claim does not recite an abstract idea or any other judicial exception, the claim is eligible.

Back to Examples

Example 40: adaptive monitoring of network traffic data

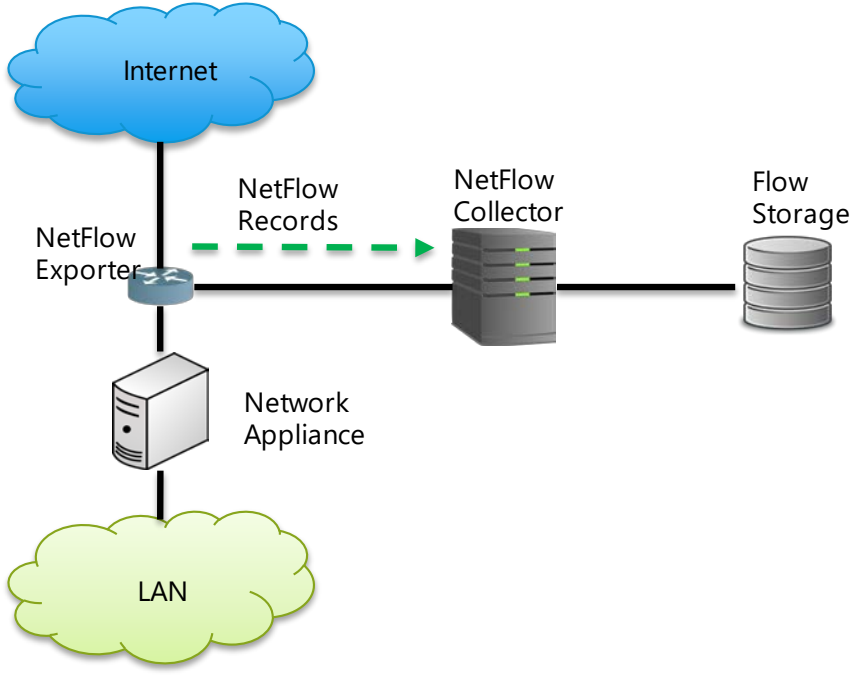
Network monitoring: background

- NetFlow is an industry standard network visibility tool used to monitor network traffic, applications, performance, and resources.
- Typically, a NetFlow exporter generates and exports network traffic statistics (in the form of NetFlow records) to at least one NetFlow collector that analyzes and stores the statistics.
- However, NetFlow records are very large, which increases traffic volume on the network and hinders network performance.



Network monitoring: what did applicant invent?

- Applicant addresses the issues of the prior art by only collecting NetFlow data and exporting a NetFlow record when abnormal network conditions are detected.
- These abnormal network conditions indicate that more data (i.e. NetFlow records) are needed to analyze the abnormal conditions.
- A network appliance is used to determine if an abnormal condition exists by collecting network data (e.g. network delay, packet loss, or jitter) and comparing the data to a predefined threshold.



Network monitoring (claim 1): what did applicant claim?

Now that we understand what applicant invented, let's look at what applicant claimed:

1. A method for adaptive monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter;

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold; and

collecting additional traffic data relating to the network traffic when the collected traffic data is greater than the predefined threshold, the additional traffic data comprising NetFlow protocol data.

Network monitoring (claim 1): claim + step 1

1. A method for adaptive monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter;

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold; and

collecting additional traffic data relating to the network traffic when the collected traffic data is greater than the predefined threshold, the additional traffic data comprising NetFlow protocol data.

Evaluate step 1:
Does this claim fall within a statutory category?

Network monitoring (claim 1): step 1

1. A method for adaptive monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter;

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold; and

collecting additional traffic data relating to the network traffic when the collected traffic data is greater than the predefined threshold, the additional traffic data comprising NetFlow protocol data.

Step 1 = Yes.

The claim recites a series of steps and, therefore, is a process.

Network monitoring (claim 1): step 2A Prong One

1. A method for adaptive monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter;

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold; and

collecting additional traffic data relating to the network traffic when the collected traffic data is greater than the predefined threshold, the additional traffic data comprising NetFlow protocol data.

Evaluate step 2A Prong One:

(a) identify the specific limitation(s) in the claim that you believe recites an abstract idea; and

(b) determine whether the identified limitation(s) falls within at least one of the groupings of abstract ideas enumerated in the 2019 PEG.

Network monitoring (claim 1): step 2A Prong One (cont.)

1. A method for adaptive monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter;

comparing, by the network appliance**, at least one of the collected traffic data to a predefined threshold;** and

collecting additional traffic data relating to the network traffic when the collected traffic data is greater than the predefined threshold, the additional traffic data comprising NetFlow protocol data.

The claim recites the limitation of comparing at least one of the collected traffic data to a predefined threshold.

Now look at the 2019 PEG to evaluate whether this limitation falls within at least one of the groupings of abstract ideas.

Does the "comparing" step fall within these groupings?

Mathematical concepts

- mathematical relationships
- mathematical formulas or equations
- mathematical calculations

Mental processes

- concepts performed in the human mind (including an observation, evaluation, judgment, opinion)

Certain methods of organizing human activity

- fundamental economic principles or practices (including hedging, insurance, mitigating risk)
- commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations)
- managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions)

Network monitoring (claim 1): step 2A Prong One (cont.)

Mental Processes

concepts performed in the human mind (including an observation, evaluation, judgment, opinion)

This comparing step, as drafted, is a process that under its broadest reasonable interpretation, covers performance of the limitation in the mind but for the recitation of generic computer components.

That is, other than reciting "by the network appliance", nothing in the claim element precludes the step from practically being performed in the human mind.

For example, but for the "by the network appliance" language, the claim encompasses a user comparing the collected packet loss data to a predetermined acceptable quality percentage in his/her mind.

Additionally, the mere nominal recitation of a generic network appliance does not take the claim limitation out of the mental processes grouping.

Thus, the claim recites a mental process.

Network monitoring (claim 1): step 2A Prong Two

1. A method for adaptive monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter;

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold; and

collecting additional traffic data relating to the network traffic when the collected traffic data is greater than the predefined threshold, the additional traffic data comprising NetFlow protocol data.

Evaluate step 2A Prong Two:

Are there additional element(s) or a combination of elements in the claim that apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that it is more than a drafting effort designed to monopolize the exception?

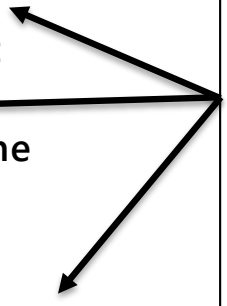
Network monitoring (claim 1): step 2A Prong Two (cont.)

1. A method for adaptive monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter;

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold; and

collecting additional traffic data relating to the network traffic when the collected traffic data is greater than the predefined threshold, the additional traffic data comprising NetFlow protocol data.



The claim recites the combination of additional elements of: 1) collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter; 2) using a network appliance to perform the comparing step; and 3) collecting additional traffic data relating to the network traffic when the collected traffic data is greater than the predefined threshold, the additional traffic data comprising NetFlow protocol data.

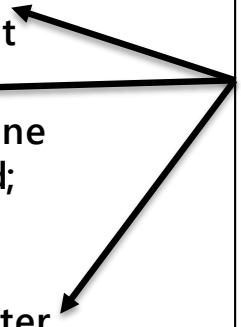
Network monitoring (claim 1): step 2A Prong Two (cont.)

1. A method for adaptive monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter;

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold; and

collecting additional traffic data relating to the network traffic when the collected traffic data is greater than the predefined threshold, the additional traffic data comprising NetFlow protocol data.



Although each of the collecting steps analyzed individually may be viewed as mere pre- or post-solution activity, the claim as a whole is directed to a particular improvement in collecting traffic data.

The additional elements recite a specific manner of collecting additional NetFlow protocol data whenever the initially collected data reflects an abnormal condition, which avoids excess traffic volume on the network and hindrance of network performance. The collected data can then be used to analyze the cause of the abnormal condition, which provides a specific improvement over prior systems, resulting in improved network monitoring.

The claim as a whole integrates the mental process into a practical application.

Network monitoring (claim 1): step 2A Prong Two (cont.)

1. A method for adaptive monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter;

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold; and

collecting additional traffic data relating to the network traffic when the collected traffic data is greater than the predefined threshold, the additional traffic data comprising NetFlow protocol data.

Step 2A = No.

The claim is eligible because it is not directed to an abstract idea or any other judicial exception.

Network monitoring (claim 2): what did applicant claim?

Now let's look at a slightly different claimed method for monitoring of traffic data through a network appliance:

2. A method for monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter; and

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold.

Network monitoring (claim 2): claim + step 1

2. A method for monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter; and

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold.

Evaluate step 1:
Does this claim fall within a statutory category?

Network monitoring (claim 2): step 1

2. A method for monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter; and

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold.

Step 1 = Yes.

The claim recites a series of steps and, therefore, is a process.

Network monitoring (claim 2): step 2A Prong One

2. A method for monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter; and

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold.

Evaluate step 2A Prong One:

(a) identify the specific limitation(s) in the claim that you believe recites an abstract idea; and

(b) determine whether the identified limitation(s) falls within at least one of the groupings of abstract ideas enumerated in the 2019 PEG.

Network monitoring (claim 2): step 2A Prong One (cont.)

2. A method for monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter; and

comparing, by the network appliance, **at least one of the collected traffic data to a predefined threshold.**

The claim recites the limitation of comparing at least one of the collected traffic data to a predefined threshold.

Now look at the 2019 PEG to evaluate whether this limitation falls within at least one of the groupings of abstract ideas.

Does the "comparing" step fall within these groupings?

Mathematical concepts

- mathematical relationships
- mathematical formulas or equations
- mathematical calculations

Mental processes

- concepts performed in the human mind (including an observation, evaluation, judgment, opinion)

Certain Methods Of Organizing Human Activity

- fundamental economic principles or practices (including hedging, insurance, mitigating risk)
- commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations)
- managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions)

Network monitoring (claim 2): step 2A Prong One (cont.)

Mental processes

concepts performed in the human mind (including an observation, evaluation, judgment, opinion)

This comparing step, as drafted, is a process that under its broadest reasonable interpretation, covers performance of the limitation in the mind but for the recitation of generic computer components.

That is, other than reciting "by the network appliance", nothing in the claim element precludes the step from practically being performed in the human mind.

For example, but for the "by the network appliance" language, the claim encompasses a user comparing the collected packet loss data to a predetermined acceptable quality percentage in his/her mind.

Additionally, the mere nominal recitation of a generic network appliance does not take the claim limitation out of the mental processes grouping.

Thus, the claim recites a mental process.

Network monitoring (claim 2): step 2A Prong Two

2. A method for monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter; and

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold.

Evaluate step 2A Prong Two:

Are there additional element(s) or a combination of elements in the claim that apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that it is more than a drafting effort designed to monopolize the exception?

Network monitoring (claim 2): step 2A Prong Two (cont.)

2. A method for monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter; and

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold.

The claim recites two additional elements: collecting at least one of network delay, packet loss, or jitter relating to the network traffic passing through the network appliance, and that a generic network appliance performs the comparing step.

Network monitoring (claim 2): step 2A Prong Two (cont.)

2. A method for monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter; and

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold.

The collecting step is recited at a high level of generality (*i.e.*, as a general means of gathering network traffic data for use in the comparison step) and amounts to mere data gathering, which is a form of insignificant extra-solution activity.

Network monitoring (claim 2): step 2A Prong Two (cont.)

2. A method for monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter; and

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold.

The network appliance that performs the comparison step is also recited at a high level of generality, and merely automates the comparison step. Each of the additional limitations is no more than mere instructions to apply the exception using a generic computer component (the network appliance).

Network monitoring (claim 2): step 2A Prong Two (cont.)

2. A method for monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter; and

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold.

The combination of these additional elements is no more than mere instructions to apply the exception using a generic computer component (the network appliance). Accordingly, even in combination, these additional elements do not integrate the abstract idea into a practical application because they do not impose any meaningful limits on practicing the abstract idea.

Network monitoring (claim 2): step 2A Prong Two (cont.)

2. A method for monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter; and

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold.

Step 2A = Yes.

The claim is directed to an abstract idea.

Network monitoring (claim 2): step 2B

2. A method for monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter; and

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold.

Evaluate step 2B:

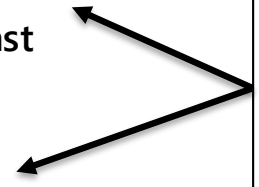
Does the claim provide an inventive concept, *i.e.*, does the claim recite additional element(s) or a combination of elements that amount to significantly more than the judicial exception in the claim?

Network monitoring (claim 2): step 2B (cont.)

2. A method for monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter; and

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold.



As discussed with respect to Step 2A Prong Two, the additional elements in the claim amount to no more than mere instructions to apply the exception using a generic computer component.

The same conclusion is reached in 2B, i.e., mere instructions to apply an exception on a generic computer cannot integrate a judicial exception into a practical application at Step 2A or provide an inventive concept in Step 2B.

Network monitoring (claim 2): step 2B (cont.)

2. A method for monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter; and

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold.

Under the 2019 PEG, a conclusion that an additional element is insignificant extra-solution activity in Step 2A should be re-evaluated in Step 2B.

Here, the collecting step was considered to be extra-solution activity in Step 2A, and thus it is re-evaluated in Step 2B to determine if it is more than what is well-understood, routine, conventional activity in the field.

Network monitoring (claim 2): step 2B (cont.)

2. A method for monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter; and

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold.

The background of the example does not provide any indication that the network appliance is anything other than a generic, off-the-shelf computer component, and the *Symantec*, *TLI*, and *OIP Techs.* court decisions cited in MPEP 2106.05(d)(II) indicate that mere collection or receipt of data over a network is a well-understood, routine, conventional function when it is claimed in a merely generic manner (as it is here).

Network monitoring (claim 2): step 2B (cont.)

2. A method for monitoring of traffic data through a network appliance connected between computing devices in a network, the method comprising:

collecting, by the network appliance, traffic data relating to the network traffic passing through the network appliance, the traffic data comprising at least one of network delay, packet loss, or jitter; and

comparing, by the network appliance, at least one of the collected traffic data to a predefined threshold.

Accordingly, a conclusion that the collecting step is well-understood, routine, conventional activity is supported under *Berkheimer* Option 2.

Step 2B = No.

The claim is ineligible.

Drafting a rejection

- **Because this claim (claim 2) is ineligible, it should be rejected as lacking subject matter eligibility under 35 U.S.C. 101. The rejection should:**
  - Identify the abstract idea recited in the claim, and include a reference to the appropriate enumerated grouping of abstract ideas;
  - Identify the additional elements and explain why they do not integrate the abstract idea into a practical application; and
  - Explain why the additional elements do not provide an inventive concept.
- **As discussed in this training, new form paragraphs have been created for use with the 2019 PEG.**
- **A sample rejection of a claim (claim 3 of example 37) under the 2019 PEG is posted on the microsite.**

Back to Examples

Example 41: cryptographic communications

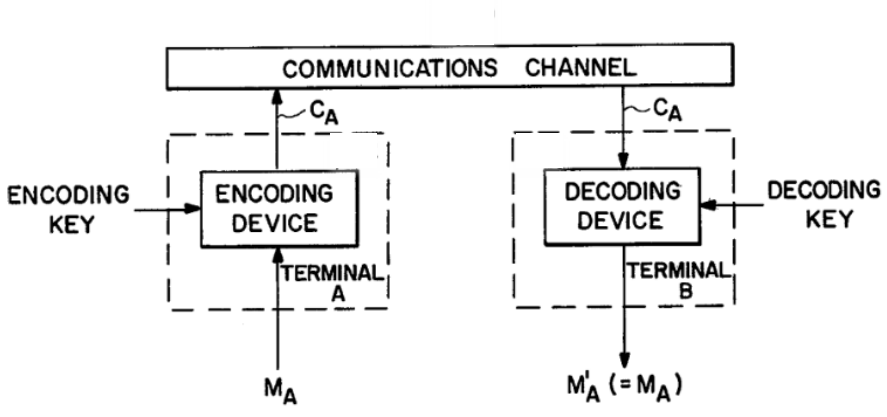
Cryptography: background

- **Security of information is important in computer technology**
  - Critical that data being sent from a sender to a recipient is unable to be intercepted and understood by intermediate eavesdroppers
  - Authentication of the source of the message must be ensured along with the verification and security of the message content

- **Prior art cryptographic encoding and decoding methods require expensive encoding and decoding hardware and a secure way of sharing the private key used to encrypt and decrypt the message**
- **There is a need in the art to perform security and authentication functions efficiently over a public key system**
  - Allow information to be easily shared between users who do not know each other and have not shared the key used to encrypt and decrypt the information

Cryptography: what did applicant invent?

- **The invention establishes cryptographic communications using an algorithm to encrypt a plaintext into a ciphertext**
- **The invention includes:**
  - an encoding device, which is a computer terminal;
  - a decoding device, which is a computer terminal; and
  - a communication channel, where the encoding and decoding devices are coupled to the communication channel.



Cryptography: what did applicant invent? (cont'd)

- **The algorithm is as follows:**
  - The message-to-be-transmitted is precoded by converting it to a numerical representation which is broken into one or more blocks M_A of equal length. This precoding may be done by any conventional means.
  - The resulting message M_A is a number representative of a message-to-be-transmitted, where $0 \leq M_A \leq n-1$, where n is a composite number of the form $n=p*q$, where p and q are prime numbers.
  - The encoding key E is a pair of positive integers e and n, which are related to the particular decoding device.
  - The encoding device distinctly encodes each of the n possible messages.
  - The transformation provided by the encoding device is described by the relation $C_A=M_A^e \pmod n$ where e is a number relatively prime to $(p-1)*(q-1)$.
  - The encoding device transmits the ciphertext word signal C_A to the decoding device over the communications channel.

Cryptography: what did applicant invent? (cont'd)

- **The invention improves upon the prior art because by using only the variables n and e (which are publicly known), a plaintext can be encrypted by anyone**
  - The variables p and q are only known by the owner of the decryption key d and are used to generate a decryption key
  - The security of the cipher relies on the difficulty of factoring large integers by computers
  - Therefore, there is no known efficient algorithm to recover the plaintext given the ciphertext and the public information (n, e) (assuming that p and q are sufficiently large)

Cryptography: what did applicant claim?

Now that we understand what applicant invented, let's look at what applicant claimed:

A method for establishing cryptographic communications between a first computer terminal and a second computer terminal comprising:

receiving a plaintext word signal at the first computer terminal;

transforming the plaintext word signal to one or more message block word signals M_A;

encoding each of the message block word signals M_A to produce a ciphertext word signal C_A, whereby $C_A = M_A^e \pmod n$;

where C_A is a number representative of an encoded form of message word M_A;

where M_A corresponds to a number representative of a message and $0 \leq M_A \leq n-1$;

where n is a composite number of the form $n = p*q$;

where p and q are prime numbers;

where e is a number relatively prime to $(p-1)*(q-1)$; and

transmitting the ciphertext word signal C_A to the second computer terminal over a communication channel.

Cryptography: claim + step 1

A method for establishing cryptographic communications between a first computer terminal and a second computer terminal comprising:

receiving a plaintext word signal at the first computer terminal;

transforming the plaintext word signal to one or more message block word signals M_A;

encoding each of the message block word signals M_A to produce a ciphertext word signal C_A, whereby $C_A = M_A^e \pmod n$;

where C_A is a number representative of an encoded form of message word M_A;

where M_A corresponds to a number representative of a message and $0 \leq M_A \leq n-1$;

where n is a composite number of the form $n=p*q$;

where p and q are prime numbers;

where e is a number relatively prime to $(p-1)*(q-1)$; and

transmitting the ciphertext word signal C_A to the second computer terminal over a communication channel.

Evaluate step 1:
Does this claim fall within a statutory category?

Cryptography: step 1

A method for establishing cryptographic communications between a first computer terminal and a second computer terminal comprising:

receiving a plaintext word signal at the first computer terminal;

transforming the plaintext word signal to one or more message block word signals M_A;

encoding each of the message block word signals M_A to produce a ciphertext word signal C_A, whereby $C_A = M_A^e \pmod n$;

where C_A is a number representative of an encoded form of message word M_A;

where M_A corresponds to a number representative of a message and $0 \leq M_A \leq n-1$;

where n is a composite number of the form $n=p*q$;

where p and q are prime numbers;

where e is a number relatively prime to $(p-1)*(q-1)$; and

transmitting the ciphertext word signal C_A to the second computer terminal over a communication channel.

Step 1 = Yes.

The claim recites a series of steps and, therefore, is a process.

Cryptography: step 2A Prong One

A method for establishing cryptographic communications between a first computer terminal and a second computer terminal comprising:

receiving a plaintext word signal at the first computer terminal;

transforming the plaintext word signal to one or more message block word signals M_A;

encoding each of the message block word signals M_A to produce a ciphertext word signal C_A, whereby $C_A=M_A^e \pmod n$;

where C_A is a number representative of an encoded form of message word M_A;

where M_A corresponds to a number representative of a message and $0 \leq M_A \leq n-1$;

where n is a composite number of the form $n=p*q$;

where p and q are prime numbers;

where e is a number relatively prime to $(p-1)*(q-1)$; and

transmitting the ciphertext word signal C_A to the second computer terminal over a communication channel.

Evaluate step 2A Prong One:

(a) identify the specific limitation(s) in the claim that you believe recites an abstract idea; and

(b) determine whether the identified limitation(s) falls within at least one of the groupings of abstract ideas enumerated in the 2019 PEG.

Cryptography: step 2A Prong One (cont.)

A method for establishing cryptographic communications between a first computer terminal and a second computer terminal comprising:

receiving a plaintext word signal at the first computer terminal;

transforming the plaintext word signal to one or more message block word signals M_A;

encoding each of the message block word signals M_A to produce a ciphertext word signal C_A, whereby $C_A = M_A^e \pmod n$;

where C_A is a number representative of an encoded form of message word M_A;

where M_A corresponds to a number representative of a message and $0 \leq M_A \leq n-1$;

where n is a composite number of the form n=p*q;

where p and q are prime numbers;

where e is a number relatively prime to (p-1)*(q-1); and

transmitting the ciphertext word signal C_A to the second computer terminal over a communication channel.

The claim recites a step of encoding each of the message block word signals M_A to produce a ciphertext word signal C_A, whereby $C_A = M_A^e \pmod n$. The claim explicitly states that the step of encoding is performed using mathematical formulas and calculations.

Now look at the 2019 PEG to evaluate whether these limitations fall within at least one of the groupings of abstract ideas.

Does the "encoding" step fall within these groupings?

Mathematical concepts

- mathematical relationships
- mathematical formulas or equations
- mathematical calculations

Mental processes

- concepts performed in the human mind (including an observation, evaluation, judgment, opinion)

Certain methods Of organizing human activity

- fundamental economic principles or practices (including hedging, insurance, mitigating risk)
- commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations)
- managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions)

Cryptography: step 2A Prong One (cont.)

Mathematical concepts

mathematical relationships

mathematical formulas or equations

mathematical calculations

The claimed concept of encoding performed using mathematical formulas and calculations falls within the "Mathematical concepts" grouping.

Accordingly, this claim recites an abstract idea.

Note, while the "encoding" step is determined to recite a mathematical concept in this example, this is because the claim explicitly states that the encoding is being performed using mathematical formulas and calculations.

Does the "transforming" step fall within these groupings?

Mathematical concepts

- **mathematical relationships**
- **mathematical formulas or equations**
- **mathematical calculations**

Mental processes

- **concepts performed in the human mind (including an observation, evaluation, judgment, opinion)**

Certain methods of organizing human activity

- fundamental economic principles or practices (including hedging, insurance, mitigating risk)
- commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations)
- managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions)

Cryptography: step 2A Prong One (cont.)

Mathematical concepts

mathematical relationships

mathematical formulas or equations

mathematical calculations

Mental processes

concepts performed in the human mind (including an observation, evaluation, judgment, opinion)

The transforming step is not considered to fall within one of the groupings of abstract ideas.

The transformation step, as claimed, is based upon mathematical relationships, formulas, or calculations. However, unlike the encoding step, these mathematical relationships, formulas, or calculations are not explicitly recited in the transformation step.

The transformation step, as claimed, cannot practically be performed in the human mind.

Cryptography: step 2A Prong Two

A method for establishing cryptographic communications between a first computer terminal and a second computer terminal comprising:

receiving a plaintext word signal at the first computer terminal;

transforming the plaintext word signal to one or more message block word signals M_A;

encoding each of the message block word signals M_A to produce a ciphertext word signal C_A, whereby $C_A = M_A^e \pmod n$;

where C_A is a number representative of an encoded form of message word M_A;

where M_A corresponds to a number representative of a message and $0 \leq M_A \leq n-1$;

where n is a composite number of the form $n=p*q$;

where p and q are prime numbers;

where e is a number relatively prime to $(p-1)*(q-1)$; and

transmitting the ciphertext word signal C_A to the second computer terminal over a communication channel.

Evaluate step 2A Prong Two:

Are there additional element(s) or a combination of elements in the claim that 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?

Cryptography: step 2A Prong Two (cont.)

A method for establishing cryptographic communications between a first computer terminal and a second computer terminal comprising:

receiving a plaintext word signal at the first computer terminal;

transforming the plaintext word signal to one or more message block word signals M_A;

encoding each of the message block word signals M_A to produce a ciphertext word signal C_A, whereby $C_A = M_A^e \pmod n$;

where C_A is a number representative of an encoded form of message word M_A;

where M_A corresponds to a number representative of a message and $0 \leq M_A \leq n-1$;

where n is a composite number of the form $n=p*q$;

where p and q are prime numbers;

where e is a number relatively prime to $(p-1)*(q-1)$; and

transmitting the ciphertext word signal C_A to the second computer terminal over a communication channel.

The claim recites the combination of additional elements of: 1) receiving a plaintext word signal at the first computer terminal; 2) transforming the plaintext word signal to one or more message block word signals M_A; 3) transmitting the ciphertext word signal C_A to the second computer terminal over a communication channel.

Cryptography: step 2A Prong Two (cont.)

A method for establishing cryptographic communications between a first computer terminal and a second computer terminal comprising:

receiving a plaintext word signal at the first computer terminal;

transforming the plaintext word signal to one or more message block word signals M_A;

encoding each of the message block word signals M_A to produce a ciphertext word signal C_A, whereby $C_A = M_A^e \pmod n$;

where C_A is a number representative of an encoded form of message word M_A;

where M_A corresponds to a number representative of a message and $0 \leq M_A \leq n-1$;

where n is a composite number of the form $n=p*q$;

where p and q are prime numbers;

where e is a number relatively prime to $(p-1)*(q-1)$; and

transmitting the ciphertext word signal C_A to the second computer terminal over a communication channel.

The combination of additional elements use the mathematical concepts in a meaningful way beyond generally linking the use of the mathematical concepts to a particular technological environment, such that the claim as a whole is more than a drafting effort to monopolize the exception.

In particular, the combination of additional elements use the mathematical formulas and calculations in a specific manner that sufficiently limits the use of the mathematical concepts to the practical application of transmitting the ciphertext word signal to a computer terminal over a communication channel.

Cryptography: step 2A Prong Two (cont.)

A method for establishing cryptographic communications between a first computer terminal and a second computer terminal comprising:

receiving a plaintext word signal at the first computer terminal;

transforming the plaintext word signal to one or more message block word signals M_A;

encoding each of the message block word signals M_A to produce a ciphertext word signal C_A, whereby $C_A = M_A^e \pmod n$;

where C_A is a number representative of an encoded form of message word M_A;

where M_A corresponds to a number representative of a message and $0 \leq M_A \leq n-1$;

where n is a composite number of the form $n=p*q$;

where p and q are prime numbers;

where e is a number relatively prime to $(p-1)*(q-1)$; and

transmitting the ciphertext word signal C_A to the second computer terminal over a communication channel.

Thus, the mathematical concepts are integrated into a process that secures private network communications, so that a ciphertext word signal can be transmitted between computers of people who do not know each other or who have not shared a private key between them in advance of the message being transmitted, where the security of the cipher relies on the difficulty of factoring large integers by computers.

The claim as a whole integrates the mathematical concept into a practical application.

Cryptography: step 2A Prong Two (cont.)

A method for establishing cryptographic communications between a first computer terminal and a second computer terminal comprising:

receiving a plaintext word signal at the first computer terminal;

transforming the plaintext word signal to one or more message block word signals M_A;

encoding each of the message block word signals M_A to produce a ciphertext word signal C_A, whereby $C_A = M_A^e \pmod n$;

where C_A is a number representative of an encoded form of message word M_A;

where M_A corresponds to a number representative of a message and $0 \leq M_A \leq n-1$;

where n is a composite number of the form $n=p*q$;

where p and q are prime numbers;

where e is a number relatively prime to $(p-1)*(q-1)$; and

transmitting the ciphertext word signal C_A to the second computer terminal over a communication channel.

As previously discussed, Step 2A Prong Two excludes evaluation of the well-understood, routine, conventional (WURC) consideration. Thus, even well-understood, routine, conventional subject matter can integrate an abstract idea into a practical application.

In the context of this example, the exclusion of the WURC consideration means that even though receiving a signal at a first computer, transforming it and transmitting the transformed signal to a second computer are described in the background as being conventional, they still integrate the abstract idea in Step 2A Prong Two.

Cryptography: step 2A Prong Two (cont.)

A method for establishing cryptographic communications between a first computer terminal and a second computer terminal comprising:

receiving a plaintext word signal at the first computer terminal;

transforming the plaintext word signal to one or more message block word signals M_A;

encoding each of the message block word signals M_A to produce a ciphertext word signal C_A, whereby $C_A=M_A^e \pmod n$;

where C_A is a number representative of an encoded form of message word M_A;

where M_A corresponds to a number representative of a message and $0 \leq M_A \leq n-1$;

where n is a composite number of the form n=p*q;

where p and q are prime numbers;

where e is a number relatively prime to (p-1)*(q-1);

and

transmitting the ciphertext word signal C_A to the second computer terminal over a communication channel.

Step 2A = No.

The claim is eligible because it is not directed to an abstract idea or any other judicial exception.

Back to Examples

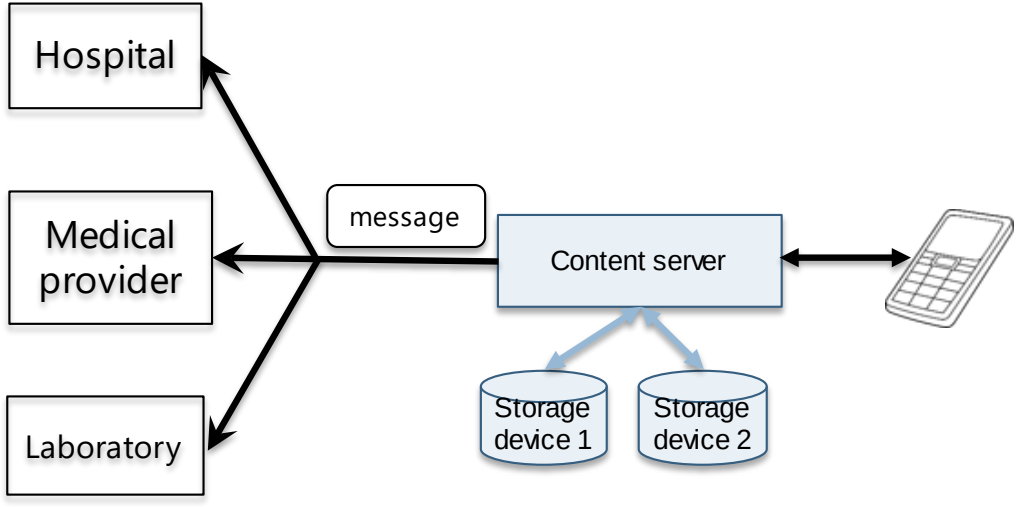
Example 42: method for transmission of notifications when medical records are updated

Medical records: background

- Patients with chronic or undiagnosed illnesses must visit many medical providers in different locations
- In prior art systems, medical providers store patient information in medical records locally in a format that is dependent on the hardware and/or software platforms in use in the provider's office
- These systems make it is difficult to share updated information on a patient's medical condition with other medical providers because of 1) format inconsistencies; 2) different geographic locations of the information; and 3) untimely sharing of information

Medical records: what did applicant invent?

- **Applicant has invented a network-based patient management method that collects, converts and consolidates patient information from various medical providers into a standardized format, stores it in network-based storage devices, and generates messages notifying health care providers or patients whenever that information is updated**
  - A graphical user interface on a local device provides remote access to view or update information in any format about a patient's medical condition
  - The information is converted into a standardized format and is stored in a collection of medical records on the network-based storage devices
  - The content server immediately generates a message containing the updated information, where the message is transmitted in a standardized format over a computer network to medical providers



Medical records (claim 1): what did applicant claim?

Now that we understand what applicant invented, let's look at what applicant claimed:

1. A method comprising:

a) storing information in a standardized format about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

b) providing remote access to users over a network so any one of the users can update the information about the patient's condition in the collection of medical records in real time through a graphical user interface, wherein the one of the users provides the updated information in a non-standardized format dependent on the hardware and software platform used by the one of the users;

c) converting, by a content server, the non-standardized updated information into the standardized format;

d) storing the standardized updated information about the patient's condition in the collection of medical records in the standardized format;

e) automatically generating a message containing the updated information about the patient's condition by the content server whenever updated information has been stored; and

f) transmitting the message to all of the users over the computer network in real time, so that each user has immediate access to up-to-date patient information.

Medical records (claim 1): claim + step 1

1. A method comprising:

a) storing information in a standardized format about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

b) providing remote access to users over a network so any one of the users can update the information about the patient's condition in the collection of medical records in real time through a graphical user interface, wherein the one of the users provides the updated information in a non-standardized format dependent on the hardware and software platform used by the one of the users;

c) converting, by a content server, the non-standardized updated information into the standardized format;

d) storing the standardized updated information about the patient's condition in the collection of medical records in the standardized format;

e) automatically generating a message containing the updated information about the patient's condition by the content server whenever updated information has been stored; and

f) transmitting the message to all of the users over the computer network in real time, so that each user has immediate access to up-to-date patient information.

Evaluate step 1:
Does this claim fall within a statutory category?

Medical records (claim 1): step 1

1. A method comprising:

a) storing information in a standardized format about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

b) providing remote access to users over a network so any one of the users can update the information about the patient's condition in the collection of medical records in real time through a graphical user interface, wherein the one of the users provides the updated information in a non-standardized format dependent on the hardware and software platform used by the one of the users;

c) converting, by a content server, the non-standardized updated information into the standardized format;

d) storing the standardized updated information about the patient's condition in the collection of medical records in the standardized format;

e) automatically generating a message containing the updated information about the patient's condition by the content server whenever updated information has been stored; and

f) transmitting the message to all of the users over the computer network in real time, so that each user has immediate access to up-to-date patient information.

Step 1 = Yes.

The claim recites a series of steps and, therefore, is a process.

Medical records (claim 1): step 2A Prong One

1. A method comprising:

a) storing information in a standardized format about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

b) providing remote access to users over a network so any one of the users can update the information about the patient's condition in the collection of medical records in real time through a graphical user interface, wherein the one of the users provides the updated information in a non-standardized format dependent on the hardware and software platform used by the one of the users;

c) converting, by a content server, the non-standardized updated information into the standardized format;

d) storing the standardized updated information about the patient's condition in the collection of medical records in the standardized format;

e) automatically generating a message containing the updated information about the patient's condition by the content server whenever updated information has been stored; and

f) transmitting the message to all of the users over the computer network in real time, so that each user has immediate access to up-to-date patient information.

Evaluate step 2A Prong One:

(a) identify the specific limitation(s) in the claim that you believe recites an abstract idea; and

(b) determine whether the identified limitation(s) falls within at least one of the groupings of abstract ideas enumerated in the 2019 PEG.

Medical records (claim 1): step 2A Prong One (cont.)

1. A method comprising:

a) storing information in a standardized format about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

b) providing remote access to users over a network so any one of the users can update the information about the patient's condition in the collection of medical records in real time through a graphical user interface, wherein the one of the users provides the updated information in a non-standardized format dependent on the hardware and software platform used by the one of the users;

c) converting, by a content server, the non-standardized updated information into the standardized format;

d) storing the standardized updated information about the patient's condition in the collection of medical records in the standardized format;

e) automatically generating a message containing the updated information about the patient's condition by the content server whenever updated information has been stored; and

f) transmitting the message to all of the users over the computer network in real time, so that each user has immediate access to up-to-date patient information.

The claimed invention is a method that allows for users to access patients' medical records and receive updated information in real time from other users.

Now look at the 2019 PEG to evaluate whether these limitations fall within at least one of the groupings of abstract ideas.

Do the claimed limitations fall within these groupings?

Mathematical concepts

- mathematical relationships
- mathematical formulas or equations
- mathematical calculations

Mental processes

- concepts performed in the human mind (including an observation, evaluation, judgment, opinion)

Certain methods of organizing human activity

- fundamental economic principles or practices (including hedging, insurance, mitigating risk)
- commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations)
- managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions)

Medical records (claim 1): step 2A Prong One (cont.)

Certain methods of organizing human activity

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commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations)

managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions)

The claimed concept of a method that allows for users to access patients' medical records and receive updated information from other users is a method of managing relationships or interactions between people. This concept falls within the Certain Methods of Organizing Human Activity grouping.

Accordingly, this claim recites an abstract idea.

Medical records (claim 1): step 2A Prong Two

1. A method comprising:

a) storing information in a standardized format about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

b) providing remote access to users over a network so any one of the users can update the information about the patient's condition in the collection of medical records in real time through a graphical user interface, wherein the one of the users provides the updated information in a non-standardized format dependent on the hardware and software platform used by the one of the users;

c) converting, by a content server, the non-standardized updated information into the standardized format;

d) storing the standardized updated information about the patient's condition in the collection of medical records in the standardized format;

e) automatically generating a message containing the updated information about the patient's condition by the content server whenever updated information has been stored; and

f) transmitting the message to all of the users over the computer network in real time, so that each user has immediate access to up-to-date patient information.

Evaluate step 2A Prong Two:

Are there additional element(s) or a combination of elements in the claim that 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?

Medical records (claim 1): step 2A Prong Two (cont.)

1. A method comprising:

a) storing information in a standardized format about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

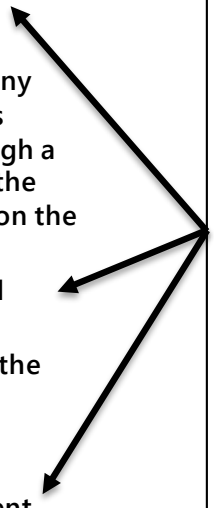
b) providing remote access to users over a network so any one of the users can update the information about the patient's condition in the collection of medical records in real time through a graphical user interface, wherein the one of the users provides the updated information in a non-standardized format dependent on the hardware and software platform used by the one of the users;

c) converting, by a content server, the non-standardized updated information into the standardized format;

d) storing the standardized updated information about the patient's condition in the collection of medical records in the standardized format;

e) automatically generating a message containing the updated information about the patient's condition by the content server whenever updated information has been stored; and

f) transmitting the message to all of the users over the computer network in real time, so that each user has immediate access to up-to-date patient information.



The claim recites the combination of additional elements of: a) storing information in a standardized format; b) providing remote access to users over a network in real time through a graphical user interface, wherein the one of the users provides the updated information in a non-standardized format dependent on the hardware and software platform used by the one of the users; c) converting, by a content server, the non-standardized updated information into the standardized format; d) storing the standardized updated information about the patient's condition in the collection of medical records in the standardized format; e) automatically generating a message containing the updated information about the patient's condition by the content server whenever updated information has been stored; and f) transmitting the message to all of the users over the computer network in real time.

Medical records (claim 1): step 2A Prong Two (cont.)

1. A method comprising:

a) storing information in a standardized format about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

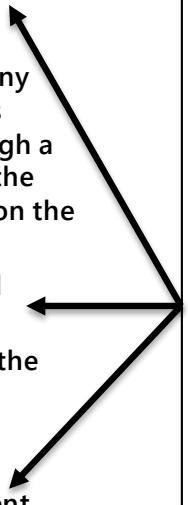
b) providing remote access to users over a network so any one of the users can update the information about the patient's condition in the collection of medical records in real time through a graphical user interface, wherein the one of the users provides the updated information in a non-standardized format dependent on the hardware and software platform used by the one of the users;

c) converting, by a content server, the non-standardized updated information into the standardized format;

d) storing the standardized updated information about the patient's condition in the collection of medical records in the standardized format;

e) automatically generating a message containing the updated information about the patient's condition by the content server whenever updated information has been stored; and

f) transmitting the message to all of the users over the computer network in real time, so that each user has immediate access to up-to-date patient information.



The combination of additional elements discussed on the previous slide integrate the abstract idea into a practical application. Specifically, the combination of additional elements recites a specific improvement over prior art systems by allowing remote users to share information in real time in a standardized format regardless of the format in which the information was input by the user.

The claim as a whole integrates the certain method of organizing human activity into a practical application.

Medical records (claim 1): step 2A Prong Two (cont.)

1. A method comprising:

a) storing information in a standardized format about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

b) providing remote access to users over a network so any one of the users can update the information about the patient's condition in the collection of medical records in real time through a graphical user interface, wherein the one of the users provides the updated information in a non-standardized format dependent on the hardware and software platform used by the one of the users;

c) converting, by a content server, the non-standardized updated information into the standardized format;

d) storing the standardized updated information about the patient's condition in the collection of medical records in the standardized format;

e) automatically generating a message containing the updated information about the patient's condition by the content server whenever updated information has been stored; and

f) transmitting the message to all of the users over the computer network in real time, so that each user has immediate access to up-to-date patient information.

Step 2A = No.

The claim is eligible because it is not directed to an abstract idea or any other judicial exception.

Medical records (claim 2): what did applicant claim?

Now let's look at a slightly different claimed method of medical records management:

2. A method comprising:

a) storing information about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

b) providing access, by a content server, to users so that any one of the users can update the information about the patient's condition in the collection of medical records, and;

c) storing the updated information about the patient's condition in the collection of medical records in the plurality of network-based non-transitory storage devices.

Medical records (claim 2): claim + step 1

2. A method comprising:

a) storing information about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

b) providing access, by a content server, to users so that any one of the users can update the information about the patient's condition in the collection of medical records, and;

c) storing the updated information about the patient's condition in the collection of medical records in the plurality of network-based non-transitory storage devices.

Evaluate step 1:
Does this claim fall within a statutory category?

Medical records (claim 2): step 1

2. A method comprising:

a) storing information about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

b) providing access, by a content server, to users so that any one of the users can update the information about the patient's condition in the collection of medical records, and;

c) storing the updated information about the patient's condition in the collection of medical records in the plurality of network-based non-transitory storage devices.

Step 1 = Yes.

The claim recites a series of steps and, therefore, is a process.

Medical records (claim 2): step 2A Prong One

2. A method comprising:

a) storing information about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

b) providing access, by a content server, to users so that any one of the users can update the information about the patient's condition in the collection of medical records, and;

c) storing the updated information about the patient's condition in the collection of medical records in the plurality of network-based non-transitory storage devices.

Evaluate step 2A Prong One:

(a) identify the specific limitation(s) in the claim that you believe recites an abstract idea; and

(b) determine whether the identified limitation(s) falls within at least one of the groupings of abstract ideas enumerated in the 2019 PEG.

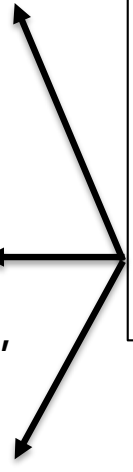
Medical records (claim 2): step 2A Prong One (cont.)

2. A method comprising:

a) storing information about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

b) providing access, by a content server, to users so that any one of the users can update the information about the patient's condition in the collection of medical records, and;

c) storing the updated information about the patient's condition in the collection of medical records in the plurality of network-based non-transitory storage devices.



The claimed invention is a method that allows for users to access and update patients' medical records and store the updated information.

Now look at the 2019 PEG to evaluate whether these limitations fall within at least one of the groupings of abstract ideas.

Do the claimed limitations fall within these groupings?

Mathematical concepts

- mathematical relationships
- mathematical formulas or equations
- mathematical calculations

Mental processes

- concepts performed in the human mind (including an observation, evaluation, judgment, opinion)

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Medical records (claim 2): step 2A Prong One (cont.)

Certain methods of organizing human activity

fundamental economic principles or practices (including hedging, insurance, mitigating risk)

commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations)

managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions)

The claimed concept of a method that allows for users to access and update patients' medical records and store the updated information is a method of managing relationships or interactions between people. This concept falls within the Certain Methods of Organizing Human Activity grouping.

Note: The performance of the claim limitations (e.g., steps a) – c)) using generic computer components (e.g., content server and generic network-based storage devices) does not preclude the claim limitation from being in the certain methods of organizing human activity grouping.

Accordingly, this claim recites an abstract idea.

Medical records (claim 2): step 2A Prong Two

2. A method comprising:

a) storing information about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

b) providing access, by a content server, to users so that any one of the users can update the information about the patient's condition in the collection of medical records, and;

c) storing the updated information about the patient's condition in the collection of medical records in the plurality of network-based non-transitory storage devices.

Evaluate step 2A Prong Two:

Are there additional element(s) or a combination of elements in the claim that 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?

Medical records (claim 2): step 2A Prong Two (cont.)

2. A method comprising:

a) storing information about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

b) providing access, by a content server, to users so that any one of the users can update the information about the patient's condition in the collection of medical records, and;

c) storing the updated information about the patient's condition in the collection of medical records in the plurality of network-based non-transitory storage devices.

The claim recites the additional elements of storing information in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon and storing the updated information in the plurality of network-based non-transitory storage devices.

Medical records (claim 2): step 2A Prong Two (cont.)

2. A method comprising:

a) storing information about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

b) providing access, by a content server, to users so that any one of the users can update the information about the patient's condition in the collection of medical records, and;

c) storing the updated information about the patient's condition in the collection of medical records in the plurality of network-based non-transitory storage devices.

The claim as a whole merely describes how to generally "apply" the concept of storing and updating patient information in a computer environment. The claimed computer components are recited at a high level of generality and are merely invoked as tools to perform an existing medical records update process. Simply implementing the abstract idea on a generic computer is not a practical application of the abstract idea.

Accordingly, the claim as a whole does not integrate the abstract idea into a practical application because they do not impose any meaningful limits on practicing the abstract idea.

Medical records (claim 2): step 2A Prong Two (cont.)

2. A method comprising:

a) storing information about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

b) providing access, by a content server, to users so that any one of the users can update the information about the patient's condition in the collection of medical records, and;

c) storing the updated information about the patient's condition in the collection of medical records in the plurality of network-based non-transitory storage devices.

Step 2A = Yes, the claim is directed to the abstract idea.

Medical records (claim 2): step 2B

2. A method comprising:

a) storing information about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

b) providing access, by a content server, to users so that any one of the users can update the information about the patient's condition in the collection of medical records, and;

c) storing the updated information about the patient's condition in the collection of medical records in the plurality of network-based non-transitory storage devices.

Evaluate Step 2B:

Does the claim provide an inventive concept, i.e., does the claim recite additional element(s) or a combination of elements that amount to significantly more than the judicial exception in the claim?

Medical records (claim 2): step 2B (cont.)

2. A method comprising:

a) storing information about a patient's condition in a plurality of network-based non-transitory storage devices having a collection of medical records stored thereon;

b) providing access, by a content server, to users so that any one of the users can update the information about the patient's condition in the collection of medical records, and;

c) storing the updated information about the patient's condition in the collection of medical records in the plurality of network-based non-transitory storage devices.

As discussed previously with respect to Step 2A Prong Two, the additional element of a plurality of network-based non-transitory storage devices storing information or updated information is simply implementing the abstract idea on a generic computer or merely using a computer as a tool to perform an abstract idea.

The same analysis applies here in 2B. That is, simply implementing the abstract idea on a generic computer or merely using a computer as a tool to perform an abstract idea cannot integrate a judicial exception into a practical application at Step 2A or provide an inventive concept in Step 2B.

Step 2B = No, the claim does not provide an inventive concept (significantly more than the abstract idea). The claim is ineligible.

Drafting a rejection

- **Because this claim (claim 2) is ineligible, it should be rejected as lacking subject matter eligibility under 35 U.S.C. 101. The rejection should:**
  - Identify the abstract idea recited in the claim, and include a reference to the appropriate enumerated grouping of abstract ideas;
  - Identify the additional elements and explain why they do not integrate the abstract idea into a practical application; and
  - Explain why the additional elements do not provide an inventive concept.
- **As discussed in this training, new form paragraphs have been created for use with the 2019 PEG.**
- **A sample rejection of a claim (claim 3 of example 37) under the 2019 PEG is posted on the microsite.**

Back to Examples


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DEPARTMENT OF COMMERCE