

## Subject Matter Eligibility Examples: Abstract Ideas

The following examples should be used in conjunction with the [2019 Revised Patent Subject Matter Eligibility Guidance \(2019 PEG\)](#). The examples below are hypothetical and only intended to be illustrative of the claim analysis 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. That is, it is not necessary for a claim under examination to mirror an example claim to be subject matter eligible under the 2019 PEG. All of the claims are analyzed for eligibility in accordance with their broadest reasonable interpretation.

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

The examples are illustrative only of the patent-eligibility analysis under the 2019 PEG. All claims must be ultimately analyzed for compliance with every requirement for patentability, including 35 U.S.C. 102, 103, 112, and 101 (utility, inventorship and double patenting) and non-statutory double patenting. The analyses provided below do not address considerations other than subject matter eligibility under Section 101.

### **Example 37 – Relocation of Icons on a Graphical User Interface**

#### **Background:**

Traditionally, computer users are limited in the ways in which they can organize icons on their display. Additionally, computer users may have a large number of icons on their display, making it difficult to find the icons most used. The typically available ways to organize icons are alphabetically, by file size, and by file type. 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, traditional software does not automatically organize icons so that the most used icons are located near the “start” or “home” icon, where they can be easily accessed. Therefore, what is needed is a method that allows for such non-traditional arrangements to be performed automatically.

Accordingly, applicant’s invention addresses this issue by providing a method for rearranging icons on a graphical user interface (GUI), wherein the method moves the most used icons to a position on the GUI, specifically, closest to the “start” icon of the computer system, based on a determined amount of use. In a first preferred embodiment, the amount of use of each icon is automatically determined by a processor that tracks the number of times each icon is selected or 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.). In another embodiment, the user can choose to manually enter which icons are used most often using any of a number of ordering and/or ranking systems known to those skilled in the art.

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### Claim 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	Analysis
1: Statutory Category?	<b>Yes.</b> The claim recites a series of steps and, therefore, is a process.
2A - Prong 1: Judicial Exception Recited?	<b>Yes.</b> The claim recites the limitation of determining the amount of use of each icon over a predetermined period of time. This limitation, 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 mind. For example, but for the “by a processor” language, the claim encompasses the user manually calculating the amount of use of each icon. 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.
2A - Prong 2: Integrated into a Practical Application?	<b>Yes.</b> The claim recites the combination of additional elements of receiving, via a GUI, a user selection to organize each icon based on the amount of use of each icon, a processor for performing the determining step, 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 as a whole integrates the mental process into a practical application. Specifically, the additional elements recite a specific manner of automatically displaying icons

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	to the user based on usage which provides a specific improvement over prior systems, resulting in an improved user interface for electronic devices. Thus, the claim is <b>eligible</b> because it is not directed to the recited judicial exception.
2B: Claim provides an Inventive Concept?	<b>N/A.</b>

### Claim 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	Analysis
1: Statutory Category?	<b>Yes.</b> The claim recites a series of steps and, therefore, is a process.
2A - Prong 1: Judicial Exception Recited?	<b>No.</b> The claim does not recite any of the judicial exceptions enumerated in the 2019 PEG. For instance, the claim does not recite a mental process because 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 applied 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. Further, the claim does not recite any

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	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. Thus, the claim is <b>eligible</b> because it does not recite a judicial exception.
2A - Prong 2: Integrated into a Practical Application?	N/A.
2B: Claim provides an Inventive Concept?	N/A.

#### Claim 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	Analysis
1: Statutory Category?	<b>Yes.</b> The claim recites a series of steps and, therefore, is a process.
2A - Prong 1: Judicial Exception Recited?	<p><b>Yes.</b> The claim recites the limitations of determining the amount of use of each icon over a predetermined period of time and ranking the icons based on the determined amount of use. The determining limitation, 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 precludes the determining 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. This limitation is a mental process.</p> <p>The ranking limitations, as drafted, is also a process that, under its broadest reasonable</p>

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	<p>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 precludes the ranking step from practically being performed in the human mind. For example, but for the “by a processor” language, the claim encompasses the user thinking that the most-used icons should be ranked higher than the least-used icons. Thus, this limitation is also a mental process.</p>
<p>2A - Prong 2: Integrated into a Practical Application?</p>	<p><b>No.</b> The claim recites one additional element: that a processor is used to perform both the ranking and determining steps.</p> <p>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 (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.</p> <p>The claim is directed to the abstract idea.</p>
<p>2B: Claim provides an Inventive Concept?</p>	<p><b>No.</b> As discussed 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.</p> <p>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. The claim is <b>ineligible</b>.</p>

### **Example 38 – Simulating an Analog Audio Mixer**

#### **Background:**

Audiophiles are people interested in high-fidelity audio reproduction. For many, this means listening to 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.

Applicant’s invention seeks to more closely replicate the sound quality of an analog audio mixer by accounting for the slight variances in analog circuit values that are generated during the circuit’s manufacturing. By simulating these variances, a more authentic sound can be created that is preferential for the listener. The method begins with a model of an analog circuit representing an audio mixing console. The model includes a location of all the circuit elements within the circuit, an initial value for each of the circuit elements, and a manufacturing tolerance range for each of the circuit elements. A randomized working value of each element is then determined using a normally distributed pseudo random number generator (PRNG) based on the initial value of the circuit element and the manufacturing tolerance range. The model is then simulated using a bilinear transformation to create a digital representation of the analog circuit. This digital representation is then presented to the user through a graphical user interface as an operational digital audio mixer. The user can use the graphical user interface to test the sound quality of the digital representation. If the sound quality is not acceptable to the user, the user can generate new randomized working values for all the circuit elements and simulate another digital representation of the analog audio mixer.

#### **Claim:**

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.

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<b>Step</b>	<b>Analysis</b>
1: Statutory Category?	<b>Yes.</b> The claim recites a series of steps and, therefore, is a process.
2A - Prong 1: Judicial Exception Recited?	<b>No.</b> The claim does not recite any of the judicial exceptions enumerated in the 2019 PEG. The claim does not recite a mathematical relationship, formula, or calculation. While some of the limitations may be based on mathematical concepts, the mathematical concepts are not recited in the claims. With respect to mental processes, the claim does not recite a mental process because the steps are not practically performed in the human mind. Finally, the claim does not recite a certain method of organizing human activity such as a fundamental economic concept or commercial and legal interactions. The claim is <b>eligible</b> because it does not recite a judicial exception.
2A - Prong 2: Integrated into a Practical Application?	<b>N/A.</b>
2B: Claim provides an Inventive Concept?	<b>N/A.</b>

### **Example 39 - Method for Training a Neural Network for Facial Detection**

#### **Background:**

Facial detection is a computer technology for identifying human faces in digital images. This technology has several different potential uses, ranging from tagging pictures in social networking sites to security access control. Some prior methods use neural networks to perform facial detection. A neural network is a framework of machine learning algorithms that work together to classify inputs based on a previous training process. In facial detection, a neural network classifies images as either containing a human face or not, based upon the model being previously trained on a set of facial and non-facial images. However, these prior methods suffer from the inability to robustly detect human faces in images where there are shifts, distortions, and variations in scale and rotation of the face pattern in the image.

Applicant's invention addresses this issue by using a combination of features to more robustly detect human faces. The first feature is the use of an expanded training set of facial images to train the neural network. This expanded training set is developed by applying mathematical transformation functions on an acquired set of facial images. These transformations can include affine transformations, for example, rotating, shifting, or mirroring or filtering transformations, for example, smoothing or contrast reduction. The neural networks are then trained with this expanded training set using stochastic learning with backpropagation which is a type of machine learning algorithm that uses the gradient of a mathematical loss function to adjust the weights of the network. Unfortunately, the introduction of an expanded training set increases false positives when classifying non-facial images. Accordingly, the second feature of applicant's invention is the minimization of these false positives by performing an iterative training algorithm, in which the system is retrained with an updated training set containing the false positives produced after face detection has been performed on a set of non-facial images. This combination of features provides a robust face detection model that can detect faces in distorted images while limiting the number of false positives.

#### **Claim:**

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;



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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	Analysis
1: Statutory Category?	<b>Yes.</b> The claim recites a series of steps and, therefore, is a process.
2A - Prong 1: Judicial Exception Recited?	<b>No.</b> The claim does not recite any of the judicial exceptions enumerated in the 2019 PEG. For instance, the claim does not recite any mathematical relationships, formulas, or calculations. While some of the limitations may be based on mathematical concepts, the mathematical concepts are not recited in the claims. Further, the claim does not recite a mental process because the steps are not practically performed in the human mind. Finally, the claim does not recite any method of organizing human activity such as a fundamental economic concept or managing interactions between people. Thus, the claim is <b>eligible</b> because it does not recite a judicial exception.
2A - Prong 2: Integrated into a Practical Application?	<b>N/A.</b>
2B: Claim provides an Inventive Concept?	<b>N/A.</b>

## **Example 40 – Adaptive Monitoring of Network Traffic Data**

### **Background:**

Network visibility tools enable close monitoring of computer network traffic, applications, performance, and resources. The data acquired through these network visibility tools is extremely useful in optimizing network performance, resolving network issues, and improving network security. One industry standard network visibility protocol is NetFlow. In a typical setup, a NetFlow exporter generates and exports network traffic statistics (in the form of NetFlow records) to at least one NetFlow collector that analyzes the statistics. Because NetFlow records are very large, the continual generation and export of NetFlow records in such a setup substantially increases the traffic volume on the network, which hinders network performance. Moreover, continual analysis of the network is not always necessary when the network is performing under normal conditions.

Applicant's invention addresses this issue by varying the amount of network data collected based on monitored events in the network. That is, the system will only collect NetFlow protocol data and export a NetFlow record when abnormal network conditions are detected. In practice, during normal network conditions, a network appliance collects network data relating to network traffic passing through the network appliance. This network data, for example, could include network delay, packet loss, or jitter. Periodically, the network data is compared to a predefined quality threshold. If this network data is greater than the predefined quality threshold, an abnormal condition is detected. When an abnormal condition is present, the system begins collecting NetFlow protocol data, which can later be used for analyzing the abnormal condition. During this time, the network appliance continues to monitor the network conditions (*i.e.*, comparing collected network data to the predetermined quality threshold) and when the abnormal condition no longer exists, NetFlow protocol data is no longer collected.

### **Claim 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.

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Step	Analysis
1: Statutory Category?	<b>Yes.</b> The claim recites a series of steps and, therefore, is a process.
2A - Prong 1: Judicial Exception Recited?	<b>Yes.</b> The claim recites the limitation of comparing at least one of the collected traffic data to a predefined threshold. This limitation, 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 mind. For example, but for the “by the network appliance” language, the claim encompasses a user simply comparing the collected packet loss data to a predetermined acceptable quality percentage in his/her mind. 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.
2A - Prong 2: Integrated into a Practical Application?	<b>Yes.</b> The claim recites the combination of additional elements of collecting at least one of network delay, packet loss, or jitter relating to the network traffic passing through the network appliance, and collecting additional Netflow protocol data relating to the network traffic when the collected network delay, packet loss, or jitter is greater than the predefined threshold. 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. Specifically, the method limits collection of additional Netflow protocol data to when 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. This 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. Thus, the claim is <b>eligible</b> because it is not directed to the recited judicial exception.
2B: Claim provides an Inventive Concept?	<b>N/A.</b>

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### Claim 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	Analysis
1: Statutory Category?	<b>Yes.</b> The claim recites a series of steps and, therefore, is a process.
2A - Prong 1: Judicial Exception Recited?	<b>Yes.</b> The claim recites the limitation of comparing at least one of the collected traffic data to a predefined threshold. This limitation, 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 mind. For example, but for the “by the network appliance” language, the claim encompasses a user simply comparing the collected packet loss data to a predetermined acceptable quality percentage in his/her mind. 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.
2A - Prong 2: Integrated into a Practical Application?	<b>No.</b> 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. 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. 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).

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	<p>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.</p> <p>The claim is directed to the abstract idea.</p>
2B: Claim provides an Inventive Concept?	<p><b>No.</b> 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 analysis applies here 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.</p> <p>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. 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 <i>Symantec</i>, <i>TLI</i>, and <i>OIP Techs.</i> 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, and conventional function when it is claimed in a merely generic manner (as it is here). Accordingly, a conclusion that the collecting step is well-understood, routine, conventional activity is supported under <i>Berkheimer</i> Option 2.</p> <p>For these reasons, there is no inventive concept in the claim, and thus it is <b>ineligible</b>.</p>

## **Example 41 – Cryptographic Communications**

### **Background:**

Security of information is of increasing importance in computer technology. It is critical that data being sent from a sender to a recipient is unable to be intercepted and understood by an intermediate source. In addition, authentication of the source of the message must be ensured along with the verification of and security of the message content. Various cryptographic encoding and decoding methods are available to assist with these security and authentication needs. However, many of them require expensive encoding and decoding hardware as well as a secure way of sharing the private key used to encrypt and decrypt the message. There is a need to perform these same security and authentication functions efficiently over a public key system so that information can be shared easily between users who do not know each other and have not shared the key used to encrypt and decrypt the information.

To solve these problems, applicants have invented a method for establishing cryptographic communications using an algorithm to encrypt a plaintext into a ciphertext. The invention includes at least one encoding device and at least one decoding device, which are computer terminals, and a communication channel, where the encoding and decoding devices are coupled to the communication channel. The encoding device is responsive to a precoded message-to-be-transmitted  $M$  and an encoding key  $E$  to provide a ciphertext word  $C$  for transmission to a particular decoding device. 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. The decoding device is responsive to the received ciphertext word  $C_A$  and a decoding key to transform the ciphertext to a received message word  $M_A'$ .

The invention improves upon prior methods for establishing cryptographic communications 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 the decryption key (private key  $d$  is not claimed below). Thus, the security of the cipher relies on the difficulty of factoring large integers by computers, and 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).

### **Claim:**

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

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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	Analysis
1: Statutory Category?	<b>Yes.</b> The claim recites a series of steps and, therefore, is a process.
2A - Prong 1: Judicial Exception Recited?	<b>Yes.</b> The claim recites a mathematical formula or calculation that is used to encode each of the message block word signals $M_A$ to produce a ciphertext word signal $C_A$ , whereby $C_A = M_A^e \pmod n$ . Thus, the claim recites a mathematical concept. Note that, in this example, the “encoding” step is determined to recite a mathematical concept because the claim explicitly recites a mathematical formula or calculation.
2A - Prong 2: Integrated into a Practical Application?	<b>Yes.</b> The combination of additional elements in the claim (receiving the plaintext word signal at the first computer terminal, transforming the plaintext word signal to one or more message block word signals $M_A$ , and transmitting the encoded ciphertext word signal $C_A$ to the second computer terminal over a communication channel) integrates the exception into a practical application. 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. Thus, the mathematical concepts are integrated into a process that secures private

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	<p>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. Thus, the claim is not directed to the recited judicial exception, and the claim is <b>eligible</b>.</p> <p>Note that well-understood, routine, conventional subject matter can integrate an abstract idea into a practical application. Thus, 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, Step 2A – Prong 2 does not evaluate whether the additional elements are conventional to determine whether the abstract idea is integrated into a practical application.</p>
2B: Claim provides an Inventive Concept?	<b>N/A.</b>



## **Example 42 – Method for Transmission of Notifications When Medical Records Are Updated**

### **Background:**

Patients with chronic or undiagnosed illnesses often must visit several different medical providers for diagnosis and treatment. These physicians may be physically separate from each other and unaware of each other. During a visit, each medical provider records information about the patient's condition in their own local patient records. These records are often stored locally on a computer in a non-standard format selected by whichever hardware or software platform is in use in the medical provider's local office. It is difficult for medical providers to share updated information about a patient's condition with other health care providers using current patient management systems, due to the above challenges. This can lead to problems with managing prescriptions or having patients duplicate tests, for example. Currently, medical providers must continually monitor a patient's medical records for updated information, which is often-times incomplete since records in separate locations are not timely or readily-shared or cannot be consolidated due to format inconsistencies as well as physicians who are unaware that other physicians are also seeing the patient for varying reasons.

To solve this problem, applicant has invented a network-based patient management method that collects, converts and consolidates patient information from various physicians and health-care 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. The method provides a graphical user interface (GUI) by a content server, which is hardware or a combination of both hardware and software. A user, such as a health care provider or patient, is given remote access through the GUI to view or update information about a patient's medical condition using the user's own local device (e.g., a personal computer or wireless handheld device). When a user wants to update the records, the user can input the update in any format used by the user's local device. Whenever the patient information is updated, it will first be converted into the standardized format and then stored in the collection of medical records on one or more of the network-based storage devices. After the updated information about the patient's condition has been stored in the collection, the content server, which is connected to the network-based storage devices, immediately generates a message containing the updated information about the patient's condition. This message is transmitted in a standardized format over the computer network to all physicians and health-care providers that have access to the patient's information (e.g., to a medical specialist to review the updated information about the patient's medical condition) so that all users can quickly be notified of any changes without having to manually look up or consolidate all of the providers' updates. This ensures that each of a group of health care providers is always given immediate notice and access to changes so they can readily adapt their own medical diagnostic and treatment strategy in accordance with other providers' actions. The message can be in the form of an email message, text message, or other type of message known in the art.

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### Claim 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	Analysis
Step 1: Statutory Category?	<b>Yes.</b> The claim recites a series of steps and, therefore, is a process.
Step 2A - Prong 1: Judicial Exception Recited?	<b>Yes.</b> The claim as a whole recites a method of organizing human activity. The claimed invention is a method that allows for users to access patients' medical records and receive updated patient information in real time from other users which is a method of managing interactions between people. Thus, the claim recites an abstract idea.
Step 2A—Prong 2: Integrated into a Practical Application?	<b>Yes.</b> The claim recites a combination of additional elements including storing information, providing remote access over a network, converting updated information that was input by a user in a non-standardized form to a standardized format, automatically generating a message whenever updated information is stored, and transmitting the message to all of the users. The claim as a whole integrates the method of organizing human activity into a practical application. Specifically, the additional elements recite a specific improvement over prior art systems by allowing remote users to share information in real time in a standardized

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	format regardless of the format in which the information was input by the user. Thus, the claim is <b>eligible</b> because it is not directed to the recited judicial exception (abstract idea).
Step 2B: Inventive Concept?	<b>N/A.</b>

#### Claim 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	Analysis
Step 1: Statutory Category?	<b>Yes.</b> The claim recites a series of steps and, therefore, is a process.
Step 2A - Prong 1: Judicial Exception Recited?	<b>Yes.</b> The claim as a whole recites a method of organizing human interactions. The claimed invention is a method that allows for users to access and update patients’ medical records and store the updated information which is a method of managing interactions between people. The mere nominal recitation of a generic content server and generic network-based storage devices does not take the claim out of the methods of organizing human interactions grouping. Thus, the claim recites an abstract idea.
Step 2A—Prong 2: Integrated into a Practical Application?	<b>No.</b> 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.
Step 2B: Inventive Concept?	<b>No.</b> As noted previously, the claim as a whole merely describes how to generally “apply” the concept of updating medical records in a computer environment. Thus, even when viewed as a whole, nothing in the claim adds

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	significantly more (i.e., an inventive concept) to the abstract idea. The claim is <b>ineligible</b> .
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