UNITED STATES
PATENT AND TRADEMARK OFFICE

uspto

35 USC 101 Break-Out

07-13-2017

UNITED STATES
PATENT AND TRADEMARK OFFICE
uspto

Review Disclosure

- For the first 10 - 15 minutes, review the provided disclosure to familiarize yourself with the Invention

101 Analysis

- After review of the provided disclosure, independently use the provided quick reference guide and examiner worksheet to determine any 35 USC 101 Abstract ideas for each claim.

Group Discussion

- For the remaining 10 - 15 minutes, come together at your table and discuss individual findings of 101 abstract ideas

Table Reports

2014 Interim Eligibility Guidance Quick Reference Sheet

This quick reference sheet provides a summary of the attached guidance document entitled *2014 Interim Guidance on Patent Subject Matter Eligibility* (*Interim Eligibility Guidance*). As explained in detail in the *Interim Eligibility Guidance*, the attached flowchart illustrates the subject matter eligibility analysis for all claims (*i.e.*, machine, composition of matter, manufacture and process claims). This analysis is to be used during examination for evaluating whether a claim is drawn to patent-eligible subject matter.

Step 1 is represented in diamond (1), and determines whether the claim is directed to a process, machine, manufacture, or composition of matter. This step has not changed and is explained in MPEP 2106(I). If the claim is not directed to one of these statutory categories, reject the claim under 35 U.S.C. § 101 as being drawn to non-statutory subject matter, using revised form paragraphs 7.05 and 7.05.01, and continue examination for patentability. If the claim is directed to a statutory category, proceed to **Step 2**.

Step 2 is the two-part analysis from *Alice Corp.* (also called the *Mayo* test) for claims directed to laws of nature, natural phenomena, and abstract ideas (the judicially recognized exceptions). This step is represented in diamonds (2A) and (2B) and is the subject of the *Interim Eligibility Guidance*.

In **Step 2A**, determine whether the claim is directed to a law of nature, a natural phenomenon, or an abstract idea (judicial exceptions). If no, the claim is **eligible** and examination should continue for patentability. If yes, proceed to **Step 2B** to analyze whether the claim as a whole amounts to significantly more than the exception.

- "Directed to" means the exception is recited in the claim, *i.e.*, the claim sets forth or describes the exception. See Part I.A.1 of the *Interim Eligibility Guidance*.
- If the claim when viewed as a whole clearly does not seek to "tie up" any judicial exception, use the "streamlined analysis" discussed in Part I.B.3 of the *Interim Eligibility Guidance*.
- Examples of the types of concepts that the courts have found to be laws of nature, natural phenomena, or abstract ideas are provided in Parts I.A.2 and IV of the *Interim Eligibility Guidance*.
- If the claim recites a nature-based product limitation, the markedly different characteristics analysis is used to evaluate whether the claim is directed to a "product of nature" that falls under the law of nature and natural phenomenon exceptions. To determine whether the markedly different characteristics analysis is needed, and how to perform this analysis, see Part I.A.3 of the *Interim Eligibility Guidance*.

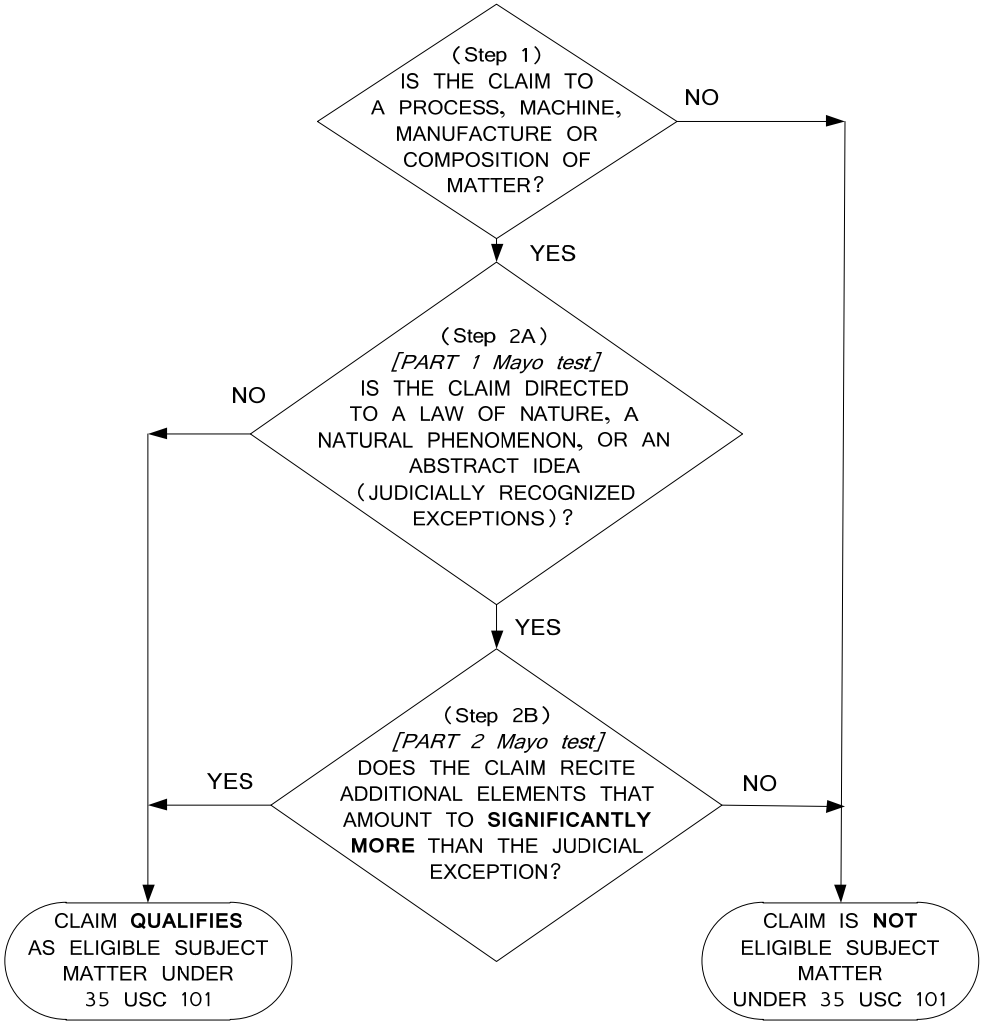
In **Step 2B**, determine whether any element, or combination of elements, in the claim is sufficient to ensure that the claim as a whole amounts to **significantly more** than the judicial exception. If no, the claim is **ineligible**, and should be rejected under 35 U.S.C. § 101 as being drawn to ineligible subject matter, using form paragraphs 7.05 [revised] and 7.05.015 [new]. If yes, the claim is **eligible**. In either case, examination should continue for patentability.

- The additional elements should be considered both individually and as an ordered combination. Individual elements when viewed on their own may not appear to add significantly more, but when viewed in combination may amount to significantly more than the exception.
- The Supreme Court has identified a number of considerations for determining whether a claim with additional elements amounts to significantly more than the judicial exception itself. Examples of these considerations, and how they are applied, are provided in Parts I.B.1 and III of the *Interim Eligibility Guidance*.
- Consider each claim separately based on the particular elements recited therein – claims do not automatically rise or fall with similar claims in an application.
- If a claim is directed to a plurality of exceptions, conduct the eligibility analysis for one of the exceptions. Additional elements that satisfy **Step 2B** for one exception will likely satisfy **Step 2B** for all exceptions in a claim. On the other hand, if the claim fails under **Step 2B** for one exception, the claim is ineligible, and no further eligibility analysis is needed.

2014 Interim Eligibility Guidance Quick Reference Sheet

SUBJECT MATTER ELIGIBILITY TEST FOR PRODUCTS AND PROCESSES

PRIOR TO EVALUATING A CLAIM FOR PATENTABILITY, ESTABLISH THE BROADEST REASONABLE INTERPRETATION OF THE CLAIM. ANALYZE THE CLAIM AS A WHOLE WHEN EVALUATING FOR PATENTABILITY.



IN ACCORDANCE WITH COMPACT PROSECUTION, ALONG WITH DETERMINING ELIGIBILITY, ALL CLAIMS ARE TO BE FULLY EXAMINED UNDER EACH OF THE OTHER PATENTABILITY REQUIREMENTS: 35 USC §§ 102, 103, 112, and 101 (UTILITY, INVENTORSHIP, DOUBLE PATENTING) AND NON-STATUTORY DOUBLE PATENTING.

Notable changes from prior guidance:

- All claims (product and process) with a judicial exception (any type) are subject to the same steps.
- Claims including a nature-based product are analyzed in Step 2A to identify whether the claim is directed to (recites) a "product of nature" exception. This analysis compares the nature-based product in the claim to its naturally occurring counterpart to identify markedly different characteristics based on structure, function, and/or properties. The analysis proceeds to Step 2B only when the claim is directed to an exception (when no markedly different characteristics are shown).

April 2017: Interim Eligibility Guidance Quick Reference Sheet
Decisions Holding Claims Eligible

Claims eligible in Step 2A

Claim is not directed to an ***abstract idea***

DDR Holdings
(matching website "look and feel")
see Example 2

Enfish
(self-referential data table)
see May 19, 2016 Memo

McRO
(rules for lip sync and facial expression animation)
see Nov 2016 Memo

Thales Visionix
(using sensors to more efficiently track an object on a moving platform)

Trading Tech. v. CQG †
(GUI that prevents order entry at a changed price)

Claim is not directed to a ***law of nature*** or ***natural phenomenon***

Eibel Process
(gravity-fed paper machine)
see Example 32

Rapid Lit. Mgmt. v. CellzDirect
(method of cryopreserving liver cells)
see July 14, 2016 Memo

Tilghman
(method of hydrolyzing fat)
see Example 33

Claim is not directed to a ***product of nature*** (because the claimed nature-based product has markedly different characteristics)

Chakrabarty
(genetically modified bacterium)
see Example 13 (NBP-5)

Myriad
(cDNA with modified nucleotide sequence)
see Example 15 (NBP-7)

Claims eligible in Step 2B

(claim as a whole amounts to significantly more than the recited judicial exception, i.e., the claim recites an inventive concept)

Abele
(tomographic scanning)

Amdocs
(field enhancement in distributed network)

BASCOM
(filtering Internet content)
see Nov 2016 Memo & Example 34

Classen
(processing data about vaccination schedules & then vaccinating)

Diehr
(rubber manufacturing)
see Example 25

Mackay Radio
(antenna)

Myriad CAFC
(screening method using transformed cells)

RCT
(digital image processing)
see Example 3

SiRF Tech
(GPS system)
see Example 4

† indicates a non-precedential decision that was issued with a written opinion

April 2017: Interim Eligibility Guidance Quick Reference Sheet
Identifying Abstract Ideas

"An Idea 'Of Itself'"

- Anonymous loan shopping (*Mortgage Grader*)
- Assigning hair designs to balance head shape (*Brown*)†
- Collecting and analyzing information to detect misuse and notifying a user when misuse is detected (*FairWarning*)
- Collecting and comparing known information (*Classen*)
- Collecting, displaying, and manipulating data (*Int. Ventures v. Cap One Financial*)
- Collecting information, analyzing it, and displaying certain results of the collection and analysis (*Electric Power Group; West View*†)
- Comparing data to determine a risk level (*Perkin-Elmer*)†
- Comparing information regarding a sample or test subject to a control or target data (*Ambry/Myriad CAFC*)
- Comparing new and stored information and using rules to identify options (*Smartgene*)†
- Data recognition and storage (*Content Extraction*)
- Delivering user-selected media content to portable devices (*Affinity Labs v. Amazon.com*)
- Determining a price, using organizational and product group hierarchies (*Versata*)
- Diagnosing an abnormal condition by performing clinical tests and thinking about the results (*Grams*)
- Displaying an advertisement in exchange for access to copyrighted media (*Ultramercial*)
- Gathering financial information of potential borrowers (*Clarilogic*)†
- Generating a second menu from a first menu and sending the second menu to another location (*Ameranth*)
- Mental process for logic circuit design (*Synopsys*)
- Migration or transitioning of settings (*Tranxition*)†
- Obtaining and comparing intangible data (*CyberSource*)
- Organizing and manipulating information through mathematical correlations (*Digitech*)
- Providing out-of-region access to regional broadcast content (*Affinity Labs. v. DirecTV*)
- Remotely accessing and retrieving user-specified information (*Int. Ventures v. Erie Indemnity* '002 patent)
- Retaining information in navigation of online forms (*Internet Patents*)
- Storing, gathering, and analyzing data (*TDE Petroleum*)†
- Using categories to organize, store and transmit information (*Cyberfone*)†

"Certain Methods of Organizing Human Activity"

- Arbitration (*Comiskey*)
- Billing insurance companies and organizing patient health information (*Salwan*)†
- Budgeting (*Int. Ventures v. Cap One Bank* '137 patent)
- Cataloging labor data (*Shortridge*)†
- Classifying and storing digital images in an organized manner (*TLI Comms.*)
- Collecting information, analyzing it, and displaying certain results of the collection and analysis (*Electric Power Group*)
- Creating a contractual relationship (*BuySAFE*)
- Creating an index, and using that index to search for and retrieve data (*Int. Ventures v. Erie Indemnity* '434 patent)
- Filtering content (*BASCOM*)
- Generating menus on a computer (*Ameranth*)
- Generating rule-based tasks for processing an insurance claim (*Accenture*)
- Hedging (*Bilski* claims 1-3 & 9)
- Managing a game of bingo (*Planet Bingo*)†
- Managing a stable value protected life insurance policy (*Bancorp*)
- Mental process that a neurologist should follow when testing a patient for nervous system malfunctions (*Meyer*)
- Mitigating settlement risk (*Alice*)
- Organizing and manipulating information through mathematical correlations (*Digitech*)
- Processing loan information (*Dealertrack*)
- Receiving, screening, and distributing e-mail (*Int. Ventures v. Symantec* '050 patent)
- Selecting and sorting information by user interest or subject matter (*Evolutionary Intelligence*)†
- Structuring a sales force or marketing company (*Ferguson*)
- Tailoring content based on information about the user (*Int. Ventures v. Cap One Bank* '382 patent)
- Tax-free investing (*Fort Properties*)
- Testing operators of any kind of moving equipment for any kind of physical or mental impairment (*Vehicle Intelligence*)†
- Using advertising as an exchange or currency (*Ultramercial*)
- Using an algorithm for determining the optimal number of visits by a business representative to a client (*Maucorps*)
- Virus screening (*Int. Ventures v. Symantec* '610 patent)

"Fundamental Economic Practices"

- Billing insurance companies and organizing patient health information (*Salwan*)†
- Conditioning and controlling access to data based on payment (*Smartflash*)†
- Creating a contractual relationship (*BuySAFE*)
- Hedging (*Bilski* claims 1-3 & 9)
- Mitigating settlement risk (*Alice*)
- Coordinating loans (*LendingTree*)†
- Financial instruments that are designed to protect against the risk of investing in financial instruments (*Chorna*)†
- Offer-based price optimization (*OIP Tech*)
- Rules for conducting a wagering game (*Smith*)

"Mathematical Relationships / Formulas"

- A formula describing certain electromagnetic standing wave phenomena (*Mackay Radio*)
- A formula for computing an alarm limit (*Flook*)
- A mathematical formula for hedging (*Bilski* claims 4-8, 10, 11)
- An algorithm for calculating parameters indicating an abnormal condition (*Grams*)
- An algorithm for converting binary coded decimal to pure binary (*Benson*)
- An algorithm for calculating and comparing regions in space (*Coffelt*)†
- Calculating the difference between local and average data values (*Abele*)
- Managing a stable value protected life insurance policy (*Bancorp*)
- Organizing and manipulating information through mathematical correlations (*Digitech*)
- The Arrhenius equation (*Diehr*)
- Using an algorithm for determining the optimal number of visits by a business representative to a client (*Maucorps*)

† indicates a non-precedential decision that was issued with a written opinion

SUBJECT MATTER ELIGIBILITY
WORKSHEET

This worksheet can be used to assist in analyzing a claim for "Subject Matter Eligibility" (SME) under 35 U.S.C. 101 for any judicial exception (law of nature, natural phenomenon, or abstract idea) in accordance with the 2014 Interim Eligibility Guidance. As every claim must be examined individually based on the particular elements recited therein, a separate worksheet should be used to analyze each claim. The use of this worksheet is optional.

For purposes of simplicity in this workshop, the questions below only refer to *abstract ideas* and will be used to walk through several of the abstract ideas examples published on the website. (A blank generic worksheet is available on the training website.) It is suggested that the worksheet be used with the *2014 Interim Eligibility Guidance Quick Reference Sheet*, which includes an overview of the analysis, along with the flowchart and form paragraphs referenced herein.

Worksheet Summary: Section I is designed to address the first activity in examination, which is to determine what applicant invented and to construe the claim in accordance with its broadest reasonable interpretation (BRI). Next, referring to the eligibility flowchart reproduced in the *Quick Reference Sheet*, Section II addresses *Step 1* regarding the four statutory categories of invention. Section III addresses *Step 2A* by determining whether the claim is directed to an abstract idea. Section IV addresses *Step 2B* by identifying additional elements to determine if the claim amounts to significantly more than an abstract idea.

Application/Example No. and claim: _____

I. What did applicant invent?

Review the disclosure to identify what applicant considers as the invention. (MPEP 2103(I))

Applicant invented:

_____

_____

Establish the broadest reasonable interpretation (BRI) of the claim.

II. Does the claimed invention fall within one of the four statutory categories of invention (process, machine, manufacture or composition of matter) (Step 1)?

Choose A or B:

A. Yes, the claimed invention is a _____. **Continue with the SME analysis**.

B. No, the claimed invention is not one of the four statutory categories. Make a rejection of the claim as being drawn to non-statutory subject matter. *Use Form Paragraphs 7.05 and 7.05.01 available in Custom OACs.*

If the claim could be amended to fall within one of the statutory categories, it is recommended to **continue with the SME analysis** under that assumption. Make the

assumption clear in the record if a rejection is ultimately made under *Step 2*, and consider suggesting a potential amendment to applicant that would result in the claim being drawn to a statutory category.

If no amendment is possible, **conclude the SME analysis** and continue with examination under each of the other patentability requirements.

III. Is the claim directed to an abstract idea (Step 2A)?

Courts have found certain concepts to be "abstract ideas", for example fundamental economic practices, certain methods of organizing human activity, ideas themselves (standing alone), or mathematical relationships/formulae. Assistance in identifying such abstract ideas can be obtained by referring to the case law chart available on the website and the court case discussions in the 2014 Interim Eligibility Guidance. A claim is "directed" to an abstract idea when the abstract idea is recited (*i.e.*, **set forth** or **described**) in the claim.

Choose A, B, or C:

A. No, the claim does not recite a concept that is similar to those found by the courts to be abstract. **Conclude SME analysis** and continue with examination under each of the other patentability requirements. If needed, the record can be clarified by providing remarks in the Office action regarding interpretation of the claim (*for example*: the broadest reasonable interpretation of the claim is not directed to an abstract idea.)

B. Yes, but the streamlined analysis is appropriate as the eligibility is self-evident, and a full eligibility analysis is not needed. Applicant's claimed invention, explained in Section I above, is not focused on the abstract idea, and the claim clearly does not attempt to tie up an abstract idea such that others cannot practice it. (Refer to the February 2015 Training Slides for information and examples of a streamlined analysis.) **Conclude SME analysis** and continue with examination under each of the other patentability requirements.

C. Yes, identify the limitation(s) in the claim that recite(s) the abstract idea and explain why the recited subject matter is an abstract idea. After identifying the abstract idea, **continue with SME analysis.**

The limitation(s) in the claim that set(s) forth or describe(s) the abstract idea is (are):

_____

_____

_____

The reason(s) that the limitation(s) are considered an abstract idea is (are):

_____

_____

IV. Does the claim as a whole amount to significantly more than the abstract idea (Step 2B)?

A. Are there any additional elements (features/limitations/step) recited in the claim beyond the abstract idea identified above?

Choose 1 or 2:

1. No, there are no other elements in the claim in addition to the abstract idea. **Conclude SME analysis** by making a § 101 rejection and continue with examination under each of the other patentability requirements. *Use Form Paragraphs 7.05 and 7.05.015 available in Custom OACs.*

   Are there elements in the disclosure that could be added to the claim that may make it eligible? Identify those elements and consider suggesting them to applicant:

   _____

   _____

2. Yes, the claim elements (features/limitations/steps) in addition to the abstract idea are:

   _____

   _____

   _____

   Continue with the SME analysis.

B. Evaluate the significance of the additional elements. Identifying additional elements and evaluating their significance involves the search for an "inventive concept" in the claim. It can be helpful to keep in mind what applicant invented (identified in Section I above) and how that relates to the additional elements to evaluate their significance.

Consider all of the identified additional elements individually and in combination to determine whether the claim as a whole amounts to significantly more than the abstract idea identified above. Reasons supporting the significance of the additional elements can include one or more of the following:

- improves another technology or technical field
- improves the functioning of a computer itself
- applies the abstract idea with, or by use of, a particular machine
  - *not* a generic computer performing generic computer functions
  - *not* adding the words "apply it" or words equivalent to "apply the abstract idea"
  - *not* mere instructions to implement an abstract idea on a computer
- effects a transformation or reduction of a particular article to a different state or thing

- adds a specific limitation other than what is well-understood, routine and conventional in the field
  - *not* appending well-understood, routine, and conventional activities previously known to the industry, specified at a high level of generality
  - *not* a generic computer performing generic computer functions
- adds unconventional steps that confine the claim to a particular useful application
  - *not* adding insignificant extrasolution activity, such as mere data gathering
- adds meaningful limitations that amount to more than generally linking the use of the abstract idea to a particular technological environment

Complete (1) or (2) below:

1. Yes, the additional elements, taken individually or as a combination, result in the claim amounting to significantly more than the abstract idea because

_____

_____

_____

If any elements, individually or as a combination, amount to the claim reciting significantly more than the abstract idea, **conclude SME analysis** and continue with examination under each of the other patentability requirements. If needed, the record can be clarified by providing remarks in the Office action regarding interpretation of the claim (*for example*: the claim recites the abstract idea of "x", but amounts to significantly more than the idea itself with the additional element "y" because "abc".)

2. No, the additional elements, taken individually and as a combination, do not result in the claim amounting to significantly more than the abstract idea because

_____

_____

_____

If no elements, taken individually and as a combination, amount to the claim reciting significantly more than the abstract idea, **conclude the SME analysis** by making a § 101 rejection and continue with examination under each of the other patentability requirements. *Use Form Paragraphs 7.05 and 7.05.015 available in Custom OACs.*

Are there elements in the disclosure that could be added to the claim that may make it eligible? Identify those elements and consider suggesting them to applicant:

_____

_____

Sample Rejection:

Use Form Paragraphs 7.05 and 7.05.015

Claim __ is rejected under 35 U.S.C. 101 because the claimed invention is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more. Claim __ is directed to

_____

_____

_____

The claim does not include additional elements that are sufficient to amount to significantly more than the judicial exception because

_____

_____

_____

Verifying a Bank Customer's Identity to Permit an ATM Transaction

The following fact pattern and claims are hypothetical. Assume that the claims are presented in a recently filed application that is under examination and thus each claim is given its broadest reasonable interpretation in view of the specification as it would be understood by one of ordinary skill in the art. In this example, the terms in the claim are given their plain meaning in the art because no special definitions have been set forth in the specification. An abbreviated version of the hypothetical specification is provided below.

Background

Financial institutions routinely provide automated teller machines (ATMs) for customers to conduct banking transactions at convenient locations other than brick-and-mortar banks, and without the need to interact with a bank teller. Typical ATMs include a customer interface with a keypad, function key, display, outlet slot for statements or other information, cash dispenser slot, deposit inlet, and often a speaker to provide customer voice guidance and a camera to monitor transactions. A reader is provided for customers to present data bearing records, which can include data corresponding to the customer, financial accounts, or other data, and are commonly embodied as a bank card with a magnetic strip or a contactless card with a radio frequency identification (RFID) tag. Other input devices, such as a biometric reader to receive customer identifying inputs such as fingerprints, iris scans, and face topography data, a camera, or speech recognition device, used to identify a user can be provided as well. The customer interface is coupled to a controller with a processor and memory and a network communicator to enable communication between the controller and a financial institution to exchange information about the transactions. To conduct a transaction, a customer typically inserts a bank card into the appropriate slot in the ATM and inputs a personal identification number (PIN) that verifies that the user is an authorized user for the bank account associated with the bank card. The account data is read from the card using the reader in the ATM and the PIN associated with the card. The network communicator transmits the read data and PIN to a remote computer at the financial institution, which then transmits instructions back to the ATM regarding authorization to carry out the requested transaction.

Due to its speed and convenience, the use of ATMs to conduct banking business has become ubiquitous, but so have problems with theft and fraud. For example, if another person illegally or fraudulently obtains a user's PIN, that person can gain access to funds in the account. Another problem associated with ATMs is "skimming" where a false card reader that appears to be a legitimate reader is affixed to an ATM to obtain an authorized user's account information and PIN. In skimming operations, an authorized user unwittingly presents their bank card to the skimming device on the ATM and enters their PIN, which is then captured and stored for subsequent fraudulent activity.

There have been various solutions attempting to reduce the instance of fraud associated with ATMs and to improve security when verifying an authorized user. For example, some bank cards are provided with chips that interact with a special reader to generate a unique transaction number each time a transaction is conducted to reduce the chance that a user's account information and PIN can be stolen for later use (so-called "chip and pin" cards). Bank cards have also been outfitted with RFID tags or "smart labels" (non-contact transponders) that allow account information to be transmitted to an ATM without inserting the card into the machine, and thus exposing it to theft or skimming. The smart label can contain various types of customer information, including profile data, preferences, and unique customer identification

data. To conduct a transaction using such a contactless card, the customer brings the card into range of an ATM reader, which uses radiofrequencies to interrogate the smart label to receive information about the customer. The interrogation can be encrypted to provide additional security. The customer can then start a transaction, e.g., by pressing an enter key on the ATM. While such cards can prevent fraud based on skimming, these non-contact cards have given rise to other security issues, such as allowing a malicious person to obtain card information by use of an unauthorized RFID reader.

Applicant has invented a method of ensuring secure transmission of data from a card using a smart label and encryption techniques. The invention leverages the wide-spread use of mobile personal communication devices (smart phones) to facilitate the secure transmission. When a customer is issued a bank card with a smart label, the financial institution also provides a downloadable software application to the customer to install on their mobile communication device. The software application is designed to assist communication with a specially outfitted ATM.

The ATM in accordance with this invention includes a controller that is programmed with a time-variant random code generator. The code generator generates a random code when activated in response to the reader receiving data from the customer's bank card. In other words, when the customer is within a certain range of the ATM with their bank card, the smart label is read from the RFID reader in the ATM, which signals the code generator to generate a time-variant random code, which can be a plurality of digits, numbers and/or letters. The ATM then provides the random code to the customer. In one embodiment, the ATM provides the random code by displaying it. The customer is prompted to enter the displayed code into their mobile device, which already has the institutional software installed. In another embodiment, the random code is transmitted by the ATM to the customer's mobile device, e.g., by a near-field communication or Bluetooth link, if the customer has installed the institutional software on their mobile device and registered their mobile device with the institution.

The software provided by the institution generates data in response to the random code, which may be, e.g., a customer confirmation code or an encryption that includes the code data and the card's data. The software then causes the mobile device to communicate the responsive data to the ATM. In one embodiment, the mobile device displays the encrypted data as an image on its display screen. The image can be machine readable data in the form of a bar code or an image such as a colored pattern. The customer is prompted to allow the ATM to scan the image displayed by the mobile device. The reader of the ATM reads the encrypted image and verifies that it is authentic by, for example, determining if it is readable, recognizable, or properly formatted. Once verified, the processor in the ATM decrypts the data and confirms that the decrypted code matches the random code that was generated for the current transaction session. In another embodiment, the customer confirmation code is obtained by the ATM (e.g., by transmission over near-field communication or Bluetooth link), and the ATM then confirms that the customer confirmation code matches the random code. The outcome of the comparison between the responsive code data (e.g., the decrypted code or the customer confirmation code) and the random code is used to control access to the keypad. In particular, if the responsive code data and the generated code match and the elapsed time is within a certain time frame, the transaction is continued in conventional fashion with the customer entering a PIN using the keypad. If the responsive code data and generated code do not match or the elapsed time exceeds the time frame, a signal is sent to lock the keypad so that any attempts at entering a PIN will be futile.

Applicant's method allows the ATM to receive user card data in a more secure and efficient manner. Customer card data entry begins before PIN entry and verification, so if the ATM user is not the authorized customer and does not have the appropriate verification software on their mobile device, the transaction is concluded before entry of the PIN. This method prevents skimming and other techniques to fraudulently obtain a customer's PIN and even theft of the card since the downloaded software can authenticate the user and likewise authenticate the ATM before the PIN is produced.

Claims

1. A method of conducting a secure automated teller transaction with a financial institution by authenticating a customer's identity, comprising the steps of:

obtaining customer-specific information from a bank card,

comparing, by a processor, the obtained customer-specific information with customer information from the financial institution to verify the customer's identity, and

determining whether the transaction should proceed when a match from the comparison verifies the authenticity of the customer's identity.

2. A method of conducting a secure automated teller transaction with a financial institution by authenticating a customer's identity, comprising the steps of:

obtaining customer-specific information from a bank card,

comparing, by a processor, the obtained customer-specific information with customer information from the financial institution to verify the customer's identity, by

generating a random code and transmitting it to a mobile communication device that is registered to the customer associated with the bank card,

reading, by the automated teller machine, an image from the customer's mobile communication device that is generated in response to receipt of the random code, wherein the image includes encrypted code data,

decrypting the code data from the read image, and

analyzing the decrypted code data from the read image and the generated code to determine if the decrypted code data from the read image matches the generated code data, and

determining whether the transaction should proceed when a match from the analysis verifies the authenticity of the customer's identity.

3. A method of conducting a secure automated teller transaction with a financial institution by authenticating a customer's identity, comprising the steps of:

obtaining customer-specific information from a bank card,

comparing, by a processor, the obtained customer-specific information with customer information from the financial institution to verify the customer's identity, by

generating a random code and visibly displaying it on a customer interface of the automated teller machine,

obtaining, by the automated teller machine, a customer confirmation code from the customer's mobile communication device that is generated in response to the random code, and

determining whether the customer confirmation code matches the random code, and

automatically sending a control signal to an input for the automated teller machine to provide access to a keypad when a match from the analysis verifies the authenticity of the customer's identity, and to deny access to a keypad so that the transaction is terminated when the comparison results in no match.