Examples: Abstract Ideas

The following examples should be used in conjunction with the 2014 Interim Eligibility Guidance. As the examples are intended to be illustrative only, they should be interpreted based on the fact patterns set forth below. Other fact patterns may have different eligibility outcomes.

This set of examples is arranged into two parts. The first part includes four fact patterns with claims that are patent eligible, several of which draw from U.S. Court of Appeals for the Federal Circuit decisions, and the second part includes four fact patterns with claims that were found ineligible by the Federal Circuit. Each of the examples shows how claims should be analyzed under the 2014 Interim Eligibility Guidance. All of the claims are analyzed for eligibility in accordance with their broadest reasonable interpretation.

Part One

These examples show claims that would be patent **eligible** when analyzed under the 2014 Interim Eligibility Guidance. The first example is a hypothetical claim and fact pattern that illustrates an eligible software invention that is not directed to an abstract idea. The second example is a recent Federal Circuit decision. The third and fourth examples are informed by Federal Circuit decisions where claims were found eligible, but are drafted as hypothetical claims modified to prominently add an abstract idea for teaching purposes to facilitate analysis under the "significantly more" prong of the 2014 Interim Eligibility Guidance.

1. Isolating and Removing Malicious Code from Electronic Messages

Hypothetical claims 1 and 2 are not directed to an abstract idea.

Background

The invention relates to isolating and removing malicious code from electronic messages (*e.g.*, email) to prevent a computer from being compromised, for example by being infected with a computer virus. The specification explains the need for computer systems to scan electronic communications for malicious computer code and clean the electronic communication before it may initiate malicious acts. The disclosed invention operates by physically isolating a received electronic communication in a "quarantine" sector of the computer memory. A quarantine sector is a memory sector created by the computer's operating system such that files stored in that sector are not permitted to act on files outside that sector.

When a communication containing malicious code is stored in the quarantine sector, the data contained within the communication is compared to malicious code-indicative patterns stored within a signature database. The presence of a particular malicious code-indicative pattern indicates the nature of the malicious code. The signature database further includes code markers that represent the beginning and end points of the malicious code.

The malicious code is then extracted from malicious code-containing communication. An extraction routine is run by a file parsing component of the processing unit. The file parsing routine performs the following operations:

1. scan the communication for the identified beginning malicious code marker;

2. flag each scanned byte between the beginning marker and the successive end malicious code marker;

3. continue scanning until no further beginning malicious code marker is found; and

4. create a new data file by sequentially copying all non-flagged data bytes into the new file, which thus forms a sanitized communication file.

The new, sanitized communication is transferred to a non-quarantine sector of the computer memory. Subsequently, all data on the quarantine sector is erased.

Claims

1. A computer-implemented method for protecting a computer from an electronic communication containing malicious code, comprising executing on a processor the steps of:

receiving an electronic communication containing malicious code in a computer with a memory having a boot sector, a quarantine sector and a non-quarantine sector;

storing the communication in the quarantine sector of the memory of the computer, wherein the quarantine sector is isolated from the boot and the non-quarantine sector in the computer memory, where code in the quarantine sector is prevented from performing write actions on other memory sectors;

extracting, via file parsing, the malicious code from the electronic communication to create a sanitized electronic communication, wherein the extracting comprises

scanning the communication for an identified beginning malicious code marker,

flagging each scanned byte between the beginning marker and a successive end malicious code marker,

continuing scanning until no further beginning malicious code marker is found, and

creating a new data file by sequentially copying all non-flagged data bytes into a new file that forms a sanitized communication file;

transferring the sanitized electronic communication to the non-quarantine sector of the memory; and

deleting all data remaining in the quarantine sector.

2. A non-transitory computer-readable medium for protecting a computer from an electronic communication containing malicious code, comprising instructions stored thereon, that when executed on a processor, perform the steps of:

receiving an electronic communication containing malicious code in a computer with a memory having a boot sector, a quarantine sector and a non-quarantine sector;

storing the communication in the quarantine sector of the memory of the computer, wherein the quarantine sector is isolated from the boot and the non-quarantine sector in the computer memory, where code in the quarantine sector is prevented from performing write actions on other memory sectors;

extracting, via file parsing, the malicious code from the electronic communication to create a sanitized electronic communication, wherein the extracting comprises

scanning the communication for an identified beginning malicious code marker,

flagging each scanned byte between the beginning marker and a successive end malicious code marker,

continuing scanning until no further beginning malicious code marker is found, and

creating a new data file by sequentially copying all non-flagged data bytes into a new file that forms a sanitized communication file;

transferring the sanitized electronic communication to the non-quarantine sector of the memory; and

deleting all data remaining in the quarantine sector.

Analysis

Claim 1: Eligible.

The method claim recites a series of acts for protecting a computer from an electronic communication containing malicious code. Thus, the claim is directed to a process, which is one of the statutory categories of invention (*Step 1: YES*).

The claim is then analyzed to determine whether it is directed to any judicial exception. The claimed invention relates to software technology for isolation and extraction of malicious code contained in an electronic communication. The claim is directed towards physically isolating a received communication on a memory sector and extracting malicious code from that communication to create a sanitized communication in a new data file. Such action does not describe an abstract concept, or a concept similar to those found by the courts to be abstract, such as a fundamental economic practice, a method of organizing human activity, an idea itself (standing alone), or a mathematical relationship. In contrast, the invention claimed here is directed towards performing isolation and eradication of computer viruses, worms, and other malicious code, a concept inextricably tied to computer technology and distinct from the types of concepts found by the courts to be abstract. Accordingly, the claimed steps do not recite an abstract idea. Nor do they implicate any other judicial exception. Accordingly, the claim is not directed to any judicial exception (*Step 2A*: *NO*). The claim is eligible.

Claim 2: Eligible.

The claim is directed to a non-transitory computer-readable medium, which is a manufacture, and thus a statutory category of invention (*Step 1: YES*).

The claim recites the same steps as claim 1 stored on a non-transitory computer readable medium such that they are executable on a processor. The invention described by those steps is not directed towards an abstract idea, for the reasons explained above (*Step 2A*: *NO*). The claim is eligible.

2. E-Commerce Outsourcing System/Generating a Composite Web Page

The following claim was found eligible by the Federal Circuit in DDR Holdings, LLC v. Hotels.com et al., 113 USPQ2d 1097 (Fed. Cir. 2014) (DDR). The patent at issue was U.S. Patent No. 7,818,399.

Background

In affiliate commerce systems, website owners or hosts sell space on their web pages in the form of paid advertisements. Many of these advertisements are banner ads that include links to items offered for sale by third-party merchants. When a visitor activates (clicks on) a link, the visitor is instantly transported away from the host's web page to the merchant's web page so that she can purchase the item (a "commerce object", *e.g.*, a product or service) associated with the link. The merchant pays a commission on each such sale to the host of the web page displaying the link. While these advertising links function as a commission-based advertising program that provides the host additional revenues, they have the disadvantage of luring visitor traffic away from the host's web page, which results in the host losing control of potential customers.

The inventor has addressed this problem of retaining control over customers during affiliate purchase transactions, by creating a system for co-marketing the "look and feel" of the host web page with the product-related content information of the advertising merchant's web page. The system can be operated by a third-party outsource provider, who acts as a broker between multiple hosts and merchants. Prior to implementation, a host places links to a merchant's web page on the host's web page. The links are associated with product-related content on the merchant's web page. Additionally, the outsource provider system stores the "look and feel" information from each host's web pages in a computer data store, which is coupled to a computer server. The "look and feel" information includes visually perceptible elements such as logos, colors, page layout, navigation system, frames, mouse-over effects or other elements that are consistent through some or all of each host's respective web pages.

In the inventor's system, a customer who clicks on an advertising link is not transported from the host web page to the merchant's web page, but instead is re-directed to a composite web page that combines product information associated with the selected item and visually perceptible elements of the host web page. The outsource provider's server responds by first identifying the host web page where the link has been selected and retrieving the corresponding stored "look and feel" information. The server constructs a composite web page using the retrieved "look and feel" information of the host web page, with the product-related content embedded within it, so that the composite web page is visually perceived by the customer as associated with the host web page. The server then transmits and presents this composite web page to the customer so that she effectively remains on the host web page to purchase the item without being redirected to the third party merchant affiliate. Because such composite pages are visually perceived by the customer as associated with the host web page, they give the customer the impression that she is viewing pages served by the host. Further, the customer is able to purchase the item without being redirected to the third party merchant affiliate, thus allowing the host to retain control over the customer. This system enables the host to receive the same advertising revenue streams as before but without the loss of visitor traffic and potential customers.

Representative Claim

19. A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:

(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages;

(i) wherein each of the first web pages belongs to one of a plurality of web page owners;

(ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and

(iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;

(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to:

(i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages;

(ii) automatically identify as the source page the one of the first web pages on which the link has been activated;

(iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and

(iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.

Analysis

Claim 19: Eligible.

The claim recites a system comprising a computer server and computer store. The system comprises a device or set of devices and, therefore, is directed to a machine which is a statutory category of invention (*Step 1: YES*).

Next, the claim is analyzed to determine whether it is directed to a judicial exception. This claim recites a system "useful in outsource provider serving web pages offering commercial opportunities," but is directed to automatically generating and transmitting a web page in response to activation of a link using data identified with a source web page having certain visually perceptible elements. The claim does not recite a mathematical algorithm; nor does it recite a fundamental economic or longstanding commercial practice. The claim addresses a business challenge (retaining website visitors) that is particular to the Internet. The claimed

invention differs from other claims found by the courts to recite abstract ideas in that it does not "merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet. Instead, the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks." No idea similar to those previously found by the courts to be abstract has been identified in the claim. During examination, if the examiner does not identify an abstract idea recited in the claim, the claim should be deemed to be not directed to a judicial exception (*Step 2A*: *NO*). The claim is eligible.

Under the 2014 Interim Eligibility Guidance no further analysis would be necessary. In this decision, however, the court went on to point out certain features of the claim that amount to an inventive concept for resolving this particular Internet-centric problem, rendering the claims patent eligible. An excerpt of the court's discussion follows:

> In particular, the ′399 patent's claims address the problem of retaining website visitors that, if adhering to the routine, conventional functioning of Internet hyperlink protocol, would be instantly transported away from a host's website after "clicking" on an advertisement and activating a hyperlink. For example, asserted claim 19 recites a system that, among other things, 1) stores "visually perceptible elements" corresponding to numerous host websites in a database, with each of the host websites displaying at least one link associated with a product or service of a third-party merchant, 2) on activation of this link by a website visitor, automatically identifies the host, and 3) instructs an Internet web server of an "out-source provider" to construct and serve to the visitor a new, hybrid web page that merges content associated with the products of the third-party merchant with the stored "visually perceptible elements" from the identified host website. [ ]
>
> In more plain language, upon the click of an advertisement for a third-party product displayed on a host's website, the visitor is no longer transported to the third party's website. Instead, the patent claims call for an "outsource provider" having a web server which directs the visitor to an automatically-generated hybrid web page that combines visual "look and feel" elements from the host website and product information from the third-party merchant's website related to the clicked advertisement. [ ] In this way, rather than instantly losing visitors to the third-party's website, the host website can instead send its visitors to a web page on the outsource provider's server that 1) incorporates "look and feel" elements from the host website, and 2) provides visitors with the opportunity to purchase products from the third-party merchant without actually entering that merchant's website.

As the court cautioned, "not all claims purporting to address Internet-centric challenges are eligible," but in this case these additional limitations amount to more than simply stating "apply the abstract idea on the Internet." Therefore, when taken as a whole, the claimed invention has additional limitations that amount to significantly more than the abstract idea. Under this reasoning, the claim recites patent eligible subject matter (*Step 2B: YES*).

3. Digital Image Processing

The following hypothetical claims are modeled after the technology in Research Corporation Technologies Inc. v. Microsoft Corp., 627 F.3d 859 (Fed. Cir. 2010) (RCT). The patent at issue was U.S. Patent No. 5,111,310. Hypothetical claims 1-3 are directed to an abstract idea and have additional elements that amount to significantly more than the abstract idea because they show an improvement in the functioning of the computer itself and also show an improvement to another technology/technical field, either of which can show eligibility.

Background

A digital image generally consists of a discrete set of pixels arranged in columns and rows. In a gray scale image, the value of each pixel varies among shades of gray ranging from black at the weakest intensity to white at the strongest intensity. In contrast, a binary image includes pixels that can only have two values, black or white. Some printing devices such as facsimile machines and newspaper printers cannot reproduce gray scale images because they only print in black or white. Therefore, in order to convert a gray scale image into a binary image, halftoning techniques are used. Halftoning creates the illusion of various shades of gray in an image while only using the pixel colors black and white. Certain halftoning techniques involve the pixel-by-pixel comparison of the gray scale image to a two-dimensional array of threshold numbers, also known as a "mask." In digital implementation, the gray scale image to be halftoned is read into memory, and a computer processor compares each pixel of the image to a threshold number at the corresponding position of the mask stored in the computer's memory. Based on that comparison, a binary value representing black or white is output and these outputs are stored together in a binary array known as the dot profile. The dot profile is then converted to a binary display that is the halftoned image (the image for display).

In the instant application, the inventor has improved upon previous halftoning techniques by developing an improved mask called a "blue noise" mask. The blue noise mask requires less memory than previous masks and results in a faster computation time while improving image quality. The blue noise mask is produced through an iterative mathematical operation that begins with generating a dot profile with blue noise properties from an image at a 50% gray level using a blue noise filter. Subsequently, additional dot profiles are generated at differing gray levels. As pixels of the dot profile change across the gray levels, these changes are encoded in a cumulative array. Once all the dot profiles are built, the cumulative array becomes the blue noise mask.

Claims

1. A computer-implemented method for halftoning a gray scale image, comprising the steps of:

generating, with a processor, a blue noise mask by encoding changes in pixel values across a plurality of blue noise filtered dot profiles at varying gray levels;

storing the blue noise mask in a first memory location;

receiving a gray scale image and storing the gray scale image in a second memory location;

comparing, with a processor on a pixel-by-pixel basis, each pixel of the gray scale image to a threshold number in the corresponding position of the blue noise mask to produce a binary image array; and

converting the binary image array to a halftoned image.

2. A non-transitory computer-readable medium with instructions stored thereon, that when executed by a processor, perform the steps comprising:

generating a blue noise mask by encoding changes in pixel values across a plurality of blue noise filtered dot profiles at varying gray levels;

storing the blue noise mask in a first memory location;

receiving a gray scale image and storing the gray scale image in a second memory location;

comparing, on a pixel-by-pixel basis, each pixel of the gray scale image to a threshold number in the corresponding position of the blue noise mask to produce a binary image array; and

converting the binary image array to a halftoned image.

3. A system for halftoning a gray scale image, comprising:

a processor that generates a blue noise mask by encoding changes in pixel values across a plurality of blue noise filtered dot profiles at varying gray levels;

a first memory for storing the blue noise mask; and

a second memory for storing a received gray scale image;

wherein the processor further compares, on a pixel-by-pixel basis, each pixel of the gray scale image to a threshold number in the corresponding position of the blue noise mask to produce a binary image array and converts the binary image array to a halftoned image.

Analysis

Claim 1: Eligible.

The method claim recites a series of acts for generating a blue noise mask and using that blue noise mask to halftone a gray scale image. Thus, the claim is directed to a process, which is one of the statutory categories of invention (*Step 1: YES*).

The claim is then analyzed to determine whether it is directed to any judicial exception. The claim recites the step of generating a blue noise mask, which as defined in the background is produced through an iterative mathematical operation. The courts have found that mathematical relationships fall within the judicial exceptions, often labelled as "abstract ideas." Since the mathematical operation of generating a blue noise mask is recited in the claim, the claim is "directed to" a judicial exception (*Step 2A: YES*).

Next, the claim as a whole is analyzed to determine if there are additional limitations recited in the claim such that the claim amounts to significantly more than the mathematical operation. There are several additional limitations recited in the claim besides the mathematical operation of generating a blue noise mask. First, the claim recites using a processor to generate the blue

noise mask. The claim also recites the steps of storing the blue noise mask in a first memory location and receiving a gray scale image and storing the gray scale image in a second memory location. Thus, the claim uses a processor and memory to perform these steps of calculating a mathematical operation and receiving and storing data. The addition of general purpose computer components alone to perform such steps is not sufficient to transform a judicial exception into a patentable invention. The computer components are recited at a high level of generality and perform the basic functions of a computer (in this case, performing a mathematical operation and receiving and storing data) that would be needed to apply the abstract idea via computer. Merely using generic computer components to perform the above identified basic computer functions to practice or apply the judicial exception does not constitute a meaningful limitation that would amount to significantly more than the judicial exception, even though such operations could be performed faster than without a computer.

The claim also recites the additional steps of comparing the blue noise mask to a gray scale image to transform the gray scale image to a binary image array and converting the binary image array into a halftoned image. These additional steps tie the mathematical operation (the blue noise mask) to the processor's ability to process digital images. These steps add meaningful limitations to the abstract idea of generating the blue noise mask and therefore add significantly more to the abstract idea than mere computer implementation. The claim, when taken as a whole, does not simply describe the generation of a blue noise mask via a mathematical operation and receiving and storing data, but combines the steps of generating a blue noise mask with the steps for comparing the image to the blue noise mask and converting the resulting binary image array to a halftoned image. By this, the claim goes beyond the mere concept of simply retrieving and combining data using a computer.

Finally, viewing the claim elements as an ordered combination, the steps recited in addition to the blue noise mask improve the functioning of the claimed computer itself. In particular, as discussed above, the claimed process with the improved blue noise mask allows the computer to use to less memory than required for prior masks, results in faster computation time without sacrificing the quality of the resulting image as occurred in prior processes, and produces an improved digital image. These are also improvements in the technology of digital image processing. Unlike the invention in Alice Corp., the instant claim is not merely limiting the abstract idea to a computer environment by simply performing the idea via a computer (*i.e.*, not merely performing routine data receipt and storage or mathematical operations on a computer), but rather is an innovation in computer technology, namely digital image processing, which in this case reflects both an improvement in the functioning of the computer and an improvement in another technology. Taking all the additional claim elements individually, and in combination, the claim as a whole amounts to significantly more than the abstract idea of generating a blue noise mask (*Step 2B: YES*). The claim recites patent eligible subject matter.

Claim 2: Eligible.

The claim recites a non-transitory computer-readable medium with stored instructions. The term "non-transitory" ensures the claim does not encompass signals and other transitory forms of signal transmission. Therefore, the claim is directed to a manufacture (an article produced from materials), which is a statutory category of invention (*Step 1: YES*).

The claim recites the same steps as claim 1. Therefore, the claim is directed to the same abstract idea identified in claim 1 which is the mathematical operation of generating a blue noise mask

(*Step 2A: YES*). Similarly, the claim recites the same additional elements of comparing the blue noise mask to a gray scale image to transform the gray scale image to a binary image array and converting the binary image array into a halftoned image. These additional elements add significantly more to the abstract idea as evidenced by the improved functioning of the computer in halftoning a gray scale image and the improved digital image processing. For the same reasons set forth above, taking all the additional claim elements individually, and in combination, the claim as a whole amounts to significantly more than the abstract idea of generating a blue noise mask (*Step 2B: YES*). The claim recites patent eligible subject matter.

Claim 3: Eligible.

The claim recites a system comprising a processor, a first memory and a second memory. The claim is directed to statutory category of invention, ***i.e.*** a machine (a combination of devices) (*Step 1: YES*).

The claim recites the same abstract idea as identified with regard to claim 1, which is the mathematical operation of generating a blue noise mask, and thus is directed to the abstract idea (*Step 2A: YES*). Similarly, the claim recites the same additional elements that compare the blue noise mask to a gray scale image to transform the gray scale image to a binary image array and convert the binary image array into a halftoned image that add significantly more to the abstract idea. For the same reasons set forth above, taking all the additional claim elements individually, and in combination, the claim as a whole amounts to significantly more than the abstract idea of generating a blue noise mask (*Step 2B: YES*). The claim recites patent eligible subject matter.

4. Global Positioning System

The following hypothetical claims are modeled after the technology in SiRF Technology Inc. v. International Trade Commission, 601 F.3d 1319 (Fed. Cir. 2010) (SiRF Tech). The patent at issue was U.S. Patent No. 6,417,801. Hypothetical claims 1 and 2 are directed to an abstract idea and have additional elements that amount to significantly more than the abstract idea because they show an improvement to another technology or technical field.

Background

Global Positioning Systems (GPS) use signals from multiple satellites to calculate the position of a mobile GPS receiver on Earth. Each satellite transmits a signal containing unique pseudo-random noise (PN) codes, satellite positioning data and absolute time information. A mobile GPS receiver generally determines its position using the PN codes, satellite positioning data and the absolute time information from multiple satellite signals. In areas where signal levels are low, it is possible for the mobile GPS receiver to detect the PN codes, but is difficult to obtain the satellite positioning data and absolute time information from the satellite signals.

This application describes systems and methods in which a server wirelessly coupled to a mobile GPS receiver uses a mathematical model to solve for the mobile receiver position without receiving satellite positioning data or absolute time information from a satellite. These systems and methods improve GPS techniques by enabling the mobile GPS receiver to determine its position more accurately and improve its signal-acquisition sensitivity to operate even in weak-signal environments. In particular, the mobile GPS receiver is a mobile device that includes a

GPS antenna, a GPS receiver, a microprocessor, a display, and a wireless communication transceiver. Using mathematical formulas, the device calculates pseudo-ranges (estimated ranges from the GPS receiver to each satellite in view) based on PN codes received from the satellites, and the transceiver sends the pseudo-ranges to the server.

The server is a computer that uses the pseudo-ranges, along with an estimated position based on a known location of a wireless tower and time data from the server's own clock, in mathematical formulas to calculate the absolute time that the GPS receiver received the signals from the satellites. The server then creates a mathematical model that uses the pseudo-ranges and the calculated absolute time to solve for the mobile receiver position, which is transmitted to the mobile device for visual representation on a display. The components of the mobile device and the server (*e.g.*, central processing unit (CPU), clock, wireless tower location database, circuitry, and memory) are all well-known and routine computer components.

Claims

1. A system for calculating an absolute position of a GPS receiver and an absolute time of reception of satellite signals comprising:

a mobile device comprising a GPS receiver, a display, a microprocessor and a wireless communication transceiver coupled to the GPS receiver, the mobile device programmed to receive PN codes sent by a plurality of GPS satellites, calculate pseudo-ranges to the plurality of GPS satellites by averaging the received PN codes, and transmit the pseudo-ranges, and

a server comprising a central processing unit, a memory, a clock, and a server communication transceiver that receives pseudo-ranges from the wireless communication transceiver of the mobile device, the memory having location data stored therein for a plurality of wireless towers, and the central processing unit programmed to:

estimate a position of the GPS receiver based on location data for a wireless tower from the memory and time data from the clock,

calculate absolute time that the signals were sent from the GPS satellites using the pseudo-ranges from the mobile device and the position estimate,

create a mathematical model to calculate absolute position of the GPS receiver based on the pseudo-ranges and calculated absolute time,

calculate the absolute position of the GPS receiver using the mathematical model, and

transmit the absolute position of the GPS receiver to the mobile device, via the server communication transceiver, for visual representation on the display.

2. A method for calculating an absolute position of a GPS receiver and an absolute time of reception of satellite signals comprising:

calculating pseudo-ranges, at a mobile device comprising a GPS receiver, a microprocessor, a display, and a wireless communication transceiver, by averaging PN codes received by the GPS receiver from a plurality of GPS satellites;

wirelessly transmitting the calculated pseudo-ranges from the mobile device to a server, wherein the server comprises a central processing unit (CPU);

calculating, by the server CPU, absolute time that the PN codes were sent from the GPS satellites to the GPS receiver using the pseudo-ranges and an estimated position of the GPS receiver;

using a mathematical model to calculate, by the server CPU, absolute position of the GPS receiver based on the pseudo-ranges and calculated absolute time;

transmitting the absolute position from the server to the mobile device; and

displaying a visual representation of the absolute position on the display of the mobile device.

Analysis

Claim 1: Eligible.

The claim is directed to a statutory category, because a system including a mobile device and a server satisfies the requirements of a machine (as a combination of devices) (*Step 1: YES*).

The claim is then analyzed to determine whether it is directed to any judicial exception. The claim recites mathematical operations (*e.g.*, calculating pseudo-ranges and absolute times, and the mathematical model), which the courts have considered to fall within the judicial exceptions, e.g., as abstract ideas. Because these mathematical operations are recited in the claim, the claim is directed to a judicial exception (*Step 2A: YES*).

Next, the claim as a whole is analyzed to determine whether any element, or combination of elements, is sufficient to ensure that the claim amounts to significantly more than the exception. First, the claim recites using a central processing unit (CPU) for performing the mathematical operations of estimating position, calculating absolute time, and calculating absolute position using a mathematical model. The claim also recites using location data stored in a memory, and time data from a clock. These computer components are recited at a high level of generality and add no more to the claimed invention than the components that perform basic mathematical calculation functions routinely provided by a general purpose computer. Limiting performance of the mathematical calculations to a general purpose CPU, absent more, is not sufficient to transform the recited judicial exception into a patent-eligible invention.

However, the claim is further limited to a mobile device comprising a GPS receiver, microprocessor, wireless communication transceiver and a display that receives satellite data, calculates pseudo-ranges, wirelessly transmits the calculated pseudo-ranges to the server, receives location data from the server, and displays a visual representation of the received calculated absolute position from the server. The programmed CPU acts in concert with the recited features of the mobile device to enable the mobile device to determine and display its absolute position through interaction with a remote server and multiple remote satellites. The meaningful limitations placed upon the application of the claimed mathematical operations show that the claim is not directed to performing mathematical operations on a computer alone. Rather, the combination of elements impose meaningful limits in that the mathematical operations are applied to improve an existing technology (global positioning) by improving the signal-acquisition sensitivity of the receiver to extend the usefulness of the technology into

weak-signal environments and providing the location information for display on the mobile device. All of these features, especially when viewed in combination, amount to significantly more than the judicial exception (*Step 2B: YES*). The claim is eligible.

Claim 2: Eligible.

The claim is directed to a statutory category, because a series of steps including calculating pseudo-ranges and wirelessly transmitting those pseudo-ranges satisfies the requirements of a process (a series of acts) (*Step 1: YES*).

The claim recites the same abstract ideas identified with regard to claim 1, which are the mathematical operations of, *e.g.*, calculating pseudo-ranges and absolute times, and the mathematical model. Thus, this claim is also directed to a judicial exception (*Step 2A:* YES). Similarly, the claim recites the same additional elements of a server CPU estimating position, calculating absolute time, and calculating absolute position using a mathematical model, and a mobile device comprising a GPS receiver, microprocessor, wireless communication transceiver and a display receiving satellite data, calculating pseudo-ranges, wirelessly transmitting the calculated pseudo-ranges to the server, receiving a calculated absolute position from the server, and then displaying a visual representation of the received position. For the same reasons set forth above, taking all the additional claim elements individually, and in combination, the claim as a whole amounts to significantly more than the mathematical operations by themselves (*Step 2B: YES*). The claim is eligible.

Part Two

These examples show claims that were held **ineligible** by the Federal Circuit. The analysis sections are informed by the court decisions but offer exemplary hypothetical analyses under the 2014 Interim Eligibility Guidance.

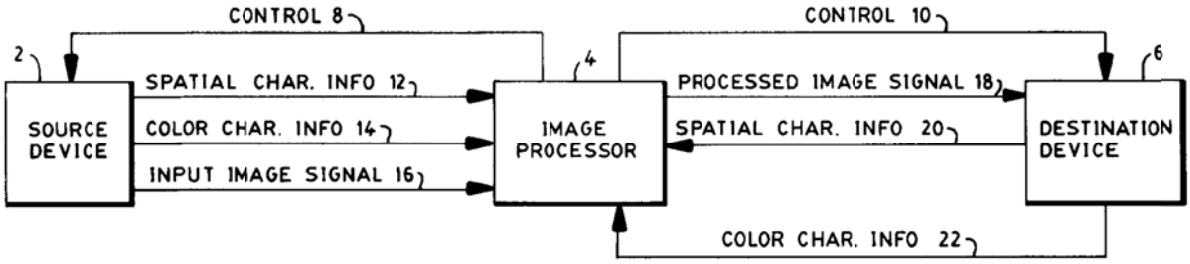
5. Digital Image Processing

The following claim was found ineligible by the Federal Circuit in Digitech Image Tech., LLC v. Electronics for Imaging, Inc., 758 F.3d 1344 (Fed. Cir. 2014). The patent at issue was U.S. Patent No. 6,128,415. The claim is directed to an abstract idea and does not have any additional elements that could amount to more than the abstract idea itself.

Background

In general, digital image processing involves the acquisition of an image at a source device (*e.g.*, digital camera, camcorder, scanner, etc.), processing the image in a desired fashion and outputting the processed image at a destination device (*e.g.*, monitor, printer, computer memory, etc.). However, all image devices, whether source devices or destination devices, impose some level of distortion of an image's color and spatial properties. Some past solutions to address the distortion have used a "device profile," which describes the color properties of both the source and destination devices, to enable a more accurate translation of the image's pixel data into the independent color space across the source and destination devices. The inventor has expanded upon the prior device profile to capture both spatial as well as the color properties of the devices.

In this invention, as seen in Fig. 1 reproduced below, a device profile is created based on information from a source device 2, such as a digital camera, and from a destination device 6, such as a printer. The device profile is used to produce the processed image signal 18 from the input image signal 16. Spatial characteristic information 12, 20 and color characteristic information 14, 22 are provided from each device to an image processor 4, along with the input image signal 16. This characteristic information is used to generate first data relating to color information content of the image and second data relating to spatial information content of the image using known mathematical techniques, such as Fourier analysis to yield a Wiener Noise Power Spectrum (mathematical processing techniques). The generated data is incorporated into the device profile.



Representative Claim

10. A method of generating a device profile that describes properties of a device in a digital image reproduction system for capturing, transforming or rendering an image, said method comprising:

generating first data for describing a device dependent transformation of color information content of the image to a device independent color space through use of measured chromatic stimuli and device response characteristic functions;

generating second data for describing a device dependent transformation of spatial information content of the image in said device independent color space through use of spatial stimuli and device response characteristic functions; and

combining said first and second data into the device profile.

Analysis

Claim 10: Ineligible.

The claim is directed to a statutory category, because a series of steps for generating data satisfies the requirements of a process (a series of acts) (*Step 1: YES*).

Next, the claim is analyzed to determine whether it is directed to a judicial exception. The claim recites a method of generating first data and second data using mathematical techniques and combining the first and second data into a device profile. In other words, the claimed method simply describes the concept of gathering and combining data by reciting steps of organizing information through mathematical relationships. The gathering and combining merely employs mathematical relationships to manipulate existing information to generate additional information in the form of a 'device profile,' without limit to any use of the device profile. This idea is

similar to the basic concept of manipulating information using mathematical relationships (*e.g.*, converting numerical representation in Benson), which has been found by the courts to be an abstract idea. Therefore, the claim is directed to an abstract idea (*Step 2A:* YES).

The claim does not include additional elements beyond the abstract idea of gathering and combining data. Therefore, the claim does not amount to more than the abstract idea itself (*Step 2B: NO*). The claim is not patent eligible.

6. The Game of Bingo

The following claim was found ineligible by the Federal Circuit in Planet Bingo, LLC v. VKGS LLC, 576 Fed. Appx. 1005 (Fed. Cir. 2014). The patent at issue was U.S. Patent No. 6,398,646. The claim is directed to an abstract idea and has additional elements that do not amount to significantly more than the abstract idea.

Background

The invention relates to an automated Bingo system having the ability to print sets of numbers on tickets on site. The system uses a computer to print the tickets, track the sale of the tickets and to validate winning tickets. The computer stores the specific sets of Bingo numbers for a player and prints the tickets having the player's specific set of Bingo numbers to enable the player to play his specific Bingo numbers for various sessions of Bingo. The automated system allows for managing all aspects of a Bingo game, including solving tampering problems and minimizing other security risks during Bingo ticket purchases.

Representative Claim

Claim 1. A system for managing a game of Bingo which comprises:

(a) a computer with a central processing unit (CPU) and with a memory and with a printer connected to the CPU;

(b) an input and output terminal connected to the CPU and memory of the computer; and

(c) a program in the computer enabling:

(i) input of at least two sets of Bingo numbers which are preselected by a player to be played in at least one selected game of Bingo in a future period of time;

(ii) storage of the sets of Bingo numbers which are preselected by the player as a group in the memory of the computer;

(iii) assignment by the computer of a player identifier unique to the player for the group having the sets of Bingo numbers which are preselected by the player wherein the player identifier is assigned to the group for multiple sessions of Bingo;

(iv) retrieval of the group using the player identifier;

(v) selection from the group by the player of at least one of the sets of Bingo numbers preselected by the player and stored in the memory of the computer as the group for play in a selected game of Bingo in a specific session of Bingo wherein a number of sets of Bingo

numbers selected for play in the selected game of Bingo is less than a total number of sets of Bingo numbers in the group;

(vi) addition by the computer of a control number for each set of Bingo numbers selected for play in the selected game of Bingo;

(vii) output of a receipt with the control number, the set of Bingo numbers which is preselected and selected by the player, a price for the set of Bingo numbers which is preselected, a date of the game of Bingo and optionally a computer identification number; and

(viii) output for verification of a winning set of Bingo numbers by means of the control number which is input into the computer by a manager of the game of Bingo.

Analysis

Claim 1: Ineligible.

Claim 1 is directed to a system comprising a computer, an input and output terminal, and a program enabling management of the game of Bingo. The claimed system is therefore directed to a statutory category, *i.e.*, a machine (a combination of devices) (*Step 1: YES)*.

The claim is then analyzed to determine whether it is directed to any judicial exceptions. The claim recites program elements (i) through (viii) that describe the steps of managing a game of Bingo, including for example inputting and storing two sets of Bingo numbers, assigning a unique player identifier and control number, and verifying a winning set of Bingo numbers. Managing the game of Bingo as recited in the claim can be performed mentally or in a computer and is similar to the kind of 'organizing human activity' at issue in Alice Corp. Although the claims are not drawn to the same subject matter, the abstract idea of managing a game of Bingo is similar to the abstract ideas of managing risk (hedging) during consumer transactions (Bilski) and mitigating settlement risk in financial transactions (Alice Corp.) Claim 1 describes managing the game of Bingo and therefore is directed to an abstract idea (*Step 2A: YES*).

Next, the claim is analyzed to determine whether there are additional limitations recited that amount to significantly more than the abstract idea. The claim requires the additional limitations of a computer with a central processing unit (CPU), memory, a printer, an input and output terminal, and a program. These generic computer components are claimed to perform their basic functions of storing, retrieving and processing data through the program that enables the management of the game of Bingo. The recitation of the computer limitations amounts to mere instructions to implement the abstract idea on a computer. Taking the additional elements individually and in combination, the computer components at each step of the management process perform purely generic computer functions. As such, there is no inventive concept sufficient to transform the claimed subject matter into a patent-eligible application. The claim does not amount to significantly more than the abstract idea itself (*Step 2B: NO*). Accordingly, the claim is not patent eligible.

7. E-Commerce providing Transaction Performance Guaranty

The following claim was found ineligible by the Federal Circuit in buySAFE, Inc. v. Google, Inc., 765 F.3d 1350 (Fed. Cir. 2014). The patent at issue was U.S. Patent No. 7,644,019. The claim is directed to an abstract idea and has additional elements that do not amount to significantly more than the abstract idea.

Background

The invention relates to methods for conducting reliable transactions in an e-commerce environment. More specifically, the invention relates to methods providing a performance guaranty in a transaction. When a safe transaction service provider receives a request from a first party for obtaining a transaction performance guaranty service, the safe transaction service provider processes the request by underwriting the first party. If the underwriting is successful, the transaction performance guaranty service is provided to the first party, which binds a transaction performance guaranty to an online commercial transaction involving the first party and guarantees the first party's performance when the first party and second party enter the online transaction.

Representative Claim

1. A method, comprising:

receiving, by at least one computer application program running on a computer of a safe transaction service provider, a request from a first party for obtaining a transaction performance guaranty service with respect to an online commercial transaction following closing of the online commercial transaction;

processing, by at least one computer application program running on the safe transaction service provider computer, the request by underwriting the first party in order to provide the transaction performance guaranty service to the first party,

wherein the computer of the safe transaction service provider offers, via a computer network, the transaction performance guaranty service that binds a transaction performance guaranty to the online commercial transaction involving the first party to guarantee the performance of the first party following closing of the online commercial transaction.

Analysis

Claim 1: Ineligible.

The claim is directed to a process, *i.e.,* a series of steps or acts, for providing a performance guaranty. A process is one of the statutory categories of invention (*Step 1: YES*).

Next, the claim is analyzed to determine whether it is directed to a judicial exception. The claim recites the steps of creating a contract, including receiving a request for a performance guaranty (contract), processing the request by underwriting to provide a performance guaranty and offering the performance guaranty. This describes the creation of a contractual relationship, which is a commercial arrangement involving contractual relations similar to the fundamental economic practices found by the courts to be abstract ideas (*e.g.*, hedging in Bilski). It is also noted that narrowing the commercial transactions to particular types of relationships or particular

parts of that commercial transaction (*e.g.*, underwriting) would not render the concept less abstract. Thus, the claim is directed to an abstract idea (*Step 2A: YES*).

Analyzing the claim as whole for an inventive concept, the claim limitations in addition to the abstract idea include a computer application running on a computer and the computer network. This is simply a generic recitation of a computer and a computer network performing their basic functions. The claim amounts to no more than stating create a contract on a computer and send it over a network. These generic computing elements alone do not amount to significantly more than the judicial exception (*Step 2B: NO*). The claim is not patent eligible.

8. Distribution of Products over the Internet

The following claim was found ineligible by the Federal Circuit in Ultramercial v. Hulu and WildTangent, 2014 U.S. App. LEXIS 21633 (Fed. Cir. 2014). The patent at issue was U.S. Patent No. 7,346,545. The claim is directed to an abstract idea and has additional elements that do not amount to significantly more than the abstract idea.

Background

The invention addresses problems with piracy of digital copyrighted media (video, audio, etc.), especially among people who have limited access to cash and credit cards. The invention is directed to distributing products covered by intellectual property, such as copyright, over a telecommunications network by allowing a consumer to choose to view or interact with a sponsor's message in exchange for access to copyrighted material. The sponsor then pays the holder of the underlying intellectual property, thus allowing the consumer to obtain the product without paying with cash or credit. The invention uses a series of detailed steps that accomplish the exchange of products.

Representative Claim

1. A method for distribution of products over the Internet via a facilitator, said method comprising the steps of:

a first step of receiving, from a content provider, media products that are covered by intellectual property rights protection and are available for purchase, wherein each said media product being comprised of at least one of text data, music data, and video data;

a second step of selecting a sponsor message to be associated with the media product, said sponsor message being selected from a plurality of sponsor messages, said second step including accessing an activity log to verify that the total number of times which the sponsor message has been previously presented is less than the number of transaction cycles contracted by the sponsor of the sponsor message;

a third step of providing the media product for sale at an Internet website;

a fourth step of restricting general public access to said media product;

a fifth step of offering to a consumer access to the media product without charge to the consumer on the precondition that the consumer views the sponsor message;

a sixth step of receiving from the consumer a request to view the sponsor message, wherein the consumer submits said request in response to being offered access to the media product;

a seventh step of, in response to receiving the request from the consumer, facilitating the display of a sponsor message to the consumer;

an eighth step of, if the sponsor message is not an interactive message, allowing said consumer access to said media product after said step of facilitating the display of said sponsor message;

a ninth step of, if the sponsor message is an interactive message, presenting at least one query to the consumer and allowing said consumer access to said media product after receiving a response to said at least one query;

a tenth step of recording the transaction event to the activity log, said tenth step including updating the total number of times the sponsor message has been presented; and

an eleventh step of receiving payment from the sponsor of the sponsor message displayed.

Analysis

Claim 1: Ineligible.

The claim is directed to a process; *i.e.*, a series of steps or acts, for distributing media and advertisements over the Internet. A process is one of the statutory categories of invention (*Step 1: YES*).

The claim is then analyzed to determine whether it is directed to an exception. The claim recites an eleven step process for displaying an advertisement in exchange for access to copyrighted media. That is, the claim describes the concept of using advertising as an exchange or currency. This concept is similar to the concepts involving human activity relating to commercial practices (*e.g.*, hedging in Bilski) that have been found by the courts to be abstract ideas. The addition of limitations that narrow the idea, such as receiving copyrighted media, selecting an ad, offering the media in exchange for watching the selected ad, displaying the ad, allowing the consumer access to the media, and receiving payment from the sponsor of the ad, further describe the abstract idea, but do not make it less abstract. The claim is directed to an abstract idea (*Step 2A: YES*).

Next, the claim as a whole is analyzed to determine whether it amounts to significantly more than the concept of using advertising as an exchange or currency. The claim has additional limitations to the abstract idea such as accessing and updating an activity log, requiring a request from the consumer to view the advertising, restricting public access, and using the Internet as an information transmitting medium.

Viewing the limitations individually, the accessing and updating of an activity log are used only for data gathering and, as such, only represent insignificant pre-solution activity. Similarly, requiring a consumer request and restricting public access is insignificant pre-solution activity because such activity is necessary and routine in implementing the concept of using advertising as an exchange or currency; *i.e.*, currency must be tendered upon request in order for access to be

provided to a desired good. Furthermore, the Internet limitations do not add significantly more because they are simply an attempt to limit the abstract idea to a particular technological environment.

Viewing the limitations as a combination, the claim simply instructs the practitioner to implement the concept of using advertising as an exchange or currency with routine, conventional activity specified at a high level of generality in a particular technological environment. When viewed either as individual limitations or as an ordered combination, the claim as a whole does not add significantly more to the abstract idea of using advertising as an exchange or currency (*Step 2B: NO*). The claim is not patent eligible.